ENERGY

~~3-4-3-80~~

4-1-80 — 31-3-80

WORLD OIL (55) punch 11/1/80

The road to chaos

In the scant two weeks since Opec's Caracas conference, world oil prices have been well and truly shoved on to the escalator, as gloomily predicted by the *FM* (December 14). The latest news is that Nigeria is to increase its price to \$34.48 (from \$31.03). Believe it or not, the increase is attributed to a need to "restore the competitiveness of Nigerian oil in international markets."

Facetiousness aside, Opec, post-Caracas, is busy confirming the worst expectations of Western oil commentators. For the present, at any rate, the Saudis are holding the line at \$24 per barrel. But at least one of the other price "doves" — Venezuela — has already broken ranks, with an increase of \$2 to \$26 per barrel.

Meanwhile, Libya has gone from \$30 to \$35. It has been reported that Algeria will be charging \$30, but this was before the very latest round of leapfrogging increases, so it would not surprise if this producer too went through the \$30 barrier. Indonesia has also increased its price.

Maverick Iran is supposed to have a base price of \$28,50, but has just done a big deal with Japan at an average of \$30, and is also selling large quantities on the spot market at anything up to \$45. Japan has reportedly been in trouble with its Western allies through recent panicky purchases from Iran at spot market prices in the range \$40 to \$45.

The diversion of large quantities of oil to the spot market by many other Opec producers actually makes official price ranges less meaningful than ever before. Only concerns active in the market can have even an approximate idea of actual average prices. But even allowing for Saudia's 9,5m barrels per day at \$24, the Opec average must, taking account of spot sales, be edging up fast to the \$30 level.

Other bad news is that non-member Mexico is increasing its price by 30% to \$32. And the United Arab Emirates is cutting output by 5% (effective January 1), so confirming the fear that production cuts and price rises will continue to feed on each other through 1980.

Financial Mail January 4 1980

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Olie-tekort kan SA

Rapport 6/1/8

HIERDIE jaar gaan daar skerp stygings in die olieprys wees. Die produksie van ru-olie in die Midde-Ooste gaan ingekort word, en Suid-Afrika loop die gevaar om weer op 'n olie-tekort af te stuur indien die land nie sy olievoorrade bewaar nie.

Dit is die menings van twee van Suid-Afrika se voorste kenners op die gebied van olie en energiebronne. Hulle is dr. Etienne Rousseau, voormalige voorsitter van Sasol en huidige voorsitter van Federale Volksbeleggings, en prof. Bill van Rensburg, hoogleraar in geologie aan die Universiteit van Texas.

Prof. Van Rensburg was tot begin verlede jaar direkteur van die Instituut vir Energiestudies aan die Randse Afrikaanse Universiteit. Hy is ook direkteur van Texas se navorsingsinstituut vir mynbou- en mineralehulpbronne, en mede-direkteur van die staat se geologiese opname.

Prof. Van Rensburg sê die olieprys in 1980 nog ver bo 30 dollar per vat sal styg. ,,Die olie-produserende lande sal nog vra wat hulle wil vir hul olie, en die prys sal dan afhang van wat die verbruikers bereid is om te betaal."

Hy meen dat olieprodusente hul produksie gaan inkort om hul voorrade vir die volgende geslag te bewaar. Dit sal beteken dat olie skaarser op die ope mark sal word.

Dr. Rousseau sê dat Suid-Afrikaners opnuut weer onder die besef gebring moet word dat olie in Suid-Afrika òf gekoop moet word, òf gemaak moet word. Dat die prys gaan styg, is nie te betwyfel nie.

,,Daar is hoegenaamd geen rede waarom die olieprodusente hul pryse hoef laag te hou nie," sê hy. „Hulle is Moslems en hulle het geen ingeboude meegevoel vir hul Christen-klante nie."

Al wat die Arabiere sal verhinder om die prys van olie regtig die hoogte te laat inskiet, is dat hulle darem besef dat hulle nie die hen met die goue eier moet slag nie. Maar hulle sal wel hul olie-produksie inkort, meen hy.

Suid-Afrika sal met selfs groter verantwoordelikheid as voorheen sy olievoorrade moet beheer, sê dr. Rousseau. „In die verlede het Suid-Afrikaners bewys dat hulle nie regtig bereid is om groot opofferinge te maak om brandstof te bewaar nie."

J. Hirshleifer
J. Riley

October 31, 1978

UNCERTAINTY AND INFORMATION IN ECONOMICS

Traditional economic analysis passes over, in more or less embarrassed silence, the problem of uncertainty. The central elements of economic reasoning have been shaped into models of ever-increasing precision, but models that presume a degree of knowledge on the part of economic decision-makers that is patently unreasonable -- for example, that the firm knows its demand function, not merely in the present but up to the economic horizon. Such an unrealistic picture of the actual decision-making situation means that economic theory is of little help to a business man facing an actual marketing choice. At best the Law of Large Numbers operates to reduce the importance of uncertainty at the market level, thereby allowing the fiction of the average or "representative" individual.

Much more fundamentally, models postulating behavioral certainty are completely inconsistent with observable real-world activities of the first importance -- among them insurance, speculation, research, advertising, and even education.

In the past twenty years, however, an exciting new literature has addressed the problems of decision and market equilibrium under uncertainty. This literature has two main foundation-stones: (1) the Von Neumann-Morgenstern preference for uncertain contingencies and in "expected-utility theorem", and (2) Arrow's f ultimate goods or objects of choice in an unce

ry 7 1980 Mon 7/1/80 3 (55)

Gas rumour dismissed

Soekor has dismissed a rumour that a large and exploitable gas field has been discovered off Struisbaai, close to the southernmost tip of Africa.

The Soekor statement said: "Although some signs of gas have been found in the borehole concerned (F-R1) there are, at this stage, no indications whatsoever of a large or economically exploitable gas field."

American team of Democrats probe Sasol

RDM 9/1/80

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By GAVIN ROBSON

A HIGH-powered contingent of United States congressmen, Democratic Party supporters and aides, has arrived in South Africa to conduct an intensive fact-finding probe of the giant oil-from-coal Sasol plants in South Africa.

Heading the 40-strong group is the Democrat House leader, and the man considered the second most powerful congressman in the party, Mr James Wright.

Tomorrow, he and a three other top Democrats will fly by helicopter to the Sasol II plant where they will hold meetings with Sasol managing director, Mr J A Stegmann and his deputy, Mr J C Hoogendoorn.

Other members of the Sasol-probe team will travel by bus to the Sasol I, II and III plants, were they will investigate the technical, administrative and oil-from-coal extraction processes being employed.

A spokesman for Sasol said it appeared America had now become so distraught with the pressing world energy crisis that it was now seriously considering the construction of oil extraction plants in the United States similar to Sasol.

He also disclosed that following the fact-finding mission and a report-back to the US Congress, there was the strong possibility that South African technical experts involved in the Sasol plants would travel to the US to assist the Americans should they go ahead and build their own plants.

Mr Clarence Keyter, public relations officer for Sasol, said the American probe is being viewed by Sasol as a reciprocal visit following talks by Mr Stegmann and Mr Hoogendoorn with US politicians, officials and individuals in the United States interested in the now-labelled 'synfuel' programme.

The September visit was considered by Sasol officials as a significant step in Sasol's chances of cashing in on as US development of a massive synthetic fuel industry this decade.

The contingent will make an on-the-spot analyses of Sasol plants and a thorough investigation into the feasibilty of producing oil from coal, as "a possible answer to America's energy crisis", a US spokesman said.

He added it was realistic to assume a report-back on Sasol would be given to a full Congress which is scheduled to meet in February.

This is not the first occasion American interest has been shown in Sasol.

The giant corporation, Fluor, of Los Angeles, has signed a joint agreement with Sasol II and III which provides for their marketing of Sasol technology in the US.

The Texas Eastern Corporation, a Houston-based diversified energy corporation, had asked Sasol to undertake a feasibility study to build synthetic fuel plants in the United States.

Also, in October last year, Mr Stegmann confirmed, top sub-committee aides of the House of Representatives had made two trips to South Africa.

After spending all of Thursday at the Sasol plants, the 40-strong party will return to Johannesburg and then leave for the United States on Friday.

55 fm 11/1/80

ALTERNATIVE ENERGY

No power to the mealie

Indications are that the ethanol and methanol alternative energy schemes which have been proposed to stretch SA's fuel resources will get the thumbs down from the government.

The *FM* understands that at its meeting on December 6, the sub-committee on alternative liquid fuels, chaired by Secretary for Industries Philip Theron, came out against any of these particular fuel routes.

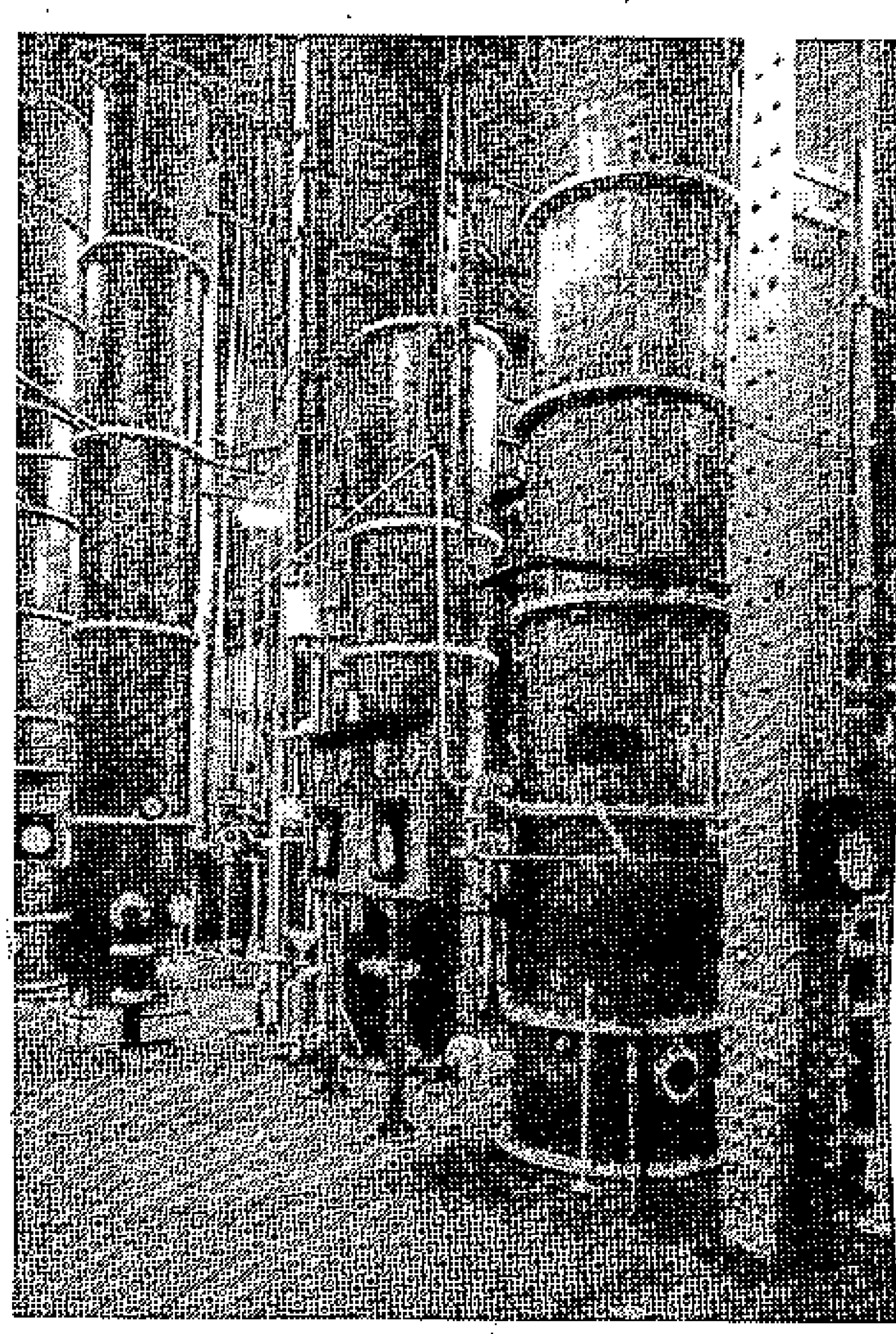
It seems the feeling is that Sasol synfuel will do the job.

The issue has apparently become a political hot potato because of the various interest groups lobbying for the different solutions, and nothing by way of official on-the-record comment has been made.

Leading proponent of the ethanol (ethyl alcohol) solution is Sentrachem, which has plans for 10 ethanol plants around the country using maize, sugar cane or cassava as feedstocks. They would cost a total of R350m and, blended with petrol or diesel, provide about a 10th of SA's liquid fuel requirements.

Other lobbies, notably the timber industry, have proposed production of methanol, which can be used in a broadly similar way.

The case, especially for ethanol, is both economic and sociological: the cultivation of various field crops in backward regions of SA — effectively the black homelands — would provide a strong cash impetus to rural development and a means to mop up unemployment.



Sentrachem ethanol plant . . . down with alternatives

Against this, the Sasol method offers sound economic advantages which may well be carrying the day on their own merits:

- The Sasol process is now well-proven and operating well (although the ethanol process uses some very old-fashioned technology, long in operation on a substantial scale).
- The major financial item in the Sasol process is the capital cost, so that inflation works in its favour once the plant is up. With ethanol from crops, most of the cost lies in current items like labour, so that the product price is very vulnerable to inflation.
- Only Sasol can produce significant quantities of diesel fuel, the most acute current need.
- The raw material for the Sasol process, coal, is available in essentially unlimited quantities.
- The large construction team presently working at Secunda could quite logically be transferred on completion of Sasol II and III to new sites for more Sasol plants, so maintaining continuity of work.

As usual, the decision-making process is shrouded in secrecy — the "black box effect" so familiar to the SA business community. And the punitive provisions of the relevant statute, the Petroleum Products Amendment Act, make it difficult to offer pertinent criticism.

But it does not seem that strategic considerations merit either the obsessive secrecy (which prevents public debate on an important national topic) or the delay in announcing a decision.

'US should learn lesson of Sasol'

SDM 12/11/80

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By GAVIN ROBSON

THE most positive step the United States can take to gain energy independence and re-establish its leadership is to follow the example of Sasol technology.

Mr James Wright, the Democratic Party leader of the US House of Representatives and the second most powerful Democrat in his country, said this in an interview with the Rand Daily Mail.

He outlined the message he would take back to the US Government and other members of Congress.

"I think Sasol technology is exactly what we need in the US today. As early as 1952 we were warned by President Truman's Paley Commission that the day was coming when we would run out of oil and gas.

"In 1973, America faced an Arab oil embargo which should have shocked our people out of their lethargy, and into considering massive oil-from-coal synthesis.

"Sasol has been an eye-opener to us, and an example which the US should follow."

Asked what plans he proposed to put forward to Congress, Mr Wright said:

"There are five issues at stake which the American people must consider. Firstly, that a guaranteed oil price be established and a guaranteed oil quantity set; secondly, the US Government could consider financing a Sasol-type project on a loan basis; thirdly, a direct loan as in the Sasol 2 and 3 plants; fourthly, a joint venture similar to Sasol; and fifthly, the US Government could create a corporation available to the private sector on a lease basis."

Asked if the US Government was encouraging open talks with South African State corporations, and whether this had the endorsement of the Carter Administration, Mr Wright said:

"I cannot speak for the Carter Administration. However, as far as I am concerned, I do not have a moment's hesitation in recommending the buying of Sasol technology.

"I have no objection whatsoever, nor will I dissuade US developers from employing this process and paying the royalties which Sasol wants. However, I am not an engineer, and will leave it to the American people to decide."

He praised the developments at Sasol. "South Africa has provided the leadership and inspiration which we in the US will follow.

"The US in this decade can either decline and suffer further humiliation, or it can rise to become again one of the world powers. One thing that is important is that we reassert our total energy independence."

Asked if he would consider holding further talks with Sasol officials, he said: "Certainly we will welcome further talks, as well as the exchange of SA technological experts."

Regarding possible problems in promoting Sasol technology, Mr Wright said: "The great debate and argument in the US centres on environmental and ecological pollution. That is the big thing. But I have no hesitation in recommending to Congress what Sasol is doing and all we have learnt.

"South Africa is leader of the world in its synthetic fuel research. SA was determined not to perish when the oil crisis was flung upon the world and took the initiative. SA knew the day was coming when the world would run out of oil."

Mr Wright said that if the US employed a technology similar to Sasol, the country would be able to produce not less than two million barrels of oil a day by 1990.

Questioned about cries in the US for American disinvestment in South Africa and the ending of trade relations because of racial laws, Mr Wright said: "I have heard a lot of talk about this. People are always talking about disinvestment. But I believe it would be good for the US to continue trade with South Africa."

The managing director of Sasol, Mr J Stegmann, said of Mr Wright's views: "I don't see this visit as primarily one in which we have tried to sell Sasol technology as such. Rather, the visit can be seen as a real-life investigation into the syn-fuel project. They have many problems which we do not have, and the visit should be seen as helping to deal with the whole energy crisis."

- The 12-man US delegation visited Rhodesia yesterday and met the Governor, Lord Soames.

GILL RAINE

15. COST EFFECTIVENESS OF DAY HOSPITALS IN CAPE TOWN

* * * * * *

Acknowledgements

I should like to express my thanks to all those in both t
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Gill Westcott and Jonathan Brodie for constant support and encouragement and for criticisms on earlier drafts and, finally -
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I alone remain responsible for errors and value judgements that exist.

INTRODUCTION

This paper has two main aims - firstly to consider the contribution that economic analysis can make towards improved resource allocation in the health sector, a sector in which market forces to promote efficiency are lacking; and secondly to analyse the decentralised system of primary contact medical care that exists in the Cape Peninsula.

(1.1) Economic analysis for health service efficiency

Cost benefit analysis was first applied to studies of water resource and transport projects. A more recent development has been its application to education and health. There has been extensive debate on the theoretical foundations of the approach and on the problems involved in applying the theory in practice. The main aim of health programmes and projects is to improve the level of health in individuals and defined communities. As yet, there is no objective way of measuring health, resulting in controversy as to whether these analytical techniques can be usefully applied in the health sector.

In the Cape Province, in 1951, 18,83% of the total Provincial Appropriation was spent on hospital services and public health; in 1977, 32,51%.[1] Of an amount of R240 million to be spent on health services in the Cape Province in the 1978/79 financial year, 57,5% is to be spent in the Cape Peninsula and of this 70,28% will be spent on running Groote Schuur and Tygerberg Hospitals.

These figures indicate the need for choice and the consideration of priorities in the public health sector. Economics provides a logical framework for collecting information, and for assessing assumptions and the conse-
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given technical and budgetary constraints."

SWA plan to buy surplus SA power

WINDHOEK. — South West Africa plans to buy surplus power from South Africa and hopes that the Republic will soon approve the building of a R60-million power line to Windhoek, according to official sources in Windhoek.

The Ruacana hydro-electric scheme on the territory's northern border is only being used in part at present, as the Angolan Government has refused to close the sluice gates to the storage dam above Ruacana.

Because of this, SWA is almost entirely dependent on its thermal power stations, especially Windhoek's Van Eck Station and the power station at Walvis Bay.

The head of the South West African Water and Electricity Supply Commission, Mr Polla Brand, is quoted in a report as saying that South Africa had sufficient surplus power to sell to SWA.

Mr Brand said that even if the Ruacana scheme could someday be put to full use, a power line between South Africa's borders and Windhoek would still be a good investment.

"Even if the Angolans decide now to close the sluice gates on their side, who is to say they will continue to keep them closed next year or the following year?"

According to the Windhoek sources, serious power problems are already being experienced in the southern parts of the territory. — Sapa.

is consistently worse than that of the whites. The 'coloureds' have higher mortality rates for all the major causes of death apart from cardiovascular diseases and neoplastic diseases in men over 65 years of age, neoplastic diseases in women in this group, and cardiovascular disease in men 45-64 years of age during 1960 and 1970. Clearly the rate of 5/1 000 which has been chosen is entirely arbitrary but a similar pattern of mortality emerges if lower or higher levels are selected.

Two aspects of these age-cause specific mortality rates require emphasis. Firstly, whilst being affected by the incidence of the diseases in question, these rates are also influenced by their fatality rates, for example, a decrease in the mortality related to Tuberculosis will not only be influenced

Dismay over Koeberg's nuclear waste

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18.1.80

Own Correspondent

CAPE TOWN. — A shock revelation in the Koeberg Report that dangerous radioactive wastes will be retained in South Africa has brought strong reactions from environmentalists, a call to mothball Koeberg and a disclaimer from Escom that there was any intention to mislead the public.

Dr Jan Giliomee, secretary of the Society for the Conservation of the Environment, said disposal of the wastes was "one of the biggest problems in the production of electricity from nuclear power".

"I have a brochure in which Escom informed us that the wastes from Koeberg would be stored overseas and I am very disturbed that this is no longer the case," he said.

This posed a number of questions, said Dr Giliomee. These were:

- When was Escom told that they would have to store the wastes from Koeberg locally?
- Did they know this from the start or was there a change in the attitude of the French processors since the brochure was published?
- What certainty is there that a suitable site is available in South Africa?

"Such a major aspect of nuclear power generation should have been fully investigated and settled before a final discussion on the building of the plant was taken.

"I feel more strongly than ever that Koeberg should not be put into operation until the problems of nuclear waste disposal have been solved or until its use becomes imperative," Dr Giliomee said.

Mr Peter Spencer, project leader at Koeberg, said he had "no knowledge of any brochure" which stated that wastes would not be stored in South Africa and could not comment on that point.

He said the problem of nuclear-waste disposal was "locked up with international politics and the attitude of America".

"Escom cannot act unilaterally in this matter and must accommodate attitudes in France and the United States. And in any case I don't think it very responsible that we should expect anyone else to be our nuclear dustbin."

He disagreed that the problem of final disposal of nuclear waste had not been solved.

"It depends on what time scale you are speaking. I think the technical solutions are available and the present processes are adequate."

Asked if this meant safe he added: "Yes, they are safe."

Dr Arnold Abramowitz, a senior lecturer in the department of psychology at the University of Cape Town and a firm anti-Koeberg campaigner, said in a Press interview that the social and political implications of waste disposal were "enormous".

"The history of the disposal of high-level wastes in other countries has been marked by tremendous opposition on the part of people who live near the disposal areas. Even people who are pro-nuclear say 'not in my backyard'.

"The problem is that every place is somebody's backyard and this has not been faced up to. Disposal problems have only been solved on paper and in every country with nuclear plants there are enormous waste dumps sited temporarily while awaiting a decision for final disposal."

Addressing the Cape Town City Council's special meeting to discuss Escom's report, a councillor Mr Tom Walters said it was a great regret to him that there was nuclear power in South Africa, "but we've got it and we must cooperate to ensure the maximum safety".

The city council should accept the nuclear power station at Koeberg and co-operate with Escom and the Atomic Energy Board, he said.

Mr Walters said that when councillors visited Koeberg they were told that the wastes would be sent to France and retained there. This "lulled us into a false sense of security".

Mr Frank van der Velde said atomic energy was one of the cleanest sources of power and in the Western Cape the cost of producing electricty at Koeberg would be slightly cheaper than using coal. The important thing was that there should be a watchdog with the authority to switch off the plant at any time.

He said he understood that the Atomic Energy Board was the authority and he wanted to know whether it had the power to switch off a plant.

He said that South Africa could not rely on an agreement with France and reminded councillors of the way that France had cancelled an order for submarines.

Both white and 'coloured' females have shown an increasing life expectancy at the age of 45, and although this has been small, it contrasts with the downward trend of both white and 'coloured' males.

Although it is apparent that the Expectation of Life at birth for the 'coloureds' has shown a marked improvement between 1941 and 1970, it is salutary to note that neither 'coloured' males nor females, at either e_o or e_{45}, have reached expectations of Life in 1970 which are as high as the whites were in 1929. What also gives some cause for concern is that although the expectation of Life cannot be expected to improve indefinitely, it would appear that the 'coloured' life expectancy is levelling off at a much lower age than has occurred in the white community.

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risk cases being delivered in hospital and low risk cases in the clinics. Certain other expected benefits are not yet apparent, e.g. we had expected development of peripheral clinic services to have resulted in earlier and more regular antenatal clinic attendance, but so far any change has been marginal. One factor is that transport arrangements in some areas are such that it is easier and cheaper to attend the base hospital than the local clinic. We had also expected to find reduced waiting time for the patient in a clinic as compared with the hospital but this benefit was not apparent in the two large clinics studied.

The economic benefits of a community obstetric service proved difficult to assess. The mean cost to the patients of a peripheral clinic visit worked out at R1,15 whilst a hospital visit cost on ...

Nuclear waste to be returned to SA

CAPE TIMES 17/1/80 **By TONY ROBINSON** (55)

ALL NUCLEAR WASTES produced by the twin reactors at the Koeberg power station will be stored in South Africa, according to a special Escom report on the possible dangers which was prepared for the City Council.

The report is to be debated at a special meeting of the executive committee at 2.15 pm today in the council chamber. All councillors and the press have been invited to attend.

A shock revelation in the report is that wastes from the highly radio-active spent fuel elements — which are to be sent overseas for reprocessing — will be re-imported for storage in South Africa.

In the past great stress has been placed on the spent fuel elements being exported but the return of the wastes to the Republic has not been reported.

Wastes from reprocessed fuel elements are the hottest of nuclear wastes and the problem posed by their safe disposal has been dubbed "the hot potato syndrome".

There are also indications in the report and elsewhere that Escom has considered installing more than two reactors at Koeberg.

In the report Escom states that the site is "large enough to accommodate up to six reactors, should this ever be required".

In March 1977 the then Minister of Economic Affairs, Mr Chris Heunis, told Parliament that at that stage "only a third reactor which can be erected at the existing Koeberg site is anticipated."

According to the Escom report the two Koeberg reactors already purchased are to come into operation in 1982 and "not later than 1984".

The report says the power station will produce about 11 tons of waste a year and when this has been encapsulated it will have a mass of 350 tons. All of this will be disposed of in South Africa.

Gaseous wastes are to be stored in the plant and then released into the air, "mostly when the wind is blowing out to sea".

Liquid wastes from the reactor coolant are to be treated and the solid radio-active wastes extracted. Other liquid waste with a low level of radio-activity would be stored inside the plant and then diluted to harmless levels and discharged into the sea.

The small volume of solid wastes which are highly radio-active will be encapsulated and stored for some years to permit radio-active decay before being disposed of at a suitable site according to internationally-accepted practices.

When the spent fuel elements which contain highly radio-active wastes are removed from the reactors after three or four years "they are stored on site in storage pools under seven metres of water until such time as they are sent away for reprocessing.

"After reprocessing, the solid wastes extracted from the spent fuel are returned, in vitrified form to South Africa for disposal," the Escom report says.

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	115,71	50,31

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Koeberg waste: Sharp reaction by environmentalists

By BOB MOLLOY

A SHOCK DISCLOSURE in the Koeberg Report that dangerous radioactive wastes will be retained in South Africa has brought strong reactions from environmentalists, a call to mothball Koeberg and a disclaimer from Escom that there was any intention to mislead the public.

Dr Jan Giliomee, secretary for the Society for the Conservation of the Environment, said yesterday that disposal of the wastes was "one of the biggest problems in the production of electricity from nuclear power.

"I have a brochure in which Escom informed us that the wastes from Koeberg would be stored overseas, and I am very disturbed that this is no longer the case."

This posed a number of questions, said Dr Giliomee:

● **When was Escom told that they would have to store the wastes from Koeberg locally?**

● **Did they know this from the start or was there a change in the attitude of the French processors since the brochure was published?**

● **What certainty was there that a suitable site was available in South Africa?**

"Such a major aspect of nuclear power generation should have been fully investigated and settled before a final discussion on the building of the plant was taken. The storage of wastes requires increased transportation of these hazardous substances, initially from Koeberg to France, back again to South Africa, and then to the unfortunate part of the country chosen for eternal monitoring of the leakage.

"I feel more strongly than ever that Koeberg should *not* be put into operation until the problems of nuclear waste disposal have been solved or until its use becomes imperative," Dr Giliomee said.

Dr Arnold Abramowitz, a senior lecturer in the Department of Psychology at the University of Cape Town and a firm anti-Koeberg campaigner, told the Cape Times that the social and political implications of waste disposal were "enormous."

"The history of the disposal of high-level wastes in other countries has been marked by tremendous opposition on the part of people who live near the disposal areas. The issue has aroused great emotion. Even people who are pro-nuclear say 'not in my backyard'.

"The problem is that every place is somebody's backyard and this has not been faced up to. Disposal problems have only been solved on paper, and in every country with nuclear plants there are enormous waste-dumps sited temporarily while awaiting a decision for final disposal.

"I had hoped that South Africa would remain a nuclear waste-free area."

Politics

Mr Peter Spencer, project leader for Koeberg, said the problem of nuclear-waste disposal was "locked up with international politics and the attitude of America.

"Escom cannot act unilaterally in this matter and must accommodate attitudes in France and the United States. In any case, I don't think it very responsible that we should expect anyone else to be our nuclear dustbin."

He disagreed with the view that the problem of final disposal of nuclear waste had not been solved.

"It depends on what timescale you are speaking. I think the technical solutions are available and the present processes are adequate."

Asked if this meant "safe", he replied: "Yes, they are safe."

He had "no knowledge of any brochure" which stated that wastes would not be stored in South Africa.

Some wastes active for millions of years

THREE TYPES of radioactive waste will be produced by the Koeberg nuclear power station, according to the Escom Report to the City Council.

These will be separated into gases, liquids and solids.

● **Gaseous wastes** will be filtered, stored in the plant till radioactivity dropped and then "released in permissible quantities to the atmosphere, mostly when the wind is blowing out to sea".

● **Liquid wastes**, according to the point of origin in the plant, will first be treated to remove solids and then stored in the plant till radioactivity dropped. They will then be "diluted to harmless levels and discharged into the sea".

● **Solid wastes** will be the only radioactive wastes retained. These in turn are rated as high-level, intermediate and low-level wastes. The high-level will be highly radioactive but small in amount, intermediate will be of lower radioactivity and small volume, while low-level wastes will have low radioactivity but will be large in volume.

All forms of wastes will be disposed of in South Africa.

According to literature on radioactive substances, the atomic garbage created by nuclear reactors contains many high-level wastes. Some of these have an active life only seconds long, while others remain dangerously radioactive for millions of years.

About 1 000 years

Among the poisons created are some which are particularly lethal to humans: Strontium-90, caesium-137 and plutonium-239. All are long-lived. There are others of shorter duration, such as iodine-131 — with a half-life of eight days, which can also be a threat to life.

Strontium-90 and caesium-137 give off intensely-penetrating radiation and great amounts of heat, requiring isolation and safekeeping for about 1 000 years.

The first is a bone-seeking isotope which accumulates in the body and cannot be excreted. As an example of the problems faced by Escom, about five litres of high-level liquid waste may carry up to 100 curies of strontium-90. To dilute this to legal guidelines requires some 1 500 *billion* litres of water.

Caesium, like strontium, is a powerful cancer-causing agent which gives off gamma rays. If absorbed by the body it concentrates in the muscle tissue and the ova of females.

Iodine-131, if vented into the air, contaminates vegetation and passes quickly into milk from where it may lodge in the human thyroid gland. It may be combated in the early stages with heavy doses of iodine tablets.

Low-level wastes are not as innocuous as they sound. They may contain plutonium, a synthetic element which never existed till created by scientists working on the first atomic bomb. It is the most lethal cancer-causing agent known and gives off dangerous radiations for up to half a million years.

So persistent is this substance that the same particles can kill generation after generation as they recycle themselves through the ecology. For example, cremation of a person who died of plutonium poisoning would simply disperse the plutonium into the atmosphere. Burial could release the same poisons into the groundwater.

Alpha, beta, gamma rays

American experts have admitted that no material known to man can retain long-lived radioactive substances safely throughout the period of dangerous radiation. Methods of disposal adopted so far included dumping containers in the sea, burying them in deep mines and creating special storage facilities which require reconstruction periodically.

A recent source estimates that the United States and other Western nuclear powers have dumped a total of 337 000 curies into the world's oceans. There is no record of Russian dumping.

● Radioactivity is caused when certain elements disintegrate atomically. When they do, they give off dangerous rays or forms of energy. These are of three main types: alpha, beta and gamma particles.

The rays differ in their penetration power. Alpha particles can be stopped by a sheet of tissue paper; beta particles can penetrate thicker objects; gamma rays — similar to x-rays — can penetrate substantial barriers.

Radiation of human tissues is invisible, tasteless and painless, unless of abnormally high dosage. Depending on the degree of radiation, tissue damage may not appear for decades or may occur only as genetic defects in succeeding generations.

Radioactivity is measured in curies, rems or rads. One curie of radiation is the emission of 37 000 million atomic disintegrations a second, based on the rate of decay noted in radium by the famous physicist Madame Curie.

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'attendance' causes some difficulty as there appears to be little uniformity either between hospitals or between hospital departments as to what constitutes an attendance. The official viewpoint is that these figures are kept to assess the workload of each section of the outpatient department and the whole department and that it is not a true reflection of the productivity of the staff if a patient who receives a dressing change and an injection has the same weight in the statistics as a patient who sees a doctor, is referred

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for the whole Tygerberg complex, the new Johannesburg Hospital, new Day Hospitals - the cost of building the outpatient department at Tygerberg for example is not known, nor is the estimated cost of building outpatient departments and Day Hospitals of different sizes. The costs that were incurred in refurbishing the Day Hospitals in 1969 are not known, nor is the cost of equipping a Day Hospital relative to an out-patient department; intuitively it is less because less

cannot be pinpointed.

Koeberg waste to be under control

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24/1/80
Argus

NO final decision on the storage of nuclear waste from the Koeberg plant has yet been taken, according to the Atomic Energy Board.

A spokesman for the board was reacting to an emphatic statement in a report by Escom to Cape Town City Council in which it was said that all forms of nuclear waste were to be disposed of in South Africa.

Statements that reprocessing would take place overseas still held true, but whether or not the waste would be returned to South Africa for storage would depend on details of the reprocessing contract, the spokesman said.

The statement in the report disturbed environmentalists and caused a flurry among critics of the project. They said the possibility of nuclear waste being stored in people in whose environment it was to be stored.

Another facet which would have to be watched closely was the possibility of leakage into subterranean water.

However, a spokesman for the Atomic Energy Board said that no final decision regarding storage of waste arising from spent fuel reprocessing had been taken.

Previous statements that the spent fuel would probably be reprocessed still held true.

However, such reprocessing would take place overseas and whether or not the waste would be returned to South Africa for storage would depend on the details fo the reprocessing contract.

Remote

In any event, the possibility of such wastes from reprocessed fuel being stored in South Africa before the turn of the century appeared remote.

However, the possibility ... South Africa ... South Africa 'opened up a whole new ball game.'

Waste from Koeberg, which is due to become operational in 1982, is estimated at 11 tons a year from 1987.

In the report it is indicated that waste would be stored under controlled conditions in South Africa.

Professor J H Gilliomee, of the University of Stellenbosch, said most environmentalists were under the impression that waste was to be transported through Cape Town and shipped to France for reprocessing and storage.

Capsules

The statement by Escom in its report had put a new complexion on the matter.

Professor Gilliomee said that if South Africa was forced to store the nuclear waste remaining after her spent fuel had been reprocessed, most probably by France, an wide-ranging field would have to be investigated.

Consideration would have to be given to encapsulation, transport storage and the attitude of the

But it would probably be well into the first decade of the next century before nuclear waste arising from spent fuel was stored in South Africa.

Decaying

Spent fuel removed would first be kept on site wouldfirst be kept on site for several years to allow some of the radioactivity to decay before being shipped for reprocessing.

The waste remaining after reprocessing would stand for some years before being returned.

Twenty years or more could elapse between now and the first waste from spent nuclear fuel being returned to South Africa

Gaseous waste would first be filtered, and then stored inside the plant before being released in 'permissible quantities', mostly when the wind was affshore.

Liquid waste would be diluted to harmless levels and discharged into the sea.

Solid wastes would be the only radioactive wastes from Koeberg to be retained. Some of these wastes would be highly radioactive, but small in volume.

The Star

The Star Wednesday January 23 1980 55
CLASSIFIED ADVERTISEMENTS INSIDE

SA may be able to stave off price hike

South Africa, from a position of vulnerability on the world oil markets, is now one of the few countries that may be able to hold off a petrol price increase for some time ahead.

Oil experts have said developments over the past year have created a "new dimension" to South Africa's place in the international fuel crisis. There was now a fair chance the country would be able to sidestep the fuel price hikes now coming into force around the world after the OPEC meeting in Caracas in December.

But this analysis is tempered by the increasingly frequent comment that Middle East politics — and not economics — may play a far more decisive role in crude oil prices in 1980.

Experts believe that, whereas in the past it has been the greed of the oil sheiks that has dictated prices, the repercussions of the continuingly unstable Iranian situation, the Russian invasion of Afghanistan and the developing threat to the ruling monarchy in Saudi Arabia, may now prove crucial.

The effect on South Africa is incalculable. But, if oil supplies shrink and prices on the spot market start rising, the country will again be plunged into an acute petrol crisis.

The picture for the near future is far more

pricing cohesion within OPEC itself which has meant that spot market prices have tended to remain static. (They are currently between 38 American dollars a barrel and 42 American dollars.)

The sources of South Africa's oil supplies are a state secret but various Government ministers have confirmerd that we are partially dependent on the spot market in Brussels.

Some experts believe spot market price...

This has enabled major consumers, such as the United States, to reduce its oil imports by four percent. And, observers point out, the Northern Hemisphere is now coming to the end of its winter and thus demand must further slacken.

Although the volatile Middle East political crisis may yet send oil prices rocketing through the ceiling, it has, paradoxically, helped South Africa in meeting its crude oil bill.

The uncertainty has boosted the price of gold and the Minister of Finance, Senator Horwood, confirmed one of his objectives (with higher gold revenues) was to keep fuel prices at a reasonable level. Last year Senator Horwood revealed the Government had been able to meet its oil bill without resorting to gold income.

While the chances of a more stable retail petrol price are now far better than they were a year ago, it is unlikely the authorities will make any change to the national speed limits or the petrol trading hours.

Minister of Industrial Affairs and of Trade and Consumer Affairs, Dr Schalk van der Merwe, met representatives of the petrol resellers in September and the point was made that changes to the selling hours had a disruptive effect on the industry.

Sasol

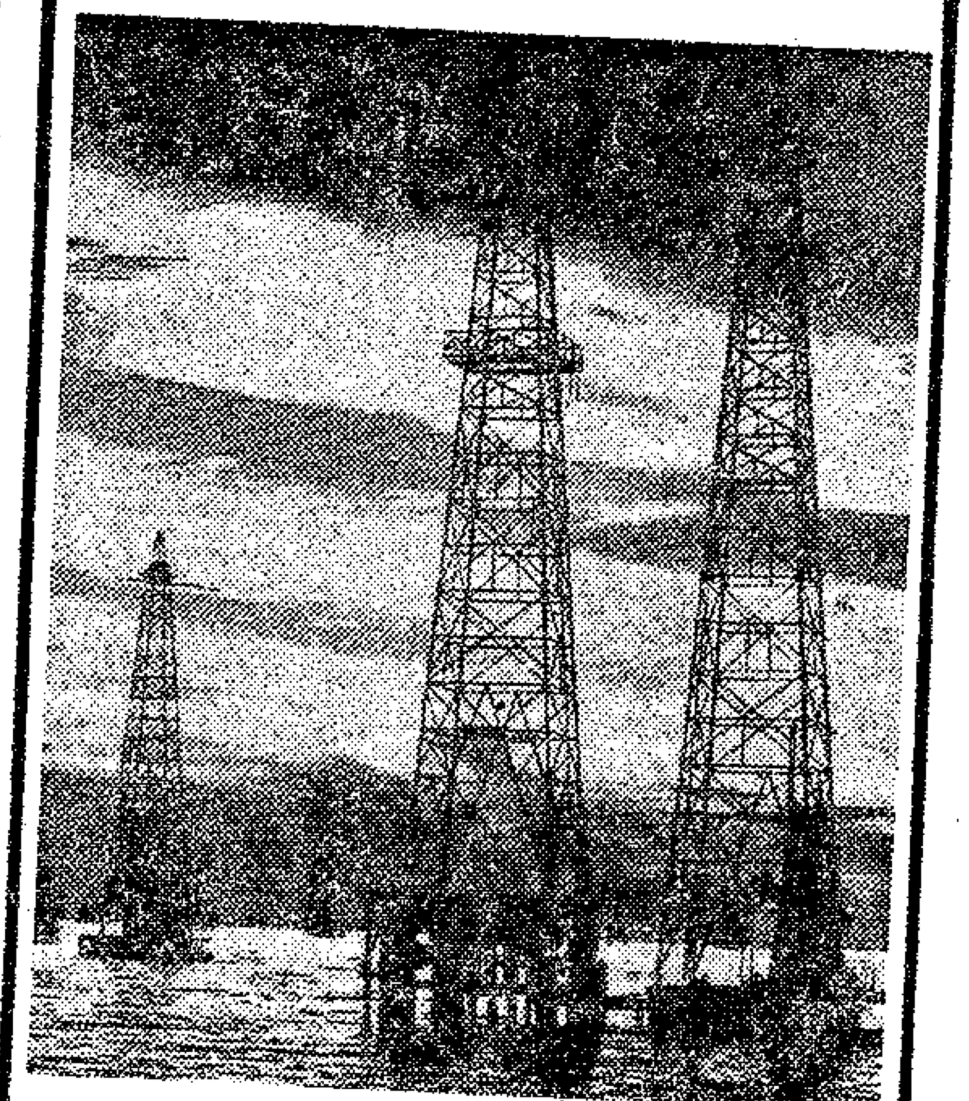
Changes often creat a switch in buying pat-

Sasol (now providing about 10 percent of the nation's petrol) and Sasol 2 are long-term safeguards.

The booming gold price has created a uniquely South African "insurance policy." But

severely shaken by the attack on the Holy Mosque in Mecca, where Iran-type Muslim nationalism is simmering and where the princes are this week nervously contemplating the spectre of Russian

Focus on the oil crisis



By
Harvey Thomas

The Brussels oil spot market, an institution that today commands intense international scrutiny, emerged with all the subtlety of a Damascus bazaar after the OPEC nations first exploded their price bombs in 1973.

For as long as most people could remember the world had accepted as its right a bountiful supply of cheap crude oil to lubricate the wheels of industry, to fuel the ever expanding jams of bigger cars with bigger engines that no-one really needed but everyone wanted.

New era

And then, in 1973, came the price bombshell that was to abruptly halt a way of life people unthinkingly claimed as their heritage. This was to usher in a new era — the era of the enduring fuel crisis.

It was a crisis that brought swift and severe change. And it was a crisis that gave birth to the spot market.

Before 1973 oil was traded at two American dollars a barrel. And its supply was not linked with political favour.

But 1973 changed all that.

Nations scrambled to buy oil from a cartel cynically aware production controlled at a lower than world demand would lead to even richer coffers. And in the bedlam created by the switch from a buyers' to a sellers' market a new breed of businessman emerged — the oil speculator.

Contacts

These men could be, and often are, members of highly organised international syndicates working through brokerage firms and with an intelligence-gathering network of which the KGB, would be proud.

They could well be, as South African oil experts indicate, "fly-by-night" operators in for a quick buck. Or lone wolves with money to back their gambles.

Whoever they are, they have one thing in common: the contacts and backing to buy options on tankerloads of crude at prices that afford them a fat profit.

In less than a decade some men, some consortiums of men, have made not just millions: they have made hundreds of millions in the continuing panic caused by nations wanting to buy oil, at almost any price, to meet their needs.

Brussels is where this oil is traded. It's done on an agent-to-agent basis and South Africa was forced to join the haggling when our traditional supplier, the Shah of Iran, lost his throne.

In the early days it was these oil entrepreneurs who commanded the spot market. But a phenomenon now emerging is the desire of certain OPEC members to siphon off "officially" priced crude and route it through Brussels.

Narrowing

BRIEFING

Exploiting the spot market

The first is that since 1973 OPEC members have increasingly viewed oil as a political weapon. South Africa is not the only country in the world without access to "official" supplies.

The sheikhs, awash in their dollars, are discovering that the very international uncertainty they helped to create has eroded the buying power of the currency used to pay them. There have been calls for the German mark or the Swiss franc to replace the dollar; but there are simply not enough marks or francs to go around.

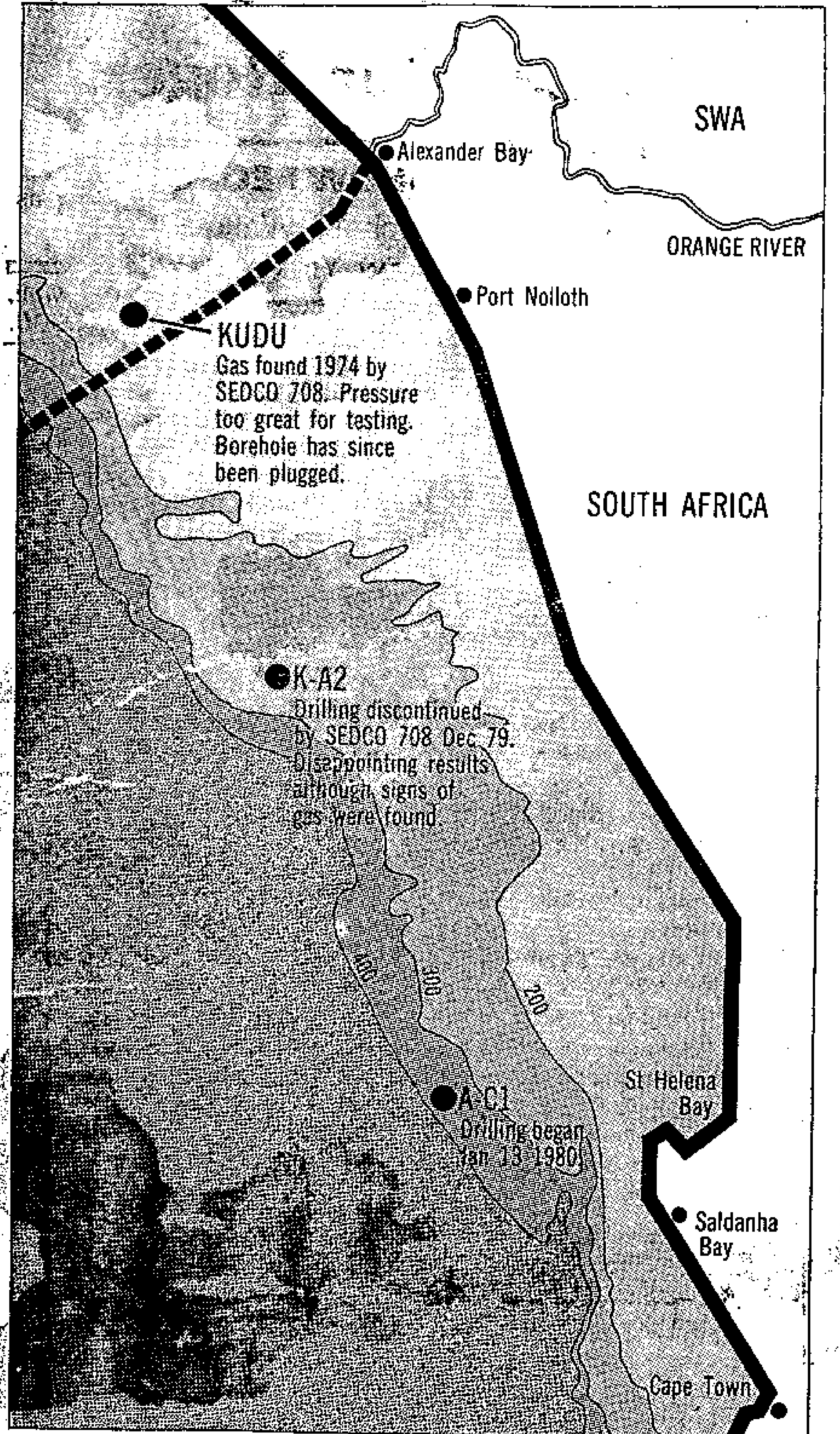
And so more of the OPEC nations are adopting the attitude that oil underground is a better long-term investment than banks bulging with devaluing dollars

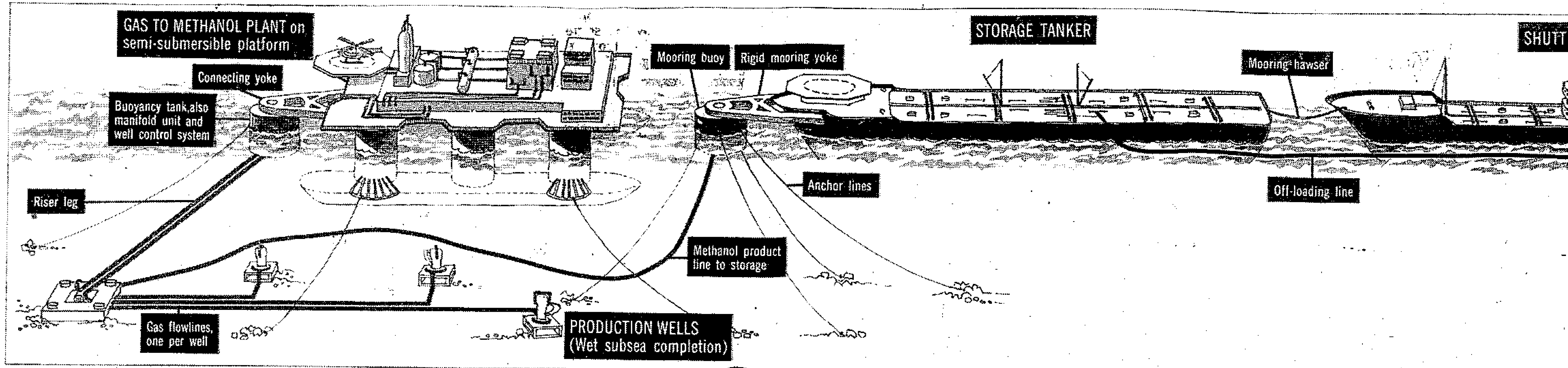
They will, or so some of them have said, just enough to meet their yearly commitments

In the Eighties Russia is expected to change self-sufficiency in oil production to a r importer. This fact casts an even more om interpretation on the recent Russian adventu Afghanistan.

As part or all of this takes shape and form Brussels market will be crucial as more na come to terms with the fact that they should their oil needs to what they can buy rather tha Arabs regulating production to match demand.

A proposal to exploit South Africa's gas reserves off Plettenberg Bay has been put forward based on a study compiled by Soekor personnel. **JEREMY BROOKS** reports on the first details to be published.





Gas from under the waves

POM 24.1.80 55

A MASSIVE gas-to-methanol conversion plant on a floating semi-submersible platform, moored far out at sea, attended by a shuttle tanker, and anchored 130 m above the Agulhas Bank on South Africa's east coast — fact or fiction?

It could be done, says Soekor, and the oil exploration company has produced a study to prove it. But faced with an insignificant market for methanol in South Africa, and the relatively small quantities of gas which the only known field in South Africa's territorial waters would produce, the report has been temporarily shelved — although it could be revamped at a later date.

If it was the massive project, which would require a capital outlay of roughly R190-million, it would be unique.

Coupled with Sasol, it would push South Africa into the forefront of alternative fuel production and fuel conservation in the world.

The study calls for a chemical processing plant sited on a floating structure anchored to the sea floor above the gas field. The platform would stand above large submerged pontoons, and would be held on location by a pattern of anchors radiating out from the pontoons.

The scheme entails the production of 906 000 cubic metres from a minimum of four gas wells, with a plant producing 1 000 metric tons per day for 15 years. The gas would be converted into methanol at the plant, and the finished product would then be transferred to a storage facility, probably a converted tanker, moored alongside.

Tanker storage of about 15 000 tons is envisaged to allow for periods of absence of the shuttle tanker and for bad weather conditions during which transfer to the shuttle tanker would be impossible.

Methanol is a colourless, odourless liquid with a flashpoint almost the same as petrol. It can be blended directly with petrol in a 15% mixture and used in virtually unmodified petrol engines.

It can also be used with diesel in a dual fuel system, or on its own (instead of diesel) in specially designed engines. Other industrial uses of methanol are in the manufacture of resins and plywood.

At present about 25 000 tons of methanol are produced in South Africa every year. A conversion plant anchored above the Superior Field would produce about 1 000 tons a day for about 15 years — an amount which is still considered too small to warrant such a massive undertaking.

Further problems arise with the production of methanol, especially if it is used as blending fuel with petrol which would aggravate the present critical problem of the demand ratio for petrol to that of diesel.

It would be ideal if all the methanol produced could be used to reduce the demand for diesel, but in practice this would be difficult. Methanol does not blend with diesel, as it does with petrol.

However researchers are investigating the possibility of fueling a diesel engine from two different supplies and fuel injectors — a system which in conventional diesel motor transport would obviously not be ideal.

Each vehicle would need two fuel tanks, and the marketing and distribution of pure methanol using seperate pumps at filling stations would [cut off] logistical problems.

The possibility of usi[ng] dual methanol/diesel [...] only for heavy road trans[port] being considered. A l[...] number of methanol dep[ots] the major cities of Sout[h Afri]ca, and along the main

Soekor on track of world fuel 'first'

By JEREMY BROOKS

SOEKOR is studying an ambitious plan to use floating "conversion plants" to make methanol from gas deposits off South Africa's shores.

The plan has been dormant for more than a year, but the Rand Daily Mail today gives details never published before.

The scheme would be dependent on Soekor finding more gas in its continuing search off the coast — and the way would then be clear for the first project of its kind in the world.

[illegible] director of Soekor — the national oil [illegible] plan: "At present [illegible] market for methanol, but with the [illegible] oil-producing countries, especially Iran, this may change.

[illegible] pursuing the project at present, [illegible] a careful watch on developments which could make it well worth following up in the future."

The plan calls for a floating "factory" [illegible] pen- [illegible] convert [illegible] nol.

[illegible]

Witwatersrand, the [illegible] industrial gas [illegible].

The best possible way of utilising the gas, therefore, would be to convert it to another product — methanol — which is more marketable and easier to transport.

The conversion would be done on a floating platform which could be towed to another site when the gas field was exhausted.

Soekor has lately been searching for signs of gas or oil on the west coast, and is at present operating off St Helena Bay.

○ See Page 7

ENERGY POLICY 55 FM 25/1/80

US sees the light

America's prestige National Academy of Sciences has signalled the end of the petroleum age in a report on energy policy options submitted to the US Department of Engergy.

Coal and nuclear energy (including the fast breeder) will be the only economic energy alternatives during the rest of this century, says the report, which took four years to prepare.

The academy says the US should develop a major synthetic fuels industry, a finding doubly significant in the light of the recent announcement by House of Representatives majority leader James Wright after his visit to SA. He could see no objection to America buying Sasol technology for synthetic fuels.

In the light of "severely strained" world petroleum supplies during the Eighties, America should also, says the report, expand exploration for new sources of domestic oil and gas, and increase energy conservation programmes.

At relatively high growth rates in the demand for electricity, the academy regards the fast breeder or other fuel-efficient reactor as the most attractive energy source.

Initial descriptions of the academy's report do not indicate its conclusions about domestic energy pricing. But there can be no doubt that the continued pricing of domestic US oil and gas well below world levels (a form of subsidy to the consumer) has been in recent years the biggest single obstacle to the development of a rational energy policy. Without remedying this deficiency, no policy changes can really succeed in weaning the American giant from its oil dependency.

Keynes isn't the

by Tilford Gaines, senior vice-president and chief economist of Manufacturers Hanover Trust, New York, in its *Economic Report* of December last year.

The intellectual justification for our recent inflationary bias in public policies is often, in the popular discourse, related to something called "Keynesian Theory." This is a canard that needs rebutting. A careful reading of John Maynard Keynes' voluminous work will find no justification for the recent inflationary policies in this country and abroad. Although his best-known work, the so-called "General Theory," does not emphasise the role of fiscal policy in combating unemployment, it must be remembered that this essay was written in the depths of the Great

Star 28/1/80

(55)

Oil prices plunge on 'spot' market

ROTTERDAM — Oil prices have fallen sharply in the free "spot" market to average 34 to 35 dollars (R29 to R34) for a barrel of standard Opec crude compared with up to 39 dollars (R33) at the beginning of the year, market sources said.

Many traders saw the decline as a reaction to panic buying during the last three months of 1979 when some oils in Rotterdam, housing the world's biggest oil processing and storage complex, were fetching up to 50 dollars (R42,50) a barrel.

Market sources said there was little demand in spite of the fall in prices which were two to three dollars down on those of a week ago.

NO SPACE

The rush to buy oil late last year left little storage space and the sources said many oil tankers were cruising in the Mediterranean and off northern Europe unable to discharge their cargoes.

Prices were, however, still above some contract levels especially for the standard Opec oil, Saudi Arabia's "Arabian Light" which is sold to contract customers at the official price of 24 dollars (R20,40) a barrel.

But oils from other countries, which have set prices much higher than Saudi Arabia's had virtually eliminated the gap between their official and spot prices, the sources said.

One example was Libyan crude, quoted in Rotterdam at 35 dollars (R30) a barrel while available on contract at 34 dollars (R29) — a price which does not include transport costs, they added.

The spot market has often been blamed for last year's surge in oil prices, with oil exporters saying unprecedented demand on the spot market after the Iranian revolution had forced the pace of price increases.

Crude oil prices virtually doubled in 1979.

Opec failed at a conference last month to agree on a single official price for crude oil and Saudi Arabian oil minister, Sheikh Ahmed Zaki Yamani, forecast a decline in demand which would hit the spot market and depress prices.

● Texaco Incorporated, the world's third biggest oil company, reported 1979 profits of 1 760m dollars (R1 496m) more than double its earnings in 1978.

Gulf Oil Corporation also joined the growing list of big oil companies announcing sharply improved profits for 1979, reporting last year's profits up 68 percent at 1 320m dollars (R1 122m). — Sapa-Reuter.

(EXTERNAL CAUSE)

	W M	W F	A M	A F	C M	C F	B M	B F
0-1	0,85	0,69	0,70	0,31	1,18	1,24	0,32	0,19
1-4	0,49	0,21	0,31	0,27	0,63	0,61	0,21	0,20
5-24	0,71	0,22	0,68	0,20	1,40	0,38	0,68	0,12
25-44	1,18	0,30	1,43	0,37	3,32	0,70	1,22	0,26
45-64	1,25	0,42	1,55	0,40	2,89	0,76	1,10	0,31
65+	1,26	0,71	1,34	0,91	2,19	0,90	1,02	0,53
ALL	0,95	0,33	0,95	0,29	1,91	0,56	0,89	0,20
NO.	1973	677	333	104	2175	652	1868	324

	W M	W F	A M	A F	C M	C F	B M	B F
0-1	0,51	0,54	2,10	1,24	7,00	6,86	19,69	19,83
1-4	0,04	0,04	0,21	0,35	0,75	0,77	2,58	2,48
[illegible]	[illegible]	[illegible]	0,09	0,06	0,08	0,03	0,21	0,23
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,31	0,72	0,78
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,02	3,80	3,64
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5,71	14,69	14,84
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,65	1,80	1,96
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	43	761	3765	3145

The team should consist of a doctor, an industrial nursing sister, 'ancillary aids' (such as first aid workers) and 'ancillary social services', and it should undertake pre-employment examinations and on-site care.

At present, writes Levy, apart from medical aid schemes (discussed by Cooper, *41) and arrangements in some firms for medical practitioners to treat industrial accidents and/or undertake pre-employment examinations, there are at least three organisations active in industrial health. These are the Cape Western branch of the South African Society of Occupational Health (about 20 doctors), the Occupational Health Discussion Group (45 nursing sisters) and the National Occupational Safety Association. After investigating the activities of the nursing sisters involved in the Group, Levy describes the medical work in three factories in Cape Town, employing about 1 750 people. A nursing sister is in attendance in each factory in the morning and a doctor (Dr Levy himself) attends daily for up to one hour. The average number of consultations per worker in 1977 was 3.5

Through pre-employment examinations, check-ups and continuing care, the t

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the doctor on the assumption, writes Levy, ... have special skills and problems), accident care, safety, social welfare work, house visits, health education and advice to management. The cost of the scheme is about R20 a year for

Cooper focuses on medica

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unskilled and semi-skille

often operate on the prir

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more on preventive medic

programmes - than medical aid schemes.

At the end of 1970, more than 70% of the White population but less than 1,5% of the Black population were covered by medical schemes. Cooper lists four types of medical schemes: those initiated by employers, those run by insurance companies, those initiated and run by trade unions and those established under industrial councils.

Industrial councils are formed by registered trade unions and employer associations in an industry to fix wages and working conditions, under the Industrial Conciliation Act. Africans, because they cannot be members of registered unions, do not participate in the bargaining process, but the industrial council agreement can be, and generally is, extended to cover Africans in the industry. African workers also cannot participate in the management committees which administer the industrial council medical scheme (made up of equal numbers of employer and worker representatives).

Industrial council medical schemes fall under the Industrial Conciliation Act and are exempt from the provisions of the Medical Schemes Act under which most other medical schemes are registered. The medical schemes must

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craft union (building, ... hairdressing and furniture). Cooper describes these schemes in general terms and provides case studies of three - in the motor, iron and steel and ...ineering and building industries - showing contributions, membership ...visions and benefits.

...re are 29 medical benefit schemes, mostly in industries where industrial ...her than craft unions operate. Most White workers (145 865 out of ... 494) covered by industrial council medical schemes are covered by ...ical aid schemes, while most Africans (40 468 out of 41 017) are covered ... medical benefit schemes. Of the Africans, 30 274 are in the clothing ...d knitting industries. Unlike medical aid schemes, many medical benefit ...hemes do not extend benefits to the workers' dependants - of the 12 schemes Cooper examines in detail, only one extends benefits to dependants.

RDM 28.1.80

'Nuclear industry has best safety record'

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CAPE TOWN. — The Atomic Energy Board would not allow Escom to operate Koeberg if it was not satisfied that all the safety requirements had been met.

Mr J W L de Villiers, president of the National Atomic Energy Board, thus assured an audience at the summer school at the University of Cape Town yesterday.

Addressing the second lecture of the school's most controversial course, "Why Koeberg", Mr De Villiers said the board was aware of the fears many people had of anything in connection with nuclear matters and radiation.

"We do not want to leave the impression that we believe nuclear power stations are unconditionally safe, but we do believe that their operation can be made acceptably safe in the sense that it does not add significantly to the common risk to which everybody is subjected to during their everyday lives."

He said society revelled in the fear of the unknown and appealed to people in responsible positions not to scare others by making unsubstantiated or even untrue statements about the dangers of nuclear energy.

"The nuclear industry has the best safety record of any industry. After 1 700 power reactor operating years, there has not been even one accident in which a life has been lost, or any other seriously injured by causes that can be ascribed to radiation."

He said that after the first hysterical reaction by the Press and general public to the Three Mile Island accident, the incident had now been assessed in a calmer atmosphere.

It was realised that even an accident of such magnitude had killed or hurt nobody and had presented no significant hazard to the general public.

Mr De Villiers said it

waste".

"I think by the time we need to dispose of very highly active Koeberg waste we probably will have such disposal means, but even if we don't it does not matter.

"We dont really need these 'ultimate disposal' sites any more than we need to make aeroplanes that will fly forever without inspection and maintenance or sewage works which require no inspection or control," he said.

He said the trilateral agreement South Africa had with the Atomic Energy Agency and France, assured that radioactive wastes would be processed outside the country and plutonium would also be stored outside South Africa.

Mr De Villiers said Koeberg was not too close to Cape Town.

There were other nuclear power stations nearer bigger populations and safety requirements for nuclear plants depended on the closeness of the population. — Sapa.

Government silent on oil 'fraud'

STAR 1/2/80

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CAPE TOWN — the South African Government is remaining silent on allegations that the 214 000-ton tanker Salem secretly discharged a huge cargo of oil in Durban before being apparently scuttled off the west coast of Africa.

The Minister of Industries, Dr Van der Merwe, said yesterday he had taken note of reports from London and allegations being made. He had knowledge of certain facts which may have a bearing on this.

Those who handled South Africa's oil transactions from time to time informed him fully of their dealings.

He was satisfied that they had in the past acted in good faith in all transactions.

SCUTTLED

The insurance organisation Lloyds of London said a Tunisian crew member claimed the vessel was deliberately scuttled after being refilled with sea water to avoid suspicion after the 193 000 tons of oil had been discharged in Durban, and that the crew were given bonus payments in Swiss francs and told not to talk about the matter.

The mystery is now the subject of several international inquiries, including a Scotland Yard Fraud Squad probe.

A Lloyd's spokesman said last night that cargo underwriters' investigations showed "the vessel called and discharged most of her oil cargo in Durban at the end of December."

A spokesman for Shell-BP in Durban today said his company did not know if the Shell-owned supertanker had discharged her crude oil cargo in Durban.

"There is no way we can be aware of every oil cargo that is discharged here," he said.

The suspicion that oil bought by Shell International of London during passage is now in South Africa has made this a highly sensitive issue.

Shell has now served a writ in London on Mr Frederick Soudan, a director of the Oxford Shipping Company, believed to be the owners of the tanker.

The writ, served by Shell on behalf of the underwriters, is for compensation for the loss of the tanker's cargo which was insured for more than R48-million.

Insurance investigators have evidence from interviews with the crew in Dakar, Greece and other places.

They said the Salem had papers showing she was on her way to Italy from Kuwait which has banned oil sales to South Africa.

The Salem was Liberian-registered

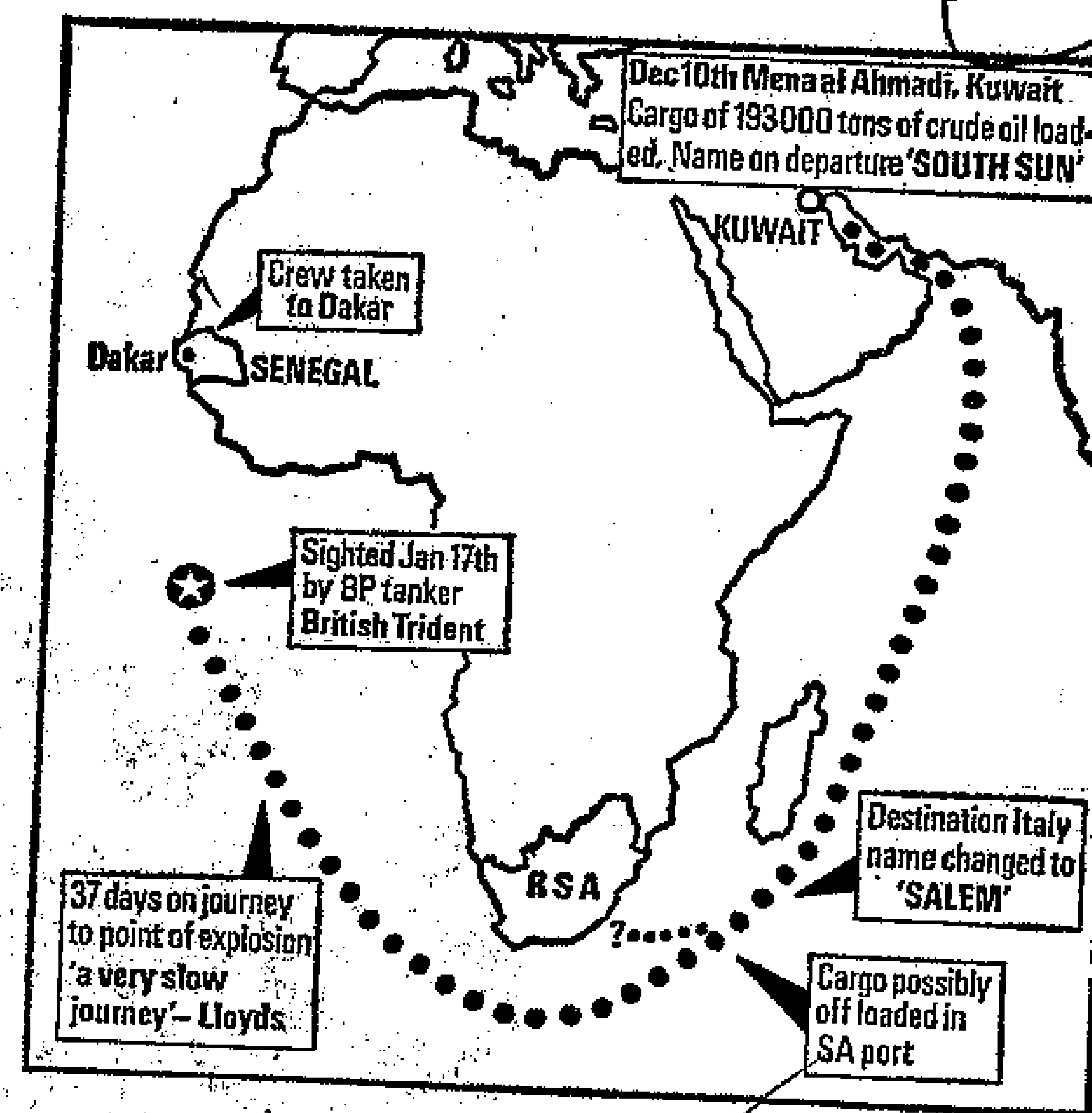
The Salem, originally called the South Sun but renamed during the voyage, left Kuwait on December 10. On January 17 she was spotted by the BP tanker British Trident off the west African coast.

The Salem was listing badly but sending out no distress signals.

Five minutes after the captain of the British Trident spoke to the Salem there were signs of an explosion and large clouds of orange smoke.

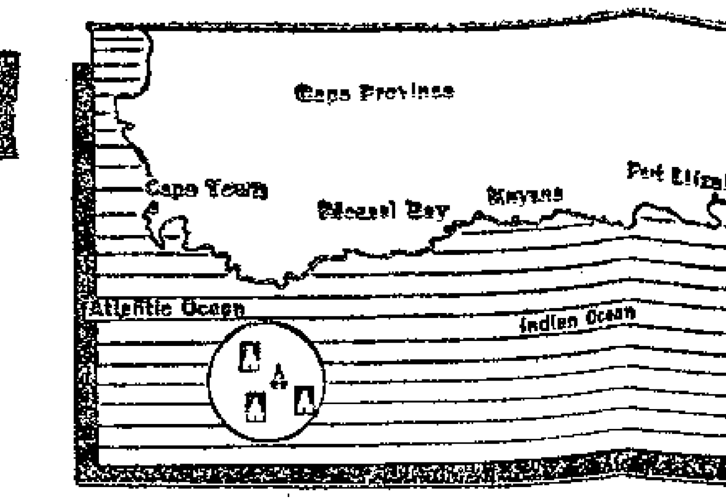
Minutes later the crew of 24 were in lifeboats heading for the Trident.

The Salem finally sank only 30 hours later.—Own Correspondent, The Star's London Bureau.



R221-MILLION ALREADY SPENT AND ANOTHER R72-MILLION BUDGETTED THIS YEAR ON A MASSIVE GAMBLE

BIG SPENDER



The approximate position of the current oil drilling operation

. . .and the boys in the Bredasdorp Basin who operate the giant Sedco K technological monster as the relentless search for oil is stepped up off our coast

Peter Kerr

Ray Gunsolly

By TONY SPENCER-SMITH

SUDDENLY the rig is there beneath the Sikorsky helicopter, floating in the middle of nowhere, swaying gently in the dark blue swells of the Indian Ocean.

This is the Sedco K off-shore oil drilling rig, steadily boring a "wildcat" well deep into the seabed more than 100 kilometres off Mossel Bay.

She is huge and bright with paint — red, yellow, white, blue — an ungainly R70-million technological monster on massive steel pillars, one of the strangest vessels on earth.

A Sunday Tribune team visited her last week where she is at work in the Bredasdorp Basin.

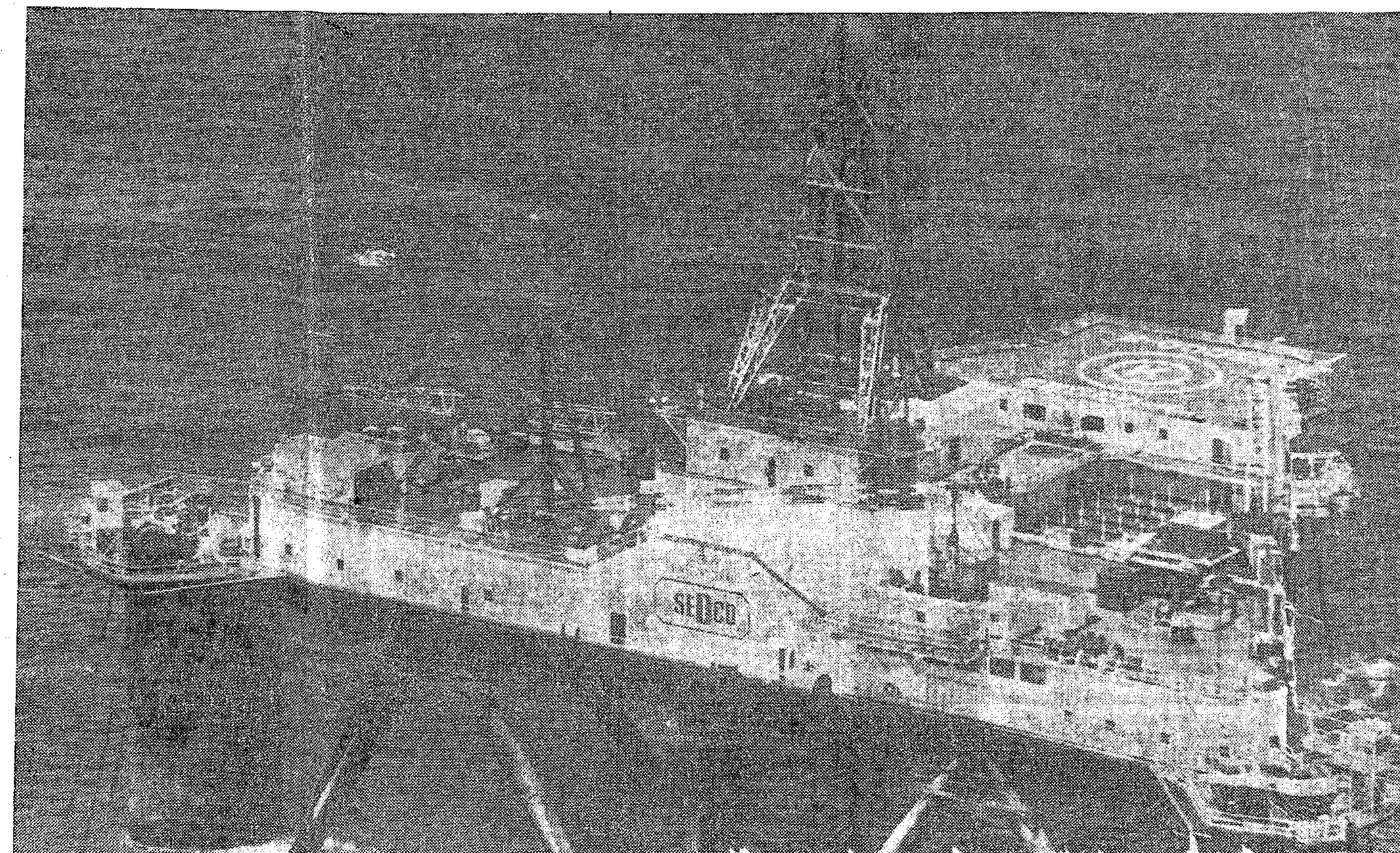
Recently the Government announced the search for oil and gas would be greatly stepped up.

Busy on the west coast is the ultra-modern Sedco 708, while a third off-shore rig the Sedco J, will be arriving from the North Sea to join the search in about June.

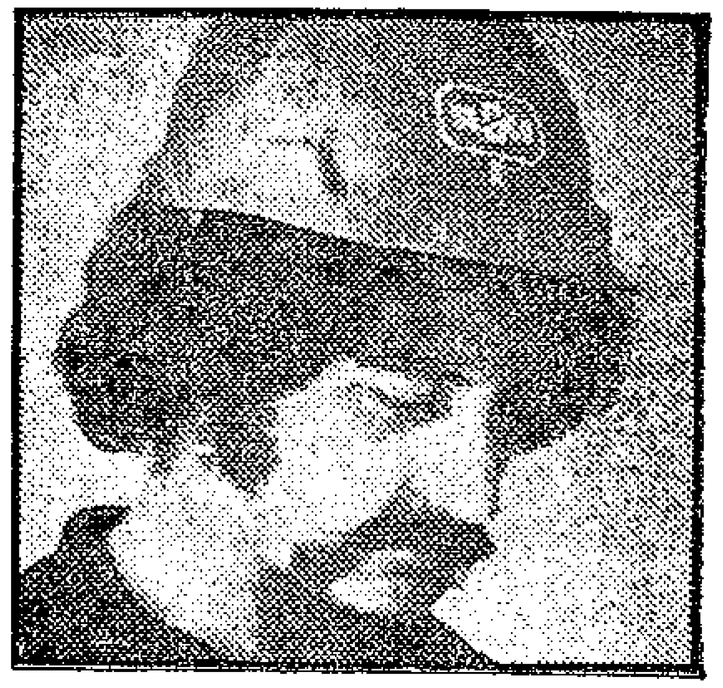
Then for the first time South Africa will have three off-shore rigs operating simultaneously — and the search will be at its highest level ever.

A senior Soekor official revealed that:

- In the next financial year, starting on April 1, Soekor plans to spend R72-million on the search—nearly half the R153-million spent by the fully state-financed company in the 15 years of the search;
- When sub-leassee work by private companies is included in the oil search figure up to now, R221-million has already been spent.
- The Sedco K alone costs Soekor a cool R50 000 a day. That's over R2 000 an hour, 24 hours a day, 365 days a year — a sort of demented taxi meter which would have driven me mad if it had been ticking away audibly while we visited the rig; and
- In the current financial year, which ends on March 31, Soekor will have spent about R50-million on the search.



Johann Neil



Joe Nicholson

The Sedco J, still drilling in the North Sea, will join the Sedco K in the Bredasdorp Basin.

Assessing the current oil search, the spokesman said Soekor had in 1979 found the first encouraging signs of oil off the south coast in the Bredasdorp Basin. The basin is now one of the key search areas.

Previously, promising gas finds had been made off the South West Africa coast at the Kudu 1 well, and off our south coast.

"Soekor believes the Orange River basin on the west coast — of which two thirds is in South African waters and one third off South West Africa — should be an important target.

"The company will endeavour to select shallower holes in this area where the chances of finding oil should be improved.

"In the near future, the bulk of the south coast work will be in the Bredasdorp Basin where the presence of 500 metre-thick source rock has been found."

* * *

ON BOARD the helicopter, which landed neatly on the rig, were men fresh back from two weeks leave, with two weeks of 12-hour shifts ahead of them.

About 72 men, white and black, South African and from a range of countries including America, Canada, Britain and Holland, man the Sedco K at any one time.

Most work on the two-weeks-on, two-weeks-off system, and are richly rewarded for their time in the noisy, isolated metal world.

They eat extremely well. The hot and delicious chicken curry lunch I ate on board was only one of the three main courses prepared by chef Joseph Moodley of Port Elizabeth.

But drink and women are forbidden.

As Jim Barrett from Canada, barge marine supervisor of the Sedco K, told me: "It is dangerous enough working on an oil rig without some guy getting bombed out of his mind.

Fear

"Anyone not 100 percent aware is no good at all — so of course dagga is also b a n n e d and we put the fear of God into the men to ensure everything goes smoothly aboard."

In his time off the rig, Jim Barrett lives in Cape Town with his American wife and three children.

One of his children was born in Portugal, when he was involved in drilling work there, and the other two in South Africa.

He is very pleased to be working where he is. "This is one of the best postings one can get in this sort of game anywhere," he told me.

Like the other men on board, he gets on and off the rig by helicopter and free transport to and from Cape Town, at Soekor's expense, on a chartered Dakota.

One of his main responsibilities is to see that Sedco K keeps properly aligned above the hole it is drilling, and stays "in trim" — floating level.

A complex control room, manned 24 hours a day, monitors the position of the rig above the hole electronically and a series of valves allow water to be let in or out of massive ballast tanks.

The rig is anchored by nine lengths of chain over 1 000 metres long and each with two anchors attached.

Each length of chain has its own winch and the anchors weigh 15 tons and each link of the chains weighs about 40 kilograms.

"It's those winches which give me most sleepless nights," said Mr Barrett.

The man in overall control of the rig is Peter Ker who does not stay on the rig but is based in Cape Town.

Inspection

A New Zealander with 12 years, off-shore drilling experience — three of them in Brazil, when he worked for three weeks at a time and then "commuted" to three weeks leave in New Zealand — he visited the rig on the same day as the **Sunday Tribune** on his weely inspection tour.

"This is one of the safest industries," he told me.

"If it were unsafe on this rig I wouldn't be here.

"We spend an enormous amount of time on safety. At present, we are drilling a wildcat well — that means this is the first well in this area and we don't know what's down there and at what pressure.

"But we can handle anything we find".

Safe or not, I was issued with a card as soon as I went on board which said: "Welcome to Sedco K. Help us to help you," and informed me which of the two lifeboats I should head for in the event of an emergency.

And the Soekor spokesman told me the biggest danger facing a rig was a 'blow out' — the production of oil or gas from a hole over which control is lost.

"The rig could be set on fire. Or the gas could so lighten the seawater around the rig that the rig sinks."

Kerr like most of the men on the rig, works for Sedco, the Dallas-based oil exploration company.

They own the rig and do the drilling to the directions of Soekor, which is wholly-owned by Sasol and the Industrial Development Corporation, and 100 percent state-financed.

By last week's visit, Sedco K's current well had reached 4 100 metres below the level of the drilling platform, which is about 30 metres above sea level. The seabed was some 180 metres below the rig.

The rig has to cope with strong currents and some devastating storms.

Jim Barrett told me: "Many people have compared conditions here with the North Sea.

"The swells get pretty high. The rig can sway a lot more than it is doing at the moment."

In charge of the drilling operation itself is Ray Gunsolley, a Canadian. He has been in off-shore rigs for 10 years, and land rigs before that. His title is rig superintendent or tool-pusher.

Soft-spoken, his manner gives little indication of the tough job he is engaged in.

Platform

On the drilling platform was bare-chested assistant driller Troy Hinton of Mississippi. The drill turned relentlessly in the background, and he spoke to the accompaniment of occasional d e m o n i c a l metallic shrieks as driller Joe Nicholson applied more weight to the drill.

"People lose fingers quite often in this game," he said. "It happens all the time. I mashed the end of two fingers recently, but lost only the nails.

"The drill is turning now at about 60 rpm, but it can go up to 100 rpm or so."

Troy Hinton spends his two weeks off staying at different hotels in the Cape, "laying in the sun and drinking beer".

Soekor has a drilling engineer, Johann Neil, on the rig, and a geologist from Pietermaritzburg, Jan Maier.

Pay

The latter is in charge of the continual monitoring of the material coming up from below the sea bed. He spends much of his off time in Durban or at Scottburgh, where he has a cottage.

"I don't earn a fortune, but the pay is better than in land jobs. They've got to pay us something to sit out here for two weeks at a time."

The rig operates on a 24-hour basis, 365 days a year.

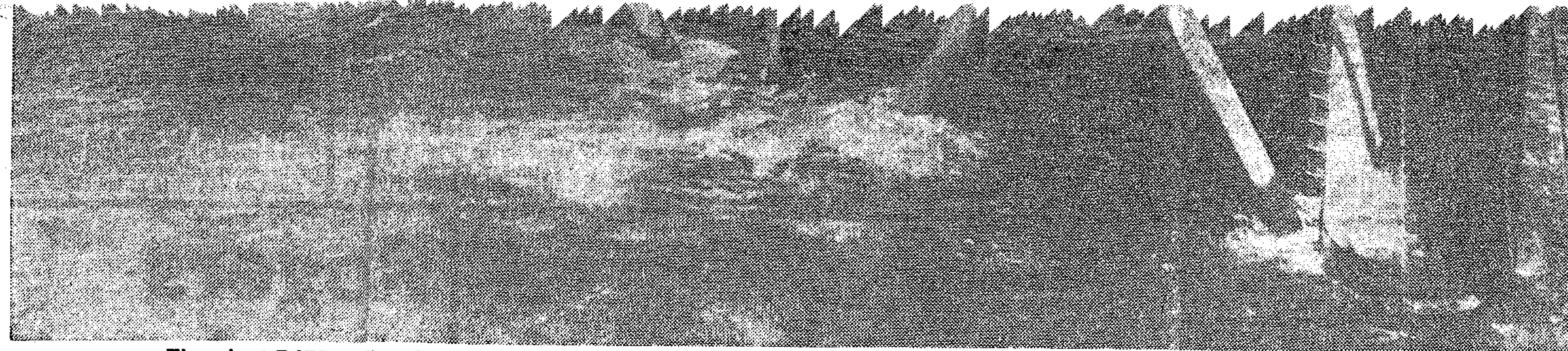
Seen from above it is triangular in shape. The living quarters are comfortable but not particularly luxurious. SATV programmes can be picked up, and there is a library of films on videocassettes.

At one point on the deck, a sign warned picturesquely: Danger. Do not pass. Life is fragile. This can be you — the last words appeared beside a crudely drawn skull and crossbones.

The sign was warning of a hole in the deck where alterations were being made.

South Africa's search for oil and gas could free the country from its dependency on foreign fuel sources — or that vast amount of money could disappear literally down the sea.

That is the big — but necessary — gamble the country is taking now.



The giant R170-million Sedco K oil rig which is engaged in boring a wildcat well in the Bredasdorp Basin off Mossel Bay

Crew of the Sedco K disembark from the helicopter on board the oil rig the corrupting agent . | Weir in the latter's return-to- of

RDM 5/1/80

'Koeberg nuclear project should be mothballed'

(55)

CAPE TOWN. — Solar heaters at R500 each could be installed in 4-million homes for the cost of the R2 000-million Koeberg nuclear reactor, Professor Jan Giliomee, associate professor in entomology at the University of Stellenbosch, said in Cape Town yesterday.

He told a University of Cape Town summer school course on Koeberg that this would provide hot water for 12-million people — pollution-free and using a renewable resource.

Prof Giliomee said Koeberg should be mothballed and put into operation only when its use became imperative.

The plant would produce 250kg of plutonium a year.

"This is one of the most dangerous substances on earth.

"A speck of plutonium dust inhaled is lethal.

"It has a life of 250 000 years and to cap its noxious properties it is a material nuclear weapons can be made of," he said.

The material would be transported with other toxic wastes by road from Koeberg to the airport or harbour.

Theft in the reactor and hijacking would always be a possibility.

Since this was true for all 400 existing nuclear reactors in the world, it had become a global nightmare.

Prof Giliomee said that the US had stopped reprocessing for fear of plutonium dispersal.

He said the 28km that separated Koeberg from Cape Town were not sufficient to be comforting.

Evacuation within a 32km range was considered at Three Mile Island, he said.

Koeberg was on the growth axis between Cape Town and Atlantis.

This would bring many people and valuable property within close range of the reactor.

"The planner who proposed that the area around Koeberg be reserved for urban functions such as cemeteries, showed great insight, if not foresight."

A coal fire station a quarter the size of Koeberg would have adequately served the Cape when transmission from the north was interrupted.

Prof Giliomee said no licence to operate the nuclear power plant should be granted until an acceptable way of storing all the waste had been found.

"No licence should be granted also until an emergency evacuation plan has been fully explained to the public and they have been told what precautions to take in case of an accident," he said. — Sapa.

RALPH KIRSCH

7. HEALTH NEEDS IN SOUTHERN AFRICA

My objectives for this paper are: To define health; to discuss some of the processes involved in promoting health; to identify some of the problems facing those responsible for promoting health; and to discuss some of the solutions to these problems.

Health has been defined as a "state of complete physical, mental and social well-being - and not merely the absence of disease or infirmity".[1] The processes involved in promoting health have usually been examined through the eyes of the doctor as opposed to the patient. Indeed, it is said that the word "patient" appears only six times in the 1972 Grey Book on re-organisation of the Health Service in Great Britain, and appears approximately ten times in our own Health Act.

Seen from the doctor's point of view, health may consist of prevention, cure and rehabilitation, and while most doctors will concede that "prevention is better than cure" - that cure, at best, is expensive and wasteful of human life, not to mention quality of life and that rehabilitation is seldom optimal; the majority of practitioners still shy away from the processes involved in prevention. Why are doctors indifferent about preventative medicine? In part, this lack of enthusiasm is due to ignorance. The learning process in medicine, as in the case of any other subject, is best achieved through repetition, and, in the setting of the teaching hospital charged with curing disease, the few lectures on preventative medicine are soon forgotten. However, ignorance is not the only factor. An examination of health from the public's point of view, will show that adequate nutrition, housing, employment, and education, form the corner-stones of good health. Indeed, with the addition of family planning facilities and ante-natal as well as post-natal services to these corner-stones, most of the health needs of the community will be met. It follows therefore, that "health development is essentially a political and social process that should start off with the acceptance of the social function of health and should ensure that health technology is developed and applied in harmony with this social function".[2] It also follows that health is linked to the general level of the community and not to the structure of the health care system, however important this system may be.[3] Despite the above, most doctors remain loathe to involve themselves in what others may call political matters and this, when added to the lack of education to which I have referred, probably accounts for the lack of interest which most practitioners have in the promotion of health.

Fortunately, there is now a world-wide swing towards preventative or community based medicine. This has applied to South Africa as well. The Minister of Health has called for a comprehensive Health Care delivery system

Opening a symposium on Hea… 76, he stated: "No longer does t… tra-ditionally safe place at t… d most of the attention and most … health planners have inverted the … care" represented by the broad b… of place at the top. Primary heal… ich are adequate for meeting t… needs and which can and should b… It is the primary services which … a com-prehensive health care sys… ch enables access to the seco… This statement is extremel… pro-mised increase of expendit… frica, only 2% of the total expen… enta-tive services![5]

It is interesting to exami… tructure of health services in deve… istori-cally, doctors from Europe … ly 19th century, before public hea… home. Thereafter, public health … linical medicine and largely ignor… Africa, a doctor would rea… e, obstetrics and surgery, bu… ublic health. Doctors first ca… nd settlers who were exposed … hospital facilities for this. The… kness and the need they saw arou… pro-vision of curative services … to outpatient department and t… ys remained hospital-based and

Geographical factors played … re most of the population live … remains within easy reach o… owever, in Africa, where the populat… t be reached by hospital based me… er

Salem: Shell suing SA parties

ARGUS 6/2/80

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Argus Bureau

LONDON. — Shell International Petroleum disclosed here yesterday that it is starting legal proceedings against unnamed parties in South Africa following the sinking of the oil tanker Salem.

A spokesman for the company told The Argus yesterday that Shell was now satisfied beyond any doubt that the bulk of the 193 000 tons of oil carried by the Salem had been secretly discharged prior to the ship's sinking off West Africa last month.

'Acting on information supplied by Lloyds of London we have now firmly decided to take legal action against parties in South Africa,' said the spokesman.

Shell was not prepared to say at this stage who was to be sued, and exactly what the action was aimed at achieving.

But insurance sources here said it was unlikely Shell would try to recover the oil, valued at R45-million (56-million dollars. The action was likely to be a cash claim.

Major investigations into what happened to the Salem and its cargo of Kuwait crude have been launched by several countries, including Britain, Liberia, Senegal and Greece.

The Salem's cargo was bought by Shell International Petroleum while the ship was at sea. After the Salem sank, Shell was forced by contractual obligation to pay for oil it never received.

The Salem's captain, Mr Georgoulis, is still being held in Dakar, Senegal, with the first engineer. They are not under arrest, but their passports are being held by the harbour authorities.

CT 6/2/80 55

US law 'responsible' for Koeberg siting

FAULTY legislation passed in the United States 23 years ago had indirectly been responsible for the siting of Koeberg nuclear plant at Duynefontein, Dr Arnold Abramovitz, senior lecturer in psychology at the University of Cape Town said yesterday.

Presenting the last lecture at the University of Cape Town's summer school course, "Why Koeberg?", Dr Abramovitz said the Price-Anderson Act, passed by the United States Congress in 1957, had indirectly affected siting policy in the United States. United States experience had in turn served as a model for the Atomic Energy Board and Escom.

"To put it quite briefly and bluntly, it may be the case that Koeberg is too close to people largely because of a domestic decision taken by a foreign legislative body nearly a quarter of a century ago," Dr Abramovitz said.

The Price-Anderson Act provided for a combination of private insurance and government indemnity up to a maximum of $560-million in the event of a single nuclear accident. In extreme cases Congress would step in.

"Since then, the American nuclear power industry got under way both domestically and as exporters, receiving government protection unique in the history of any privately-promoted technology."

Professor Abramovitz said the crucial point was that there were no clauses written into the Act whereby electricity-generating utilities were penalised for operating large reactors near concentrations of population.

"Had nuclear reactors been privately insured to the full, they would have remained as they were at the time of the legislation — relatively small and relatively remote from centres of population."

A recommendation of the Kemeny report issued after the accident at Three Mile Island said that new power plants should be located in areas remote from concentrations of population.

"The Kemeny report makes it plain that in the case of a plant which is already badly sited, such as Koeberg, the best we can do about it is to ensure that there is a specially-prepared emergency plan for evacuating people who live within certain distances from it."

...SIONS OF THE ICD (8th REVISION)

...visions V, XI, XII, XIII
...ch of these categories).

...: DISEASES

C M	C F	B M	B F
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8,27	7,48	3,56	3,42
0,21	0,21	0,20	0,22
1,14	0,78	0,36	0,45
3,30	1,37	2,15	1,27
5,48	2,78	5,45	2,93
3,33	2,69	1,66	1,61
3792	3146	3472	2593

II

	W M	W F
0-1	0,17	0,1
1-4	0,03	0,(
5-24	0,09	0,(
25-44	0,26	0,:
45-64	3,01	2,!
65+	12,24	7,'
ALL	1,41	1,'
NO.	2920	25'

III ENDOC

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0-1	0,09	0,
1-4	0,03	0,
5-24	0,01	0,
25-44	0,02	0,
45-64	0,09	0,
65+	0,39	0,
ALL	0,05	0,
No.	114	

(283) VDP 6/12/80

(55)

EL assured on electricity cost

EAST LONDON — The latest increase in the price of coal will not influence East London's electricity tariffs.

Commenting on the 11 per cent coal price increase announced last week, the regional manager of Escom, Mr E. F. Otten, said Escom's tariffs would not be affected.

"East London gets all its electricity from Escom," he said yesterday.

"Areas like Port Elizabeth, which get some of their power from their own power station, will have to adjust their tariffs however.

Escom's power stations are powered by collieries situated as near as possible to their stations, he said, and Escom took out contracts to obtain all the coal from these mines.

Because Escom had long-term contracts, Mr Otten said, the 11 per cent increase would not affect them.

Asked if there was any tariff increase on the cards, Mr Otten said it would be impossible to make a statement.

"One never knows quite what inflation is going to do," he said. —DDR.

the South African population from all causes of death. The proportional contribution of the seventeen major disease categories of the International Classification of Disease (8th revision) to the overall mortality of the various communities is summarised in Fig. 5. The whites show a typical 'developed' country spectrum of mortality with Infectious and Parasitic Diseases being of minor importance (2,0%) and Neoplasms (15,6%) and Diseases of the Circulatory system (50,5%) being of major importance. For urban Africans and 'coloureds', Infectious and Parasitic Diseases make an important contribution to the overall mortality (19,5% and 23,5% respectively), with diseases of the respiratory system and certain causes of perinatal mortality also being of importance. Within the category of Infectious and Parasitic Diseases, diarrhoeal diseases and tuberculosis are the most important causes of mortality. The 'coloureds' experience an interesting combination of 'developed' and 'underdeveloped' mortality with a high death rate from enteritis and diarrhoeal diseases in the young and circulatory diseases in later life. What is also of interest is the relatively large number of symptoms and ill-defined conditions, particularly in the African community (22,5%). This provides some indication of the provision and utilisation of medical services to Africans in the urban areas. In general, the Asians have a spectrum of mortality intermediate between

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oured' community. In
causes of death are so
ecome disproportionately

Mortality rates greater than 5/1 000 appear in italics in Table I. For all of these major causes of mortality, the Asian and 'coloured' mortality rates exceed those of the whites.

However, in this context, what requires emphasis is that by using the major disease classification a certain amount of detail is lost. For example, despite the fact that the overall rates for diseases of the circulatory system are comparable for whites, Asians and 'coloureds', within this broad category the mortality rates for specific diseases vary markedly. Table II provides the proportional contribution of the major circulatory diseases for the whites, Asians, 'coloureds' and Africans. Whilst Ischaemic Heart Disease is the major Circulatory Disease in the white and Asian communities, Cerebrovascular Diseases are the major cause of Circulatory Diseases in the 'coloured' and African communities.

Similarly, if the Accidents, Poisoning and Violence category is examined in greater detail, motor vehicle accidents are the major cause of mortality in whites, 'coloureds' and Asians, the second most important cause in the white community is suicide, whilst that for the 'coloureds' is homicide. For Africans, the latter is the main cause in this category.

The expectation for life at birth and at age 45 for whites, Asians and
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at e_o and males at e_{45}. The fact that for the 65+ age group, Asian women have the highest mortality rates for respiratory, circulatory, digestive, genito-urinary and ill-defined causes of death (Table I) may contribute to this anomalous situation.

Fig. 7 summarises the percentage improvement in the expectation of life at birth subsequent to the total elimination of the mortality associated

he Star Thursday February 7 1980

Hyperstore cuts retail petrol price

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Fair Deal Reporter

A Boksburg hyperstore announced today it will cut its petrol prices by 0,5 cents a litre from tomorrow afternoon.

The store's announcement follows a Government-approved increase in the petrol profit margins of oil companies and filling stations.

It was announced yesterday that the oil companies would get an increase of 4,1c a litre in their margins and filling stations one cent a litre.

FUND

Retail prices would not be raised. The increased margins would be borne provisionally by the petrol equalisation fund.

Mr S Joubert, general manager of the iPck 'n Pay Hypermarket, Boksburg, said today that his store had decided to use only 0,5c of the one-cent increase in gross profit margins. It would pass on the other 0,5c a litre to the consumer.

BELOW

This, he said, would bring petrol prices at the hyperstore's filling station to one cent below those charged by other petrol stations, because, for several years, it had been selling petrol at 0,5 cents below the prices of other retailers.

From tomorrow afternoon, he said, the hypermarket would charge 53,2c a litre for super petrol against a normal price of 54,2 cents and 52,6c a litre for regular petrol against 53,6c.

7/2/80

PRESS RELEASE ISSUED BY THE HONOURABLE F W DE KLERK, MINISTER OF ENVIRONMENTAL PLANNING AND ENERGY

USE OF ALCOHOLS AND OTHER FUELS PRODUCED FROM INDIGENOUS RAW MATERIALS FOR THE PURPOSE OF AUGMENTING AND REPLACING PETROLEUM FUELS IN INTERNAL COMBUSTION ENGINES

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A. BACKGROUND

1. In January 1979 the Energy Policy Committee, in consulta= tion with the Minister of Economic Affairs, decided to appoint a sub-committee to give intensive consideration to possible methods to render the country less dependent on imported crude oil and petroleum products.

2. Following the sub-committee's investigations and findings the Energy Policy Committee recommended that the third Sasol project be developed and this recommendation was adopted by the government.

3. During the process of study and investigation the committees concerned and the Cabinet were continuously aware of the fact that alcohols, produced from a variety of indigenous raw materials had the potential of being used to augment petroleum products in the propulsion of internal combustion engines.

4. Up to, and at the time when the decision on Sasol III was taken in January 1979, the government bodies concerned were con= vinced that, while these alcohols had potential which should be

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kept in mind continuously, a number of technological, logistic and economic considerations made valid the conclusion that, at that stage active government steps should be confined to and concentrated on the development of a third Sasol project.

5. At its meeting on the 15th August 1979 the Energy Policy Committee decided that increased prices of crude oil and the general situation with respect to the acquisition thereof, made it necessary to once again study intensively the potential use of alcohols in the light of changed circumstances. The sub-committee was requested to do so and to report at the December meeting of the Energy Policy Committee.

6. The reasoning, findings and recommendations of the sub-committee were considered by the Energy Policy Committee on the 7th December 1979. The Energy Policy Committee, having studied and considered the report and recommendations, then submitted its findings and recommendations to the Cabinet. The conclusions arrived at by the Cabinet and its decisions in this regard are now released for general information.

B. CONCLUSIONS

1. Consideration of the role that alcohols may possibly play in the supply of liquid fuels is an aspect of a broader energy policy from which it cannot be divorced.

3/....

2. In the light of the facts that we are well endowed with coal, that low-grade coals which are generally unsuitable for other purposes lend themselves to liquifaction and conver= sion to motor fuel, that we have made considerable progress in the technology of gasification and liquifaction and are world leaders with their practical applications, the question can be asked whether we should even consider moving outside these available and known fields in our search for greater reduction or even total elimination of our dependance on imported crude oil.

3. The products which are essential to sustain the transpor= tation sector as it is today are petrol, diesel and jet fuels. It follows that the ideal to be aimed at is that process which would enable us to provide the whole spectrum of products from coal as the raw material. Seen in this light a decision merely to build further Sasol plants or others based on new as yet unknown but possible variations of the technology which would provide the same products with the same raw material, would appear to be logical.

4. Such a rigid, though theoretically justifiable policy decision would be wrong for the following two reasons, amongst others. Firstly, in a century of startling technological advance, doors should not be closed to exclude new inventions, technologies and applications which are at present unknown. Secondly, the possibility of the construction of new Sasols or other liqui= faction plants of a similar nature should be placed in the

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right perspective in the light of the country's total capacity.

5. The development of additional Sasol projects by Sasol is, of course, possible if our raw materials and proven technology were the only factors involved. Raw materials and technology are, however, only two aspects in the process of consideration. Economic and manpower considerations may be the deciding factors. Seen in total context, this possibility must be seen as so radical that consideration should take place with due regard to its in= fluence on the entire economy. It does, of course, not necessarily follow that further Sasol type projects should be undertaken only by Sasol. The development of such projects by private enterprise, using either the Sasol technology or any other proven technology, should this eventuate in due course, is a distinct possibility.

6. Under present circumstances the conclusion is arrived at that the goal may be set to eventually reach a maximum contri= bution of 15% - 20% of our liquid fuel requirements from these alcohols and even vegetable oils.

7. Before it could arrive at final decisions, the Cabinet had perforce to consider once more the matter of the imbalance between petrol and diesel fuel both in the production and con= sumption sectors. This matter has frequently been explained and debated. In brief it amounts to the following:

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(a) Petrol is largely used in passenger vehicles of which a portion only is applied in production but the greatest proportion is used not at all or only indirectly for pro= ductive purposes. It is easier and less upsetting to apply conservation measures on petrol.

(b) There already exists an imbalance in the production and use of petrol as a result of the more rapid growth of the demand for diesel. It is expected that this imbalance will increase.

(c) The quantity of crude oil which has to be imported is there= fore determined by the demand for diesel fuel. Put differently, the import of crude oil can only be lowered if and to the extent that alternative fuels can replace or augment diesel fuel.

8. Steps by the government, and possible incentives should there= fore, in the first instance, be aimed at encouraging and assisting the private sector to augment and replace diesel fuel. This con= clusion and approach is embodied in the decisions of the Cabinet.

9. Comprehensive investigations by the Committees with the assistance of evidence and estimates by interested bodies have left the impression that methanol, derived from coal, emerges as a stronger possible alternative fuel to ethanol derived from agricultural products. Apart from the fact that these conclu= sions are justified by pure economic calculations, the production of ethanol from agricultural products has further significant

implications. With agricultural products as basic material the industry would be based on raw materials which are very much subject to rising prices following on price increases of a whole series of other commodities such as fertiliser, weed-killers, agricultural machinery, etc. All inputs in the process of cultivation contain a consideral energy component. There is a real risk that in the long term the total energy input could compare most unfavourably with the total energy output. Most of the potential raw materials are also food products or the land on which they would be cultivated could be utilised for food production. The possibility of a conflict in demands between the food production and fuel industries in these already difficult times, and permanently in the future, cannot be ignored by any responsible authority.

10. It could thus hardly be permitted, especially with government assistance, that a too large percentage of our liquid fuel which could result in the collapse of the fuel industry by its with=drawal, be produced from food as raw material.

11. The government is prepared, however, to permit the use of agricultural products for the production of ethanol and is further prepared to grant the assistance as set out below. This decision is based on the conviction that should prospective manufacturers find it economical and decide to procede with the production of ethanol from agricultural products, the percentage

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of our fuel thus derived will probably not be so large as to have catastrophic results if this fraction is withdrawn.

C. CABINET DECISIONS

1. Uniform excise and other duties, as presently applicable to Sasol shall apply to all liquid motor fuels produced from indigenous raw materials and which are intended and in fact used for the propulsion of internal combustion engines. This means that duties in respect of, for instance, alcohols will be brought in line with petroleum fuels produced from indigenous coal. For the purpose of calculation, the energy content of such fuels, as against that of petroleum, will apply. In prac= tice this means that such products which replace petroleum fuel will enjoy an advantage of approximately 4 cents per liter, petroleum equivalent, over fuel derived from imported crude oil.

2. Over and above the advantage mentioned in 1 above, an additional incentive shall be given in respect of efforts and actual contributions to the replacement of diesel fuel only. These additional monetary incentives shall take the form of reductions in duties and shall be granted to licenced producers. The extent of the additional incentives and the licensing of fuel producers shall be considered and decisions shall be taken in the light of, inter alia, the following circumstances:

(a) The applicant's proven ability, that is, his knowledge and experience of the technology, methods and logistics of

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production, distribution and application of alternative fuels intended to supplement and/or replace diesel fuel.

(b) The applicant's estimates and finally, actual cost of pro= duction of the fuel and the cost of transport, mixing, storage and distribution in the process of replacement and augmentation of diesel fuel.

(c) The applicant's knowledge and experience in this field, his disposal over raw materials and his general ability to develop and run an undertaking of this nature.

(d) The extent of the market for the product concerned as from time to time determined by volumes already produced and the demand.

(e) After an initial period to allow for the submission and scrutiny of applications the government will decide on the nature and level of incentives which will then apply to all producers. The aim shall be the lowest level of incentives which will result in an appreciable production and use of the alternative for diesel fuel. These incentives will then be applied to all domestic producers of liquid motor fuels which satisfy the conditions of diesel substitu= tion.

3. Except for these incentives by way of reduction in levies, as specifically determined beforehand, and generally the creation of a favourable climate, the government shall accept

no responsibility for the profitability of any undertaking, the acceptability of the product as motor fuel, the continuity of demand and the marketing of the product as motor fuel, the availability of raw materials or any other assistance or pro= tection.

4. For the purpose of experimentation with a view to the use thereof for motor fuel, the production of alcohols resulting from such experiments shall not be subject to excise duties but disposal thereof shall be controlled.

5. Existing legislation controlling the production of alcohol, the building of production facilities and the storage and dis= tribution of alcohol shall be scrutinized and suitably amended to ensure that no undue difficulties are placed in the way of the production of alcohol intended for use as motor fuel, or research in that connection.

6. The importation of reasonable quantities of methanol or other liquid fuels, where these are not locally available, for the purpose of testing and development work, shall be permitted.

A Standing Committee will now be appointed by the government to study and evaluate proposals following on these decisions and eventually to make recommendations to the government with regard to specific decisions in connection with levy concessions which

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should be made in the case of substitutes for diesel.

ISSUED BY THE INFORMATION SERVICE OF SOUTH AFRICA AT THE REQUEST OF THE MINISTER OF ENVIRONMENTAL PLANNING AND ENERGY

CAPE TOWN

7 February 1980

Scissors movement

Western exultation at the recent slump in the spot oil price will now have to be tempered by distress at a new wave of increases in listed oil prices.

Admittedly, such a narrowing of the overall range of oil prices will make for a more rational world market. But the net effect should be an increase in average prices, taking account of the probable proportions traded on the spot market.

Of course, if an individual oil importer is obliged, for political reasons, to lean especially heavily on the Rotterdam market, it may gain on balance — spot oil is now trading at $30 to $33 a barrel, depending on quality, against $39 to $40 before the late December crack. Spot prices are now broadly in line with the listed prices of Algeria and Libya.

Opec's new push on listed oil prices has surprised the oil companies, say industry sources, although they do restore the original differentials between Saudi Arabia and other Gulf producers.

Saudi light oil goes up $2 to $26, while Kuwait and the United Arab Emirates have raised listed prices by the same margin, to $27.50 and $29.60 respectively. All these increases are backdated to January 1. The official Emirates News Agency claims that Iraq and Qatar have also raised their prices by $2 (to about $28 and $29.50, respectively), although official confirmation has not yet been received.

Iran goes up by $2.50 all round, taking the base price of light crude to $31; Nigeria goes up by $4 to a range of $33.19 to $34.21, and Indonesia goes up by $2.

Non-member China, claim Japanese importers, wants to hike its price by $6.23 to $32.23, effective January 1. Another non-member, Oman, which presently charges $28.20, is also considering an increase.

And United Arab Emirates oil minister Mana al-Otaiba predicts that oil producers will "inevitably" raise prices in the middle of this year, but not all at the same time and not by the same amount. As his statement preceded the latest wave of increases, he may well have been referring to them rather than to yet another hike later in 1980.

Other bad news is that Poland plans to increase its oil imports from Arab, African and Latin American suppliers which last year amounted to 3 [illegible] (around [illegible] a [illegible]), comprising one fifth of imports. The balance came from the Soviet Union. So Poland's plans lend some credence to the CIA view that Russia is experiencing oil shortages and could therefore find it difficult to meet any increased demand from its Comecon partners.

Cuba's response has been to raise its oil export prices [illegible] to [illegible] Opec's increases, while Japan's foreign minister Saburo Okita will [illegible] visit the Middle East to [illegible] [illegible] oil supplies.

Mr. America's newfound determination about energy policy found further expression in the presidential State of the Union speech. Carter said he was prepared to enforce a fee to prevent the US exceeding his 1980 oil import quota of 8.2m barrels a day, although he claimed imports would be much lower. He also offered to lower the ceiling if other importers joined the US in "fair and mutual cuts."

If the US faced a serious oil shortage, he would not hesitate to impose mandatory petrol rationing. And, after consultation with state governors, the US would set goals for petrol conservation for each state. If these voluntary targets were not met, threatened Carter, he would make them mandatory.

All this news should be seen in a context of exceptionally high oil stocks in the industrial countries, with storage capacity full to the brim after the recent bout of [illegible] buying. [illegible] connective mar[illegible] [illegible] this situation should lead to a [illegible] of static or declining oil prices.

But Opec has recently displayed an alarming capacity to respond to oil surpluses by quick-fire production cutbacks. [illegible] December [illegible]. So, with the average of listed prices edging up relentlessly to [illegible] price level of $30 a barrel, there is no real basis for changing earlier pessimistic forecasts.

Saudi oil policy could just possibly, though, shift in directions which would [illegible] the West. Recent reports from Riyadh suggest that the Saudis are dis[illegible] [illegible] their increase to $26 did n[illegible] [illegible] the way for a reunification of t[illegible] [illegible] structure, as intended. Instead sti[illegible] [illegible] compounded increases in [illegible] [illegible] *Middle East Economic* [illegible] suggests that Saudi Arabia is co[illegible] [illegible] a price reduction or a productio[illegible] increase. Only the latter could really he[illegible] and then only if it were really large.

There is a hint of possible good news [illegible] from the Western hemispher[illegible] though: the London *Financial Times* r[illegible] [illegible] that Mexico might decide to i[illegible] [illegible] current output levels of prov[illegible] [illegible] barrels per day to some [illegible] barr[illegible] [illegible] by the end of 1982, a con[illegible] revision of earlier targets. Mexico's v[illegible] and rapidly increasing reserves co[illegible] easily sustain such an increase.

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'Electricity is for peace'

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By PETER BAYER

A COMMONWEALTH of states, linked by a common need for electricity, could be the bond that ultimately brings about peace in Southern Africa.

That's the forecast of the retiring chairman of Escom, Dr R L Straszacker, who believes electricity is the link that will bridge political differences on the sub-continent.

He is also convinced that the salvation for South Africa's energy problems lies in coal, and not nuclear power, and that there will ultimately be an inter-connection of Southern African states to utilise best the energy resources.

Dr Straszacker, who retires on February 18, said in an interview yesterday that electricity supply had become a vast responsibility, and it played an important part in South Africa's structure.

He believes there should be no financial restriction of the supply and demand of electricity.

"That would be a fatal mistake," Dr Straszacker said. "I foresee, that with our own financing through the Capital Development Fund, we will be able to handle the expected growth.

"For a long time this will still be based on coal, because this is by far our biggest source of energy. Nuclear energy will be supplementary to this, our hydro peak load coverage will have to be increased, and even gas turbines will be valuable for abnormally high peak requirements."

As far as developments across the border were concerned, Dr Straszacker said he was convinced that Escom could work to the advantage of Southern Africa.

"The hydro-power potential in this region, with its large rivers, the vast quantities of coal in our neighbouring states . . . all this can be developed well," he said.

In the long term, he saw an inter-connection of Southern African countries.

"The first step will certainly be the linkage of South West Africa with the Republic. Botswana is situated so conveniently between these two states that I cannot see how it can be left out.

"The capacity of Rhodesia and Mozambique to consume their own potential power is as yet so small that they will have to interlink with the Republic in any big hydro systems."

Technically, Dr Straszacker said, these moves made sense.

"The Kariba Dam is a good example of this. Over the years, Rhodesia and Zambia utilised power from this dam, although often they did not wear the same political spectacles."

Dr Straszacker will retire on his 70th birthday. His adult life has been devoted to the mechanical sciences, and his retirement — to play golf, bowls and chess — comes at the end of 18 years as Escom's chairman.

Born and bred in Vrede in the Free State, Dr Straszacker matriculated at the age of 15. He went to the University of the Witwatersrand where he graduated cum laude with a B Sc in mechanical engineering.

He then read for his M Sc at Wits before going on to the University of Charlottenburg, Germany, in 1931, where he obtained a doctorate in mechanical engineering, graduating summa cum laude.

On his return to South Africa, Dr Straszacker established the faculty of engineering at Stellenbosch, and was dean of the faculty.

He is one of few men in South Africa to be granted honorary doctorates from Wits, Stellenbosch — and Rand Afrikaans University, where he is presently chairman.

He also served on the decimalisation committee, and chaired the Straszacker Committee which examined the training of mechanical engineers.

He served on the Escom Commisssion from 1952 to 1962, when he became chairman of the board.

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Regarding the solutions proposed, some commentators call for partial reinstatement of direct charges to consumers, notably for hospitalisation which has proved the single most inflationary cost component, and for a type of means test. But this is not widely proposed. In fact, patients' cost shares and threshold prices, or co... the

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Fuel boost may mean R1 000-m a year industry

STAR 8/2/80

By Jaap Boekkool

The Government's green light for the production of alcohol fuels for road transport, announced in Parliament yesterday, could mean the start of a R1 000-million-a-year industry.

But the announcement, by Mr F W de Klerk, Minister of Energy, was also a thumbs-down to the large-scale production of petrol from maize and sugar cane or diesel oil from sunflowers.

In his carefully worded statement, in which the Government promised 4c-a-litre incentives to transport alcohol producers, Mr de Klerk showed he favoured methanol, made from coal, over ethanol, which is made from farming and waste products.

He also discouraged ethanol production on farms by saying its process might itself consume too much energy.

Mr de Klerk's announcement, which comes after years of speculation on the State's transport energy policy, highlights South Africa's own fuel problem — a surplus of petrol and shortage of diesel.

The Government is desperate to curb the growing consumption of diesel oil — mostly in new diesel cars and the increased number of tractors — and can only stretch diesel reserves by the admixture of plant alcohols, like ethanol.

Methanol, which could be produced easily from coal, does not mix with diesel oil.

But, said Mr de Klerk, he was worried that ethanol could become an expensive product because it would be affected by rising prices of fertilisers, weedkillers, farm machinery and others.

Based on projected global oil prices, and an admixture rate of up to 20 percent in road fuels, production of methanol and ethanol could be worth up to R1 000-million a year during the 1980s.

In the ... role p... inflat... hospita... old and ... contrac... and Blu... tiality ... establis... profit m... the stat... patient. However, it appears that certain trends, like the tendency towards increased hospital use by older persons, pre-dated the coming of Medicare, and that federal funding merely aggravated and impinged upon a structure already geared for cost inflation.[3]

One final query on the costs problem is whether the inflationary increases of recent years are "systems specific" or alternatively are to "be attributed to 'generic' factors, that is wider and general causes as they exist in all other countries" (Chester 1976: 81). On the basis of what is currently known, it is impossible to answer. But there have been informed guesses that concentrated financing, interpreted as a single unit of government paying the bill, assists in the containment of medical inflation; this is evidenced by the NHS experience. Paradoxically, "the 'conservative' goal of controlling inflation may be best accomplished by a greater degree of governmental centralisation than even many 'liberals' favour" (Marmor 1977: 82).

Other practical issues aired currently in the financing debate, or as byproducts of it, can be illustrated by a few examples. First, there is the possibility if not likelihood that technical considerations in formulating and implementing a rational health care policy are being negated by political processes.[4] Interest groups aim to maximise private objectives and there is no hidden hand guiding them all in the direction of communal advantage. As a corollary, it is held upon admittedly slender grounds, that a mixed public-private system is worse than pure forms of either. Second, professional monopoly worries many people within and without the medical sector, with doctors seen to behave collectively like a "price-di...ting, wealth-maximising cartel" (Culyer 1971: 70), ...they are salaried or operate on a fee-for-service ...from capitation fees.[5] Third, doubts exist ...cal care on multiple grounds. For instance, ...ocedures like over-subscription of drugs and ...efficient practices that are "needlessly ... for testing) or divert medical resources to ...alysis, cardiac by-pass surgery) from more ...isations, prenatal checkups for mothers)"; ...f omission or commission - the insurance ...ican physicians (Marmor 1977: 76).

Coming to theoretical issues of resource allocation in medical care, this is an extensive as well as thorny area of enquiry so the aim here is only to open up discussion on certain restricted themes. Could medical care, given certain preconditions, be bought and sold by principals like any other commodity? There is a minority opinion that would answer affirmatively about a suitably manipulated market.[6] Alternatively, it is the view of a wide, probably dominant segment within government, medicine and the social sciences that medical services have

Hansard No 1 col 73
8/2/80

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Sasol type plant in Natal

*2. Mr. N. B. WOOD asked the Minister of Industries:

(1) Whether his Department has in the last 12 months investigated the feasibility of establishing a Sasol type plant in Natal; if so, what were the recommendations; if not,

(2) whether he is prepared to initiate such a feasibility study; if not, why not?

The MINISTER OF INDUSTRIES:

(1) No;

(2) It should be mentioned that the total coal production of Natal presently amounts to approximately 11 million tons per year derived from 14 different coal mines. A plant of the size of Sasol II requires a coal field capable of producing 14 million tons of coal per year for more than 40 years. As far as we know, such coal deposits do not exist in the Natal Province.

common in developing countries -- vector borne and parasitic diseases, malnutrition and deficiency diseases, tuberculosis and wounds; but diseases found in developed countries [5] may require the attention of a qualified doctor. The role of the nurses in the Day Hospital should not be underestimated even though they do not make any final diagnosis or prescribe medicines. They are able to reduce the workload of doctors considerably. However, it might be possible for nurses to direct patients either to a nurse physician or a doctor for diagnosis and prescription, depending on the type of ailment.
Nurse physicians are an expensive substitute for nurses and so can only be seen as a substitute for doctors. While the employment of these

If the conclusion is that the Day Hospital concept, staffed by a team of doctors, nurses and paramedical staff, providing professional treatment including X-rays, physiotherapy, social work, is applicable to the Cape Peninsula, then the scope for the use of nurse physicians is limited. If the whole system of decentralised medical care is inappropriate, and if a simpler service at a decentralised level is the preferred alternative, then nurse physicians can be usefully substituted for doctors. The means cannot be discussed separately from the goals. The goals can only be assessed in the light of detailed information on the types of disease treated. [6]

Also of concern is the question why the demand ('need') for medical care in the Cape Peninsula is such that at least six Provincial hospital outpatient departments and sixteen Day Hospitals are currently operating at capacity. It may be due to "Say's law" or social introgenesis or a variety of other factors. It is not clear whether longer

queues at the Day Hospitals would reduce the 'need' for professional treatment, or whether fees should be raised to limit the number of patients. This is essentially an ethical question.

The need for the integration of curative and preventive health services in South Africa is well documented [7] and will not be considered further here. In the future, following the Health Act of 1977, all new facilities will be co-ordinated by the Provincial Administration.

1) See Feldstein, P.57ff

developing -- tuberculosi[illegible] mortality, vector borne and parasitic diseases, malnutrition;

developed -- heart disease, lung cancer, hypertension, diabetes.

6) And, as mentioned, I cannot do this.

7) See Trengove Jones
J. Matheson "The Economics of Health in S.A. -- A Survey" Economics Honours Thesis UCT (1977)

Cabinet approval for plant fuels

ROM (55) 8/2/80 80

CAPE TOWN. — The Minister of Environmental Planning and Energy, Mr F W de Klerk, yesterday disclosed comprehensive and far-reaching Cabinet decisions on the future use of alcohols and fuels derived from agricultural products and other indigenous raw materials.

The Minister said in a statement in Cape Town that one of the conclusions reached by the Cabinet was that under present circumstances the goal might be set to reach a maximum contribution of between 15% and 20% of South Africa's fuel requirements from alcohols and vegetable oils.

The role that alcohols could play in the country's supply of liquid fuels was an aspect which could not be ignored.

The Cabinet's decisions resulted from intensive studies by the Energy Policy Committee in the light of the increased prices of crude oil.

Mr De Klerk said in the statement: "In the light of the facts that we are well endowed with coal; that low-grade coals which are generally unsuitable for other purposes lend themselves to liquifaction and conversion to motor fuel; that we have made considerable progress in the technology of gasification and liquifaction and are world leaders with their practical applications — the question can be asked whether we should even consider moving outside these available and known fields in our search for greater reduction or even total elimination of our dependence on imported crude oil.

"The products which are essential to sustain the transportation sector as it is today are petrol, diesel and jet fuels.

"In a century of startling technological advance, doors should not be closed to exclude new inventions, technologies and applications which are at present unknown.

"The possibility of the construction of new Sasols or other liquifaction plants of a similar nature should be placed in the right perspective in the light of the country's total capacity.

"The development of additional Sasol projects by Sasol is, of course, possible if our raw materials and proven technology were the only factors involved.

"Raw materials and technology are, however, only two aspects in the process of consideration.

"Economic and manpower considerations may be the deciding factors," said Mr De Klerk.

Private Sasols dalk gou hier

Rapport 10/2/80

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SUID-AFRIKA gaan moontlik binnekort 'n vierde Sasolkompleks kry — die eerste van sy soort wat deur private inisiatief aangepak gaan word — wat die land grootliks onafhanklik van ingevoerde olie gaan maak.

Na verneem word, sal die nuwe aanleg meer as R2 000 miljoen kos en sal die projek moontlik nog vanjaar deur die Eerste Minister, mnr. P.W. Botha, in die Parlement aangekondig word.

Kenners sê vandeesweek se aankondiging van die Minister van Omgewingsbeplanning en Energie, mnr. F.W. de Klerk, dat alkohole — etanol en metanol — met regeringsteun as alternatiewe brandstof vervaardig kan word, is maar net die voorloper om Suid-Afrika heeltemal onafhanklik van ingevoerde olie te maak.

Die nuwe aanleg vir die vervaardiging van brandstof uit steenkool sal by General Mining se unieke steenkoolveld in die Noord-Transvaal onderneem word. Die maatskappye wat regstreeks hierby betrokke gaan wees, is General Mining en Sentrachem en na verwagting sal die brandstof, wat vermeng gaan word met etanol, wat deur Sentrachem se National Alcohol Corporation vervaardig gaan word, deur Trek Petroleum bemark word.

Die vermoede oor die bou van nog 'n Sasolkompleks is vandeesweek ook versterk deur die aankondiging van Minister de Klerk dat die bou van verdere Sasolaanlegte deur Sasol moontlik is. Hy het egter bygevoeg dat dit nie noodwendig of vanselfsprekend is dat verdere Sasol-tipe aanleë juis deur Sasol onderneem moet word nie.

General Mining se bedrywighede die afgelope tyd dui ook alles daarop dat reeds baie huiswerk gedoen is oor die moontlike oprigting van 'n aanleg vir die vervaardiging van petrol by sy steenkoolveld in die Noord-Transvaal. Hy het reeds 'n belang van 10 persent in die vergrote Sentrachem verkry en vandeesweek het hy ook sy belang in Trek-Beleggings verder uitgebrei.

Kenners sê die Regering sal moontlik baie toegewings maak om die oprigting van só 'n aanleg vir die maatskappye aantreklik te maak.

Dit is bekend dat Sentrachem die nodige tegnologie het vir die oprigting van so 'n projek en daarby kan natuurlik ook baie op Sasol se kennis gesteun word.

Die besturende direkteur van Sentrachem, mnr. Dave Marlow, het die aankondiging van die Regering oor die vervaardiging van alternatiewe brandstowwe verwelkom. Hy sê ongeveer 15 persent van Suid-Afrika se huidige brandstofbenodighede kan deur etanol vervang word. Na verwagting sal daar binnekort met die oprigting van 'n aanleg begin word, want Sentrachem het reeds 'n nuwe maatskappy National Alcohol Corporation, sowat 18 maande gelede vir die doel gestig.

Kenners sê Gen. Min. en Sentrachem sal by die Noord-Transvaalse steenkoolveld hoofsaaklik op die vervaardiging van diesel konsentreer, wat met die etanol van National Alcohol Corporation gemeng sal word. Dit is op die oomblik moontlik om selfs meer as 20 persent etanol met diesel te vermeng — iets wat vroeër as onmoontlik beskou is.

Notes:

In addition, much research at universities is funded pr[...] grants constituted only 21,5% of UCT medical research f[...]

Additional costs are: disability grants; compensati[...] industrial accidents; compe[...] for occupational disease.

In the latter category, the mines alone accounted f[...] worth R17 million for occupational diseases:

sick pay funds; unemployment [...] to workers off sick; health [...] the industrial sector.

These figures include only direct costs to government, pri[...] firms. Indirect costs: loss of productivity, inconvenie[...] can be measured in money terms would probably be far great[...] Louw (*20) estimated the cost of alcoholism and problem d[...] Western Cape alone to be R33 million, of which R14-15 mil[...] for by loss of production. Oosthuizen (*63) estimated th[...] ulcers in South Africa to be R50,8 million p.a., of which was loss of production. Thus, these direct expenditures or the main economic loss to be avoided by improved healt[...] tion. Added to this, are the unquantifiable costs of in[...] and bereavement.

McGrath (Ch.5) pointed out that health expenditure in Sou[...] kept up with the growth of GNP since 1959/60 and is now b[...] proportion of GNP for other countries with the same incom[...] is associated with a falling proportion of government exp[...] to health services. (See Ch.5, Table 4).

The overall impact of health expenditure on health status is limited, McGrath shows, by an extremely uneven allocation. The racial distribution of health expenditure (insofar as this can be judged from official statistics) is more uneven than that of either income or total consumption. 73% of Whites are covered by medical aid, but very few Blacks. There are disparities in both quality and quantity of hospital beds in relation to population. The geographical differences in population per doctor (1969:1 in the 13 largest urban areas and 23 037:1 in 'homelands' in 1970) are representative of the differences in the availability of health services by area, and this further accentuates racial and income inequalities.

Although the Day Hospitals (in the Cape Province) have been [...] light of the health centre experiment, Raine (Ch.15) points out that the comparison is tenuous: the Day Hospitals have no preventive role at present and operate with conventional staffing patterns; they treat those who attend without attempting to work directly in the community. This is the work of the district sisters organisation and health educators employed by the Cape Divisional Council.

Despite the impressive improvements in health status in the Cape cited by Smith in support of the Day Hospitals Organisation (DHO), Raine shows the difficulties in relating such benefits to the nature of health services when so many other variables are involved.

SUN. TRIB. 10/2/80

Green fuel gets go-ahead

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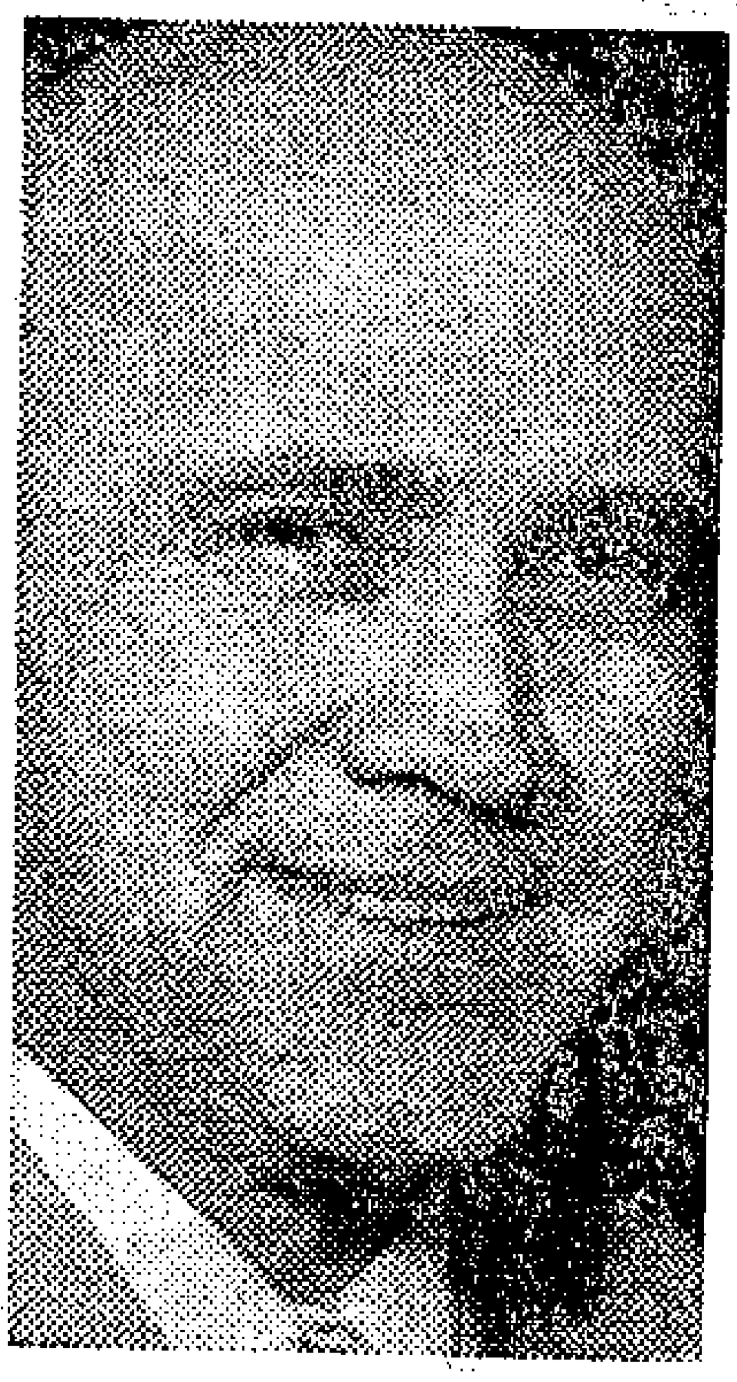

Mr F. W. de Klerk

SA could be self-sufficient

Tribune Reporter

SOUTH Africa could be on the road to self-sufficiency if the projected large-scale production of ethanol and methanol for motor fuel is successful. And jobs for thousands of people will become available.

The Government has given the go-ahead to private enterprise in the manufacture of motor fuel and is to introduce several concessions.

The Minister of Environmental Planning and Energy, Mr F. W. de Klerk, said the Government planned to provide assistance on two levels. Under general assistance makers of alcohol which can be used instead of diesel will be given exactly the same allowances on levies — such as excise duty — as those given to Sasol.

Special assistance will be given to private enterprises when the State is satisfied that this is warranted.

Ethanol is obtained by the fermentation and distillation of most organic matter. This means that South African agriculture will get a boost as it can be made from sugar-cane, timber, maize, cassava and sunflower seeds.

Methanol comes from coal and charcoal and the process is more complicated.

Mr Jessel Celine, chairman of the Motor Industries Federation, said it was unlikely that the introduction of ethanol into petrol would result in a drop of fuel price for the man on the street.

"Feasibility studies put a mixture of fuels at about 4c cheaper per litre than petrol."

The agricultural sector greeted the Government's announcement enthusiastically.

Mr Peter Hein, a retired executive of the South African Cane Growers' Association and the cane-growers' representative at numerous international sugar agreement meetings, said the production of ethanol would provide a dual outlet for farmers.

Alcohol Committee, was delighted.

"Fuel from natural resources will represent thousands of jobs from unskilled to fully skilled labour."

Tentative figures showed that from 200 000 tons of maize 80 000 tons of ethanol could be produced at a cost of R35 million a year and the cost of ethanol would be around 25c a litre.

De Klerk fires ethanol enthusiasm

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PETER BAYER and JEREMY BROOKS

NT decision to openly encourage the production fuels has aroused widespread interest in the which is awaiting details of the concessions e Minister of Energy, Mr F W de Klerk.

the giant chemical manufacturer which 18 ounced a R135-million plan for the manufacture has indicated it is set to go ahead immediately

nanaging director, Mr D J Marlow, said his ated that 15% of the country's current fuel ld be replaced with ethanol.

chem formed a subsidiary, National Alcohol the co-operation of the sugar-cane producers in wveld.

d the blending of ethanol with petrol and diesel did not present technical problems, and was already being done in the United States and Brazil.

He pointed out that South Africa's fuel problem centred around a shortage of diesel — and one of the big advantages of ethanol was that it could be blended directly with diesel, unlike methanol.

The Government's concession came at a good time for local agriculture. Maize surpluses were being exported at a loss, and the situation on the international market could deteriorate even further, making it even more difficult to to sell South African maize at good prices.

"Ethanol production from agricultural products will stimulate the local agricultural industry considerably. It will also create the possibility of establishing agriculture in the border areas and will render an important contribution towards additional job opportunities — a priority of the country," Mr Marlow said.

He said that with the Government's new approach to the production of alternative fuels from agricultural crops, the production of ethanol would hopefully become economically viable.

Alfa-Laval (Pty) Ltd, which has also taken a keen interest in ethanol production, has taken a major step in fuel economy research by agreeing to supply a pilot fermentation plant to the University of the Orange Free State.

According to Professor P M Lategan, head of the university's department of microbiology, the planned plant would be unique. It would be designed specially for the university, backed by a great deal of prior research.

"Alfa-Laval has invested in South Africa's research into the future by supplying, for the first time in South Africa, a plant of this nature," he said.

"Countries like Brazil and New Zealand are already producing ethanol commercially, and we will be in touch with industry and companies such as Saol (for protein), and Sentrachem (for fuel) so that South Africa may take its place among these countries," Prof Lategan said.

One of the advantages of the scheme was that it could ultimately create job opportunities for over 400 000 people, Prof Lategan added.

He said it was vital for his department to work with Alfa-Laval to this end.

"What is unique about the Alfa-Laval plant is that it optimises the output of ethanol or other enzymes from a raw material, resulting in a better yield from the fermentation process," Prof Lategan said.

In welcoming the Government's concessions, the Automobile Association said they could result in a drop in the fuel price by as much as 4c.

In a statement, Mr Hennie Kleynhans, PRO for the AA, said: "Coupled with the stepped-up production by Sasol of oil from coal, the country will be able to become far less dependent on crude oil once the production of supplementary and substitute fuels becomes a reality."

Private industry could also be boosted by bringing exise and other duties into line with those which apply to Sasol, the AA said.

Jaffe does not suggest means whereby care of the quality he regards as essential can be provided on a universal basis within financial limits, or problems of cross-cultural communication overcome.

4.2 OTHER PRIMARY HEALTH CARE WORKERS

Although papers on the role and training of doctors were more numerous than those relating to any other category of health workers, there was a agreement at the conference that reliance on doctors to provide pri health care - even if larger numbers were available and with a chan orientation of their training - could not fulfil the needs of under areas. Some other alternatives are presented below.

4.3 STAFFING CLINICS

Soweto clinics ceased to function during 1976 when it became imposs rely on the presence of doctors. This stimulated training and deployment of primary health care (PHC) nurses in the clinics. Wagstaff (*21) outlines a programme to evaluate the medical and social acceptability and the cost effectiveness of this system.

The nurses are trained in groups of 8 to deal with either adult or child care. The training has a practical, problem-oriented approach, and lasts as long as it takes (usually 2-4 months) for the nurses to master the skills of history-taking, examination, comprehensive patient care and counselling. The nurses deal with 80% of cases presented, referring 15%-20% to the doctor; only 5% need be referred to the hospital. Communication is improved as there is no need for an interpreter. The effects of this programme on health service structure and costs include a reallocation of roles within the health team. The doctor becomes a consultant, trainer, evaluator and monitor. Thus doctors' higher level of knowledge and training are fully utilised. Those who were interpreters perform other tasks: weighing, temperature-taking, etc. The pharmacist also assumes a controlling and supervising role as the nurse give out her own medicines; she is relieved of "counter dispensing" and there is no extra queue for the patients.

Consultations are longer - 15-20 minutes - as time is allowed for counselling on family planning, nutrition, immunisation (though this must actually be administered elsewhere), etc. Four nurses now deal with the number of patients formerly seen by one doct day each). (It is still in doubt seen can be afforded). The outc status survey of the community wi closer to the ideal of a personal than was formerly the case. The the residents, have an important are actively involved in clinic d

assistants (Pugh, *48). These are usually men, with two years education and a three-year practical course; they can give anaesthetic, suture, set bones and cope with some emergency operations. Pugh also reports that a well-trained and motivated assistant can cope with 80% of the clinical problems presented. Sapire (*61) describes the intensive course by which medical assistants are upgraded to the point where they can run a clinic in the way sisters had done previously.

Sapire cites her previous finding that the greatest obstacle to sustained family planning, especially in rural areas, was that contraceptives were not readily available. This means that medical assistants, who are well-trained in administering and advising on contraceptives, have from their village clinics made them more readily available; however lay distributors have taken this process still further (see below).

Lesotho, Swaziland and most Black rural areas in South Africa are served by clinics, increasingly on a residential rather than a mobile basis. One or two nurses staff the clinics. Training programmes for nurse clinicians are being evolved in Transkei and in Swaziland. 'Nursing assistants' are trained at the Good Shepherd Hospital for primary health care (Ntiwane *39). The pattern of clinics run by nursing staff therefore appears to be accepted practice in rural Black communities and farming areas of South Africa.

R56,8-m FOR BIG PROJECTS

Argus 12/2/80

TWO chemical plants and a giant timber factory costing a total of R56,8-million brings to almost R442-million the amount of major industrial developments announced in the past three weeks.

Sentrachem is to build a R40-million carbide plant at Newcastle, raising its investment in synthetic rubber production at Newcastle to R163-million.

The plant is due to begin by mid-year and be working by 1982.

A R12-million expansion programme to double polystyrene output is to be begun at Germiston by Stryochem, partly owned by Sentrachem.

A factory in Kwa-Zulu is to be set up by National Veneer Holdings, which is borrowing R4,8-million to develop it from the Corporation for Economic Development.

Other major developments are planned by Fedmis R17-million, National Chemical Products (R40-million), Toyota (R40-million), Blue Circle (R30-million), De Beers R130-million and Middleburg Steel R127-million.

Hesperus Holdings forecasts total dividends will exceed last year's 10,5c. Taxed profit rose 7 percent to R419 000 for the half-year and a 6c interim will be paid.

Tom Hood

SA to get fourth oil-from-coal plant

(45) Argus 13/2/80

Argus Correspondent

PRETORIA. — South Africa is to get a fourth oil - from - coal plant in a R1 000-m complex in the Springbok Flats coalfield north of Pretoria.

The scheme will be a joint venture between the giant mining group, General Mining and Sentrachem, a large chemical company.

The marketing of the diesel and petrol produced will be handled by either Trek or Total.

DETAILS

While the capacity of the plant and details of the construction are not yet available, early reports said the plant would produce diesel and petrol in a 70 percent-30 percent ratio.

The coalfield which stretches from Bophuthatswana in the west, through Warmbaths to Settlers and Zebediela in the north.

The exact siting of the complex will probably be announced today but it is known that General Mining has been taking up options of farmland in the area around Settlers and Lehau.

PROSPECTING

General Mining has been involved in intensive prospecting in the area for the last three years which led local residents to believe important developments were to take place in the region.

'Rumours that something big was about to take place near Warmbaths have been doing the rounds for a long time now,' a prominent local resident said today.

'General Mining has taken options on farmland in practically the whole of the Springbok Flats and we have been anticipating an announcement on their research.

'If such a fuel-from-coal plant is built near Warmbaths it will mean a mini-boom for the region,' the resident said.

Monis factory in Bellville South
of their fellow workers were
because all five were members of
te for better pay and hours of
director of the factory says
unreasonable and would lead to

& Canning Workers Union), say
the union rights to negotiate
negotiate with the union. It
: it was part of a cut-back of

than half of the men who were on
f the threat of being endorsed
standing firm with their 'Coloured'
trike, men from the Department
can workers who had gathered
separated. One said, "We were all

the striking workers are increasing. At a solidarity
university and college students from U.W.C., Hewat,
ge and Bellville Technical College called for workers to
a boycott of Fattis & Monis products.

The Western Province Traders Association says it will instruct its members not to sell the factory's products unless there is negotiation.

The South African Council of Sport (SACOS) has called on all sports bodies and schools affiliated to SACOS to support a call for re-employment of the workers and a boycott of the factory's products.

More than 400 students from the University of Cape Town held a meeting and called for a boycott of all Fattis and Monis products.

The Women for Peace movement has called on the factory to negotiate with the workers.

The Cape branch of Nafcoc - the National African Federated Chamber of Commerce - has issued a statement in support of the dismissed workers.

Fattis and Monis insist that there is "no dispute". However a director of the firm says he is worried about calls for a boycott of the factory's products by blacks because much of the factory's trade is with blacks. The management have kept production going by employing scab workers in the place of the striking workers. However production has slowed down.

Who are Fattis and Monis? Fattis and Monis is the factory which produces the following products: The following Record flours; Self-raising flour, Cake flour, Bread flour, Sifted flour, Unsiftes flour, Wheatie Treat flour; Philadelphia flour; Koeberg Mille pack - mealie meal; all products with the Fattis & Monis brand name. These include icecream cones, cake cups, wafers, macaroni, spagetti, large and small shells, pasta ribbons - broa d, narrow, plain and green, pain rings, dilatines. Fattis and Monis also pack their pasta products under the following brand names; Princess, Pot o' Gold, Pick 'n Pay no name brand, Ckeckers and Roma. Fattis & Monis also control a number of bakeries in the Cape Town area. These include the Good Hope Bakery in Elsies River, Wrench Town Bakery in Observatory and the Ultra Bakery in Somerset West.

R1000-m plan for fourth fuel-from-coal plant

13/2/86 Star

Own Correspondent

South Africa is to get a fourth fuel-from-coal plant in a R1 000-million complex in the Springbok Flats coalfield north of Pretoria.

Plans for the complex, which will further reduce the country's dependence on imported fuels, were to be revealed at a Press conference in Johannesburg today.

The scheme will be a joint venture between the giant mining group, General Mining and Sentrachem, a large chemical company.

The marketing of diesel and petrol produced will be handled by Trek or Total.

The capacity of the plant and details of construction are not yet available, but early reports in Pretoria said the plant would produce diesel and petrol in a 70 percent/30 percent ratio.

The coalfield stretches from Bophuthatswana in the west, through Warmbaths to Settlers and Zebediel in the north.

The exact siting of the complex will probably be announced today but it is known that General Mining has been taking up options of farmland in the area around Settlers and Lehau.

General Mining has been involved in intensive prospecting in the area for the last three years, which led local residents to believe developments were to take place.

13/11/80

Star

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Govt move on fuel is crisis step

Why has the Government decided to help production of substitute fuels such as methanol and ethanol? Motor Editor, HARVEY THOMAS, sketches the background.

The Government has finally taken steps to overcome one of the most worrying aspects of the fuel crisis — the imbalance in demand for petrol and diesel.

The Minister of Mines and of Environmental Planning and Energy, Mr F W de Klerk has announced a broad programme of official support for the local production of methanol and ethanol.

Methanol is a fuel derived from alcohol gas. Ethanol is made from biomass, ie plants such as sugar cane.

Mr de Klerk said that he saw methanol as "a stronger possible alternative fuel" but he has left the door wide open to prospective ethanol entrepreneurs. The reason is that ethanol blends with petrol or diesel. Methanol, at today's technological levels, is compatible with only petrol.

The problem perplexing Government planners is that demand for diesel in the past seven years has raced ahead by as much as 25 percent while demand for petrol (because of the effects of conserva-

unpopular move with farmers who account for between 25 percent and 28 percent of consumption and commerce and industry which takes nearly all the rest.

- It could follow a lead initiated in some of the states in the USA where tractor and truck engines of a smaller capacity are not permitted to use diesel fuel. This would have encouraged the greater utilisation of petrol and eased the strain on diesel.

- Or it could try and supplement diesel production through improved production of alternative fuels such as ethanol.

Mr de Klerk has come out with a programme that provides incentives for both methanol and ethanol production, promises to remove contradictory existing legislation and sets a goal of a 15 to 20 percent contribution towards South Africa's liquid fuel requirements from both substitutes.

But before it can make a significant contribution the South African motor industry will have to prove itself capable of taking maximum advan-

Lectures arranged on class problems with children

Hansard 2Q Col 64 13/2/80 55

Nuclear Non-proliferation Treaty

*3. Mr. N. B. WOOD asked the Minister of Foreign Affairs:

Whether a decision has been taken in regard to the signing of the Nuclear Non-proliferation Treaty; if so, what decision; if not, when is it expected that a decision will be taken?

†The MINISTER OF FOREIGN AFFAIRS:

No. The matter is still under consideration.

Mr. N. B. WOOD: Mr. Speaker, arising out of the reply given by the hon. the Minister, would it not perhaps stop damaging rumours against South Africa if we were to sign the treaty?

The MINISTER: Mr. Speaker, one cannot act against the interests of South Africa merely for the sake of trying to stop rumours.

Hansard 2 (52) 13/2/80

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Koeberg nuclear power station

*15. Mr. L. F. A. DE VILLIERS asked the Minister of Mines:

(1) Whether South Africa is party to any international agreement governing safeguard measures to be applied to the operation and/or fuel management of the Koeberg nuclear power station; if so,

(2) whether any contract has been entered into for the reprocessing of radio-active spent fuel elements from the Koeberg reactors; if so,

(3) (a) who are the parties to the contract and (b) which of them will be responsible for the safeguarding of plutonium removed from the spent fuel elements;

(4) whether in terms of the contract or any other agreement provision has been made for the return to South Africa of (a) reprocessed fuel elements and (b) irradiated waste extracted from the spent fuel elements; if so,

(5) what provision has been made for the safe storage or disposal in South Africa of these materials?

The MINISTER OF MINES:

(1) Yes, with the International Atomic Energy Agency.

(2) No.

(3) (a) and (3)(b): fall away.

(4) (a) and (4)(b): fall away.

(5) The Atomic Energy Board in collaboration with the Electricity Supply Commission is at present engaged in an investigation regarding the storage of radio-active waste in South Africa. No decision on this has yet been made.

4 1980 7

QUESTIONS AND ANSWERS

Star 14/2/80

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The Atomic Energy Board, in collaboration with Escom, is investigating the storage of radioactive waste in South Africa, the Minister of Mines, Mr F W de Klerk, told the Assembly.

Answering questions put to him by Mr I F A de Villiers (PFP, Constantia), he said South Africa had an agreement with the International Atomic Energy Agency on safeguard measures to be applied to the operation and fuel management of the Koeberg nuclear power station.

Oil from coal plant to cost R400 m

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The chemical giant AECI plans to spend R400-million over the next three years on a new methanol from coal plant.

Once commissioned, the plant should produce methanol — an alternative fuel — at the rate of 800 000 tons a year.

AECI has been producing methanol from coal for the past 24 years. Its Modderfontein plant is at the moment producing 40 000 litres a day. This is the only methanol from coal plant in the world.

Methanol's most important uses at the moment are in the production of formaldehyde, which is used in the manufacturing of synthetic resins for the furniture industry and as an additive to the fuel in racing cars and some times aeroplanes.

FUEL NEEDS

Mr Denys Mason, AECI's managing director, says the coal route is the logical one to follow in the country's way to self sufficiency in its fuel needs.

The way the world oil prices are galloping, and the political hostility which South Africa faces in some international markets, gives an urgency to multimillion-rand plans by South Africa to find alternative energy sources.

Besides the R400 million AECI plan, the mining house Anglovaal today confirmed that it was experimenting with methanol-driven trucks.

VIABLE

No figure has been put on Anglovaal's plan, but it is understood to run into [illegible]. The [illegible] there has a large coal field which has not been fully exploited, and it must be assumed if its experiments prove viable and successful, they will go ahead with the development of new energy sources in a big way.

General Mining-Sentrachem is also doing research into a multi-million rand programme to manufacture synthetic fuel, and Sasol — the country's original oil-from-coal plant — is rapidly increasing capacity.

Sasol welcomes Genmin fuel plan

Argus 5/2/80

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SASOL today welcomed General Mining's announcement that it and Sentrachem are to build an oil-from-coal plant on the Springbok flats in the Northern Transvaal.

'All active steps to increase production of motor fuels from indigenous sources and thereby further reduce the country's dependence on imported crude oil must be welcomed,' a Sasol spokesman said.

General Mining announced on Wednesday that it was to build a R1 000-million complex which would produce on a ratio of 70 percent diesel and 30 percent petrol, although the volume production figure had not yet been released.

'Most of South Africa's coal resources are of a relatively low grade with a high ash content,' the spokesman said. 'The technique of direct liquefaction which as yet has not been commercially proven — as emphasised by General Mining — can be successfully applied only with certain types of coal, mainly coal of a relatively high quality.

'The coal in the Springbok flats, which General Mining has in mind, appears to fall in this category.

Hansard 2 Ques. Col 94
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Commission of Inquiry into the Coal Resources of the Republic of South Africa

*18. Mr. I. F. A. DE VILLIERS asked the Minister of Mines:

Whether his Department has made an estimate of the Republic's coal resources and reserves since the publication of the report of the Commission of Inquiry into the Coal Resources of the Republic of South Africa; if so, what are the estimates?

The MINISTER OF MINES:

The Department of Mines is still busy with a re-estimate of the Republic's coal resources and reserves and the figures are therefore not yet available.

ALTERNATIVE ENERGY 55

210

Not enough yeast

FM 15 12\80

The recent series of concessions by government to promote ethanol (ethyl alcohol) production, while commendable, do not go nearly far enough to get a large-scale programme off the ground. That's the opinion of several well-informed sources close to the chemical industry.

Energy Minister Frederik de Klerk's announcement actually leaves vital questions unanswered. In effect, government is offering a modest excise concession (4c/ℓ), with other less important concessions of a technical nature.

Most significantly, nothing has yet been said to provide for adequate marketing arrangements for crop-derived ethanol. Without some form of on-going contract with the oil companies to buy the ethanol for blending into their motor fuel, no concern can seriously contemplate large capital expenditure on an alcohol programme. Similarly, any concern planning ethanol production would have to offer a continuing market to farmers (white or black) to induce them to produce specifically for this purpose.

It is too easy to dismiss this sort of criticism on the grounds that the new trend towards free market economics entitles the government to hand over responsibility to the private sector. This criticism might be valid if there were already a free market in motor fuels — an entirely hypothetical state of affairs when government, in fact, exerts a strong hold on the liquid fuel market through heavy excise duty and in other ways.

Government's suggestion that the excise concession will put alcohol producers on an equal footing with Sasol has also attracted criticism. Until potential investors are informed of Sasol's precise position regarding excise obligations, we cannot evaluate the significance of the concession to alcohol producers.

Criticism has also been directed against what is regarded as Sasol's privileged position in formulating energy policy (as a member of the Energy Policy Committee). The suggestion is also made that Sasol might be reluctant to see an additional alcohol producer on stream, as Sasol itself could have a marketing problem — with substantial quantities of by-product alcohol which it is currently obliged to blend into its petrol.

Sasol's Joe Stegmann vehemently repudiates all this criticism. He says that Sasol "takes exception to anonymous allegations that it does not support a responsible programme of encouraging the further production of indigenous fuels. Sasol totally supports government's announced programme for producing alternative fuels from indigenous sources, and therefore obviously also supports the recommendations made by the Energy Policy Committee to government.

"Sasol is all in favour of the production of alternative fuels (particularly to replace diesel), whether produced from mineral or other sources, provided the incentives are based on the most economical alternatives. No particular product or raw material should, therefore, enjoy any special tax or other advantage."

It's only fair to acknowledge, too, that any large-scale ethanol programme would face complex obstacles. The recent very sharp rise in the world sugar price illustrates only one. Nine months ago, the sugar industry regarded an ethanol programme as a life-jacket in a depressed market. Now, it would be an irrelevancy, unless the alcohol producers could (implausibly) match world prices.

This type of influence argues for an alcohol programme based on crops, like cassava, which would be grown only for such a purpose and not for food crops which enjoy alternative markets.

Another important aspect is the extent to which the black homelands, as well as independent black states, could be roped in to supply the crops for conversion to ethanol: potential alcohol producers have long argued that the impact of cash crops on homeland development would be so beneficial that major excise concessions would have a political pay-off, as well as a benefit for fuel self-sufficiency.

WORLD OIL

(55)

Market under fire

FM 15/2/80

Recent hopes of introducing direct curbs on oil trading on the volatile Rotterdam spot market are not likely to eventuate, report London sources. But 1980 could well witness the establishment in London of futures markets for crude oil and the various grades of distillate. This move would hopefully result in ironing out the wild fluctuations recently characterising the Rotterdam market.

Many western governments, including the British, have become unhappy about the volatility of Rotterdam prices, which reflect less than 4% of world oil and petroleum product turnover. The critics complain that high spot prices always seem to promote higher Opec prices, whereas lower spot prices never result in declines.

This resentment gave birth to the idea of abolishing the Rotterdam market — an inspiration to be compared with treating a fever by breaking the thermometer.

But it is now conceded that any form of concerted action to discourage trading in spot crude is most unlikely, and official thinking has been diverted to the more workable idea of futures trading. As pointed out to the *FM* by a British government spokesman, Rotterdam is "an international market utilised increasingly by some major producers including Iran and Iraq."

To attempt to limit trading could, therefore, have severe political repercussions, whereas the UK government is anxious to see "stabilised world oil trading."

SA can afford to watch this sort of agonising with amusement. Viewed dispassionately, Opec's listed oil price keep going up because its members comprise a cartel able to restrict output (even if informally) whenever it becomes necessary to do so in the face of temporarily reduced demand.

Until the recent upheavals in world oil, the main function of the Rotterdam market was to match odd lots of oil and refined products for buyers and sellers. This indispensible function would simply have to be carried out somewhere else if Rotterdam were closed. And Rotterdam evolved as the location for the spot market because of its status as Europe's main oil port.

More recently, though, Rotterdam undoubtedly acquired another function — that of "laundering" oil tainted with political restrictions. This oil emanates from producers like Iran or Nigeria, which forbid its sale to countries like Israel. Oil importers in this disadvantageous position are obliged to buy the oil through middlemen on the Rotterdam market, but at the price of a hefty premium. The only real effects are that the boycotted parties have to pay more, while political appearances are preserved.

With enormous financial incentives involved, it must be inferred that the same type of trading would pop up elsewhere, if suppressed in Rotterdam.

Without reliance on emotive and political arguments, though, it is possible to make a rational case for a futures market in oil products. A futures market enables ultimate users to hedge against anticipated price fluctuations by buying a futures contract in advance. Promoters of the futures market hope that hedging would damp the wild movements of spot oil prices, but acknowledge their case is not watertight.

One problem, in present conditions of unstable currencies, is that an oil futures market could only too easily become another medium for profitable speculation in real assets. There is also the risk that spot and futures markets could get out of phase with each other, so that a hedging contract could still leave an end-user with a

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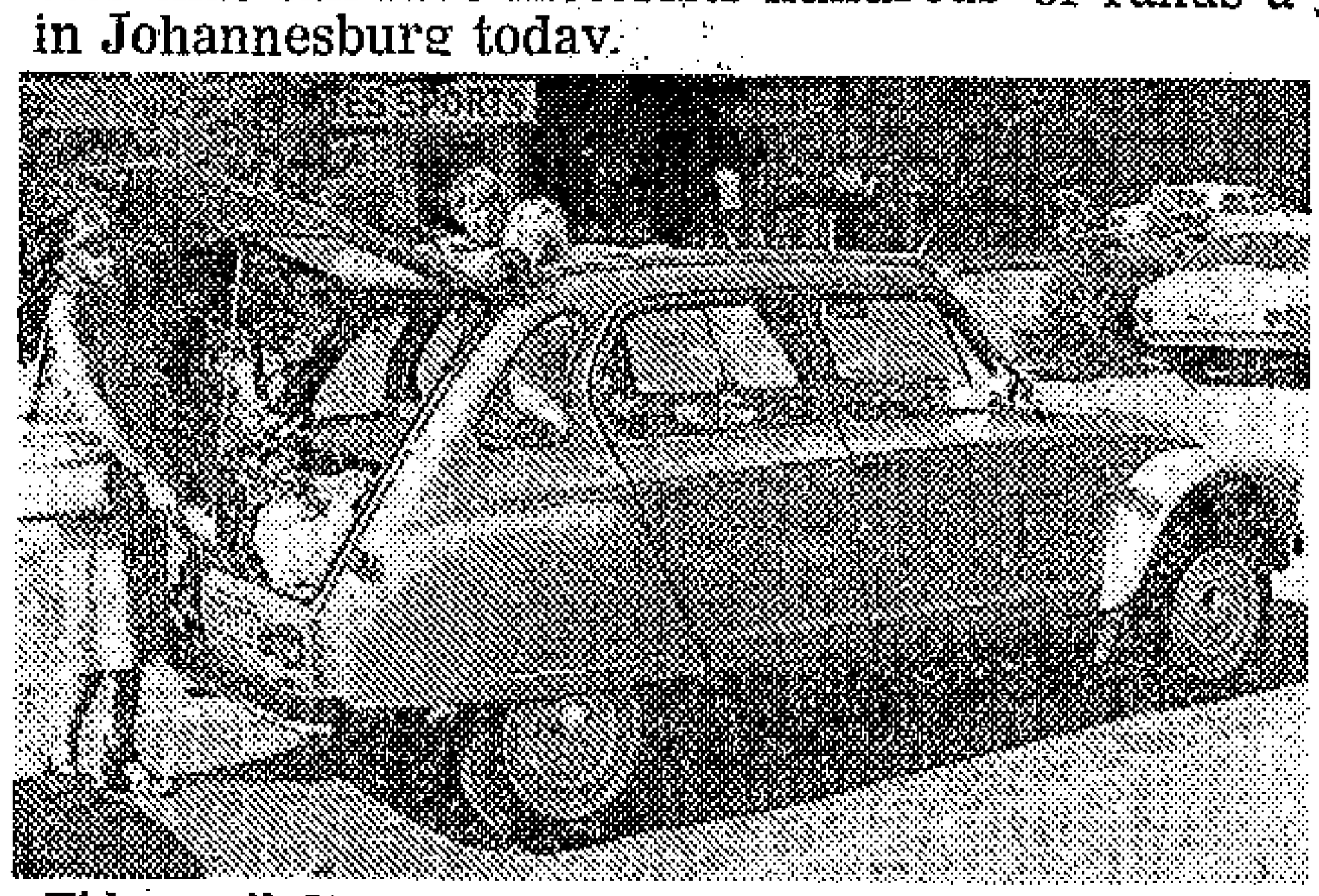
Firm fights to market fuel-saving smaller cars

13/2/80 STAR

By Harvey Thomas

Plans to introduce a new range of more lightweight and fuel efficient vehicles that can save motorists hundreds of rands a year are to be announced in Johannesburg today.



This small Citroen is what Sigma terms a "lightweight fuel-efficient vehicle" (LFEV) which, they say, would be about R600 cheaper than the least expensive cars now available, and would save between one and two litres/100 km in city driving.

These "LFEVs" would be R600 to R700 cheaper than the average of the least expensive small cars now available in South Africa.

They would use between one litre/100 km and two litres/100 km less in city driving than one of the most economical.

Sigma is already involved in a row with other motor industry members about the LFEVs and seems to be on a collision course with the Government's local-content programme because of its formula for the "expedient introduction of these vehicles."

EXPERT

A top international motoring expert, Dr Werner Schmidt, international sales director of the Volkswagenwerk in Germany, has also warned that more fuel efficient cars will be necessary — although VW does not see eye to eye with Sigma about the precise type of vehicle needed.

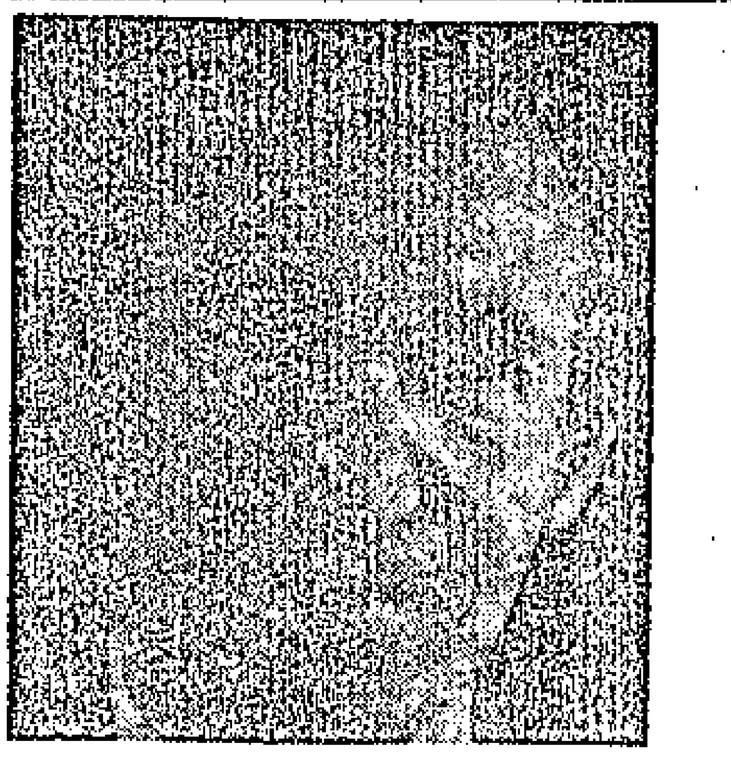
Dr Schmidt said at Sun City yesterday that VW's research had convinced the company that, at least for the remainder of the century, there was no viable alternative to car engines burning petrol, diesel and/or methanol/ethanol.

Sigma will tell a national Press conference on the Rand today that these vehicles could immediately make a saving of about R200-million a year in South Africa's imported oil bill.

At the 54,2c price of petrol they would save owners between R100 and R200 a year, "but the real saving would come when *the price of fuel goes through the roof.*"

Rapport 17/2/80 55 ~~54~~

Hersov praat oor Anglo-Vaal se metanol



NA aanleiding van die Regering se onlangse aankondiging oor die private sektor se rol in die vervaardiging van alternatiewe brandstofsoorte, het BEN TEMKIN met die voorsitter van Anglovaal, MNR. BASIL HERSOV, links, gaan gesels. Hier volg sy onderhoud in die styl van vraag en antwoord.

VRAAG: Na verneem word, ondersteun Anglovaal die Instituut vir Energienavorsing aan die Universiteit van Kaapstad onder die direkteurskap van prof. Dick Dutkiewicz.

ANTWOORD: Dit is so. 'n Rukkie gelede het ons organisasie besluit dat dit die plig is van instansies soos dié van ons om oplossings te help soek vir die probleme wat Suid-Afrika in die gesig staar weens die energiekrisis.

Uit die beperkte inligting wat beskikbaar is, het dit geblyk dat Suid-Afrika 'n ernstige wanbalans tussen die voorsiening en die verbruik van diesel en petrol ondervind het, en steeds ondervind. Daar is selfs berig dat Suid-Afrika petrol uitgevoer het. Die klaarblyke gebied waarop toegespits moes word, was die inheemse voorsiening van vloeistofbrandstowwe, maar veral diesel omdat dié se brandstofsisteem soveel meer doeltreffend as dié van petrol is.

Die vraag was hoe om ten beste te help sover dit diesel betref. Daar was twee moontlikhede: Om na 'n plaasvervanger vir diesel te soek, óf vir iets wat diesel se verbruik sou verleng. Albei roetes het na metanol en etanol gelei.

V: Het Anglovaal toe vir prof. Dutkiewicz genader?

A: Ja, ons was bewus van sy instituut se werk, en ons het hom gevra of daar enige manier was waarop ons bystand kon verleen. Ander instansies het in die verlede bydraes tot die instituut gemaak, maar hy wou die omvang van sy laboratoriumwerk grootskaals uitbrei. Hy wou veldwerk doen soos die omskakeling van dieselenjins tot tweeledige brandstofsisteemenjins òf tot vonkontbrandingseenhede van hoë druk. En hulle deur die land op, òf diesel en metanol òf suiwer metanol laat loop. So 'n program vereis natuurlik hoë kostes, maar ná 'n volle ondersoek het ons besluit om dit as deel van ons groter uitbreidingsplanne te finansier.

V: Wil u miskien sê hoeveel u maatskappy se bydrae was?

A: Nee, maar dit het ses syfers beloop.

V: Dit word gesê dat prof. Dutkiewicz se program aanvanklik met etanol en metanol gewerk het, maar dat die program hom nou toespits op metanol. Waarom?

A: Ons het uitgebreide steenkoolneerslae in die Transvaal en ons sal dit natuurlik wil benut.

Eers het ons die moontlikheid van uitvoere ondersoek, maar ons kon tot nou toe nog nie 'n aandeel in die kapasiteit van die Richardsbaai-spoorlyn verkry nie.

Daarná het ons die plaaslike steenkoolmark ondersoek, maar stygende koste en die beperking van vasgestelde pryse op die plaaslike mark, het die ontginning van die neerslae op ekonomiese grondslag gekniehalter.

Ons het dus ander moontlikhede ondersoek, en die moontlikheid om hierdie steenkool in metanol te omskep was een van hulle.

V: Watter vordering het prof. Dutkiewicz sover met sy eksperimente gemaak?

A: Sy span het binnenshuise toetse uitgevoer op enjins wat hulle omskep het om, óf op suiwer metanol, óf op 'n tweeledige brandstofsisteem van metanol en diesel te loop.

Daar was natuurlik aanvanklike probleme wat egter geleidelik oorkom is, maar binnekort was daar 'n vragwa met 'n enjin wat omskep is wat dwarsdeur die land gery het. Die enjin loop op 'n tweeledige brandstofsisteem van metanol en diesel.

'n Tweede vragwa, wat met dieselde soort brandstofsisteem toegerus is, het al by die eerste aangesluit, en binnekort sal 'n derde by hierdie twee aansluit. Laasgenoemde sal omskep wees om op suiwer metanol te loop. Die eerste vragwa het al 9 000 km afgelê, en hoewel daar baie probleme opgeduik het, verskaf dit baie antwoorde aan die span se vrae.

Terloops, die vragwaens behoort nie aan ons nie. Hulle is die eiendom van Unity Longhauls, en ons hoop dat 'n ander karweier ook by die projek sal aansluit.

V: Waar kry julle die metanolbrandstof om die voertuie aan te dryf?

A: Op die oomblik kry ons dit van 'n plaaslike chemiese firma, maar ons sal waarskynlik toekomstige behoeftes invoer.

V: Waarom invoer?

A: Net omdat die plaaslike prys so geweldig gestyg het dat dit goedkoper sal wees om dit in te voer.

V: Indien u daaraan dink om 'n aanleg op te rig wat metanol uit steenkool sal haal, beskou u nie so 'n veld ietwat vreemd vir u groep om in te belê nie?

A: 'n Aanleg wat metanol uit steenkool vervaardig sal eintlik nie vreemd vir Anglovaal wees nie.

Een van ons vroegste maatskappye was die SA Torbanite Mining & Refining Company, waarvan die naam Satmar afgelei is. Hierdie maatskappy het torbaniet gemyn — 'n oliedraende skalie — in die 1930's in die Ermelo-distrik. Ons het dit gesuiwer en na ons raffinadery by Boksburg gebring — een van die eerste op die Afrika-vasteland — waar dit verwerk is tot petroleumspiritus en ander bykomende produkte.

Ons het suksesvol met hierdie werksaamhede voortgegaan totdat die olie-skalie in 1959 opgeraak het. Die raffinadery het egter voortgegaan om ingevoerde ru-olie te verwerk totdat dit in 1976 gesluit is.

Reeds in 1936 het Anglovaal hierdie aktiwiteite opgevolg deur die alleenreg in Suid-Afrika te verkry vir die Duitse Fischer-Tropsch-proses. Dit is die proses vir die sintese van koolwaterstowwe. Laegraadse steenkool is gebruik as bron vir die koolstof. Ons chemiese ingenieurs het deeglike ondersoek na die proses ingestel, en hoewel die oorlog hierdie ondersoek effens vertraag het, het hulle 'n aansienlike hoeveelheid toetse voltooi.

Dit was natuurlik hoogs ingewikkelde werk, en dit was eers in 1947 dat Anglovaal vir 'n lisensie aansoek gedoen het om 'n aanleg vir die verwerking van olie uit steenkool op te rig.

Die perseel was wes van Vereeniging — waar die huidige Sasol nou staan.

Ongelukkig wou die Regering ons nie by wyse van groot staatswaarborge ondersteun nie, maar dit het egter die nasionale belang van hierdie projek raakgesien.

Nadat 'n kommissie van ondersoek na die hele aangeleentheid aangestel is, het die staat al Anglovaal se belange en kundighede uitgekoop, insluitende die regte om van die proses gebruik te maak. Toe die Sasol-aanleg tot stand gebring is, is Anglovaal aangestel as raadgewende ingenieurs om die steenkoolmyn tot produksie te bring.

Dit was dus Anglovaal wat die inisiatief geneem het en die tegniese deursettingsvermoë aan die dag gelê het om die basis te lê vir hierdie groot nasionale onderneming wat olie uit steenkool vervaardig.

V: U is besig om baie geld op hierdie projek te bestee, maar daar is geen waarborg dat u 'n wins daaruit sal toon nie. Dit kan selfs gebeur dat die Universiteit van Kaapstad se energienavorsing met bewyse kom dat metanol nie 'n tegniese aanvaarbare plaasvervanger vir diesel is nie.

A: Ja, maar ons beskou hierdie projek as navorsings- en ontwikkelingswerk. Om dit anders te stel, ons beskou dit in dieselfde lig as prospekteerwerk.

Al die mynbouhuise bestee miljoene rande op prospekteerwerk, en nege uit die tien keer is daar geen eindresultaat nie. Dit is 'n risiko wat ons almal neem.

Daar is egter 'n belangrike voordeel van prof. Dutkiewicz se werk. Dit sal vir die hele Suid-Afrika wys of dit in die landsbelang is om die tweeledige brandstofsisteem na te streef — wat òf metanol òf etanol gebruik — en òf die antwoord lê by hoëdruk-enjins wat een van die suiwer alkohole gebruik, òf selfs 'n ander alternatief soos sintetiese diesel.

Daar is ook ander gebrukke vir metanol. Hoewel die Suid-Afrikaanse mark nie 'n groot hoeveelheid produksie vir niebrandstofdoeleindes sou kon absorbeer nie, kan dit uitgevoer word vir chemiese of brandstofgebruik. Ook plastiese voermateriaal — soos by asynsuur — kan van metanol gemaak en uitgevoer word omdat die wêreldvraag daarna vinnig toeneem. Ons kan ook 'n regstreekse proses van ru-olie-uit-steenkool oorweeg.

V: Hoe beskou u die onlangse aankondiging deur die Regering oor die private sektor se aandeel in die vervaardiging van alternatiewe brandstofsoorte.

A: Dit is natuurlik baie welkom. Een punt moet egter duidelik onderstreep word. Daar is openbare menings wat die aankondiging interpreteer al sou dit voorkeur aan die vervaardiging van etanol gee. Dit is beslis nie die geval nie.

Die Kabinet het gesê dat dit nie kan toelaat dat 'n té groot persentasie van die land se vloeistofbrandsoorte uit voedselgrondstowwe vervaardig word nie. Die gevaar sou dan bestaan dat die brandstofbedryf in duie stort indien hierdie grondstowwe skielik weggeneem of uitgewis word.

Dit word ook algemeen aanvaar dat die produksiekoste van etanol aansienlik hoër as dié van metanol sal wees.

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Goud, etanol en werkloosheid

VANDEESWEEK is aangekondig dat die private sektor etlike miljoene rande gaan belê in die ontginning van goud en die vervaardiging van alternatiewe brandstowwe. Dié besluit gaan in die langtermyn 'n verdere stukrag wees vir die Suid-Afrikaanse ekonomie, wat op die oomblik mooi op dreef kom. Dit sal ook daartoe bydra dat een van ons grootste probleme, werkloosheid, aansienlik verlig word.

Na verneem word, sal die oprigting van die etanolaanlegte — glo 12 daarvan in verskeie landbougebiede — werk aan ongeveer 36 000 swart families bied. Die uitbreidingsprogram van Western Deep Levels teen 'n koste van R715 miljoen gaan bykomende werk aan ongeveer 8 000 swart en sowat 700 wit werkers verskaf. Verder sal die oprigting van aanlegte, soos dié wat deur General Mining en AECI beplan word, ook werksgeleenthede aan duisende swart en wit werkers verleen.

Al hierdie projekte is egter van 'n langtermynaard en die volle voordele daarvan sal moontlik eers oor die volgende vyf tot 10 jaar ten volle ondervind word.

Wat die korttermyn betref, word verwag dat die verligting van die werkloosheidsprobleem een van die eerste prioriteite van die Minister van Finansies, sen. Owen Horwood, in sy volgende Begroting, gaan wees. Klem sal waarskynlik veral gelê word op die uitbreiding van binnelandse produksie, asook aansienlike toegewings om die binnelandse vraag te stimuleer. Dit sal beteken dat die belastinglas aansienlik verlig sal word. Volgens Senbank se ekonome behoort belastingverligtings tot soveel as R1 000 miljoen te beloop.

Dit is baie moeilik om te bepaal wat die uitwerking van dié verligtings in die korttermyn op die land se werkloosheidsyfer, veral dié van die swart bevolking, gaan hê.

Daar is aanduidings dat 'n geringe verbetering reeds in die werkloosheidsyfer ingetree het, maar dit is nie baie groot nie. Die werkloosheidsyfer onder alle rassegroepe word op die oomblik op sowat 10 persent beraam.

Dit verteenwoordig sowat 1 miljoen persone.

Volgens die jongste ekonomiese ontwikkelingsprogram, kan die werkloosheidsyfer aansienlik verminder word indien die ekonomiese groei versnel. Die werkloosheidsyfer sal, volgens die EOP, teen 1982 18,8 persent beloop as die gemiddelde groeikoers 3,6 persent is. Wanneer die groeikoers tot 4,5 persent opgestoot word, sal dié syfer na 16,6 persent verminder en wanneer 'n groeikoers van 5 persent bereik word, sal dit daal tot 15,5 persent.

Daar moet in gedagte gehou word dat dinge sedert die opstelling van die program heelwat verander het. Die grootste enkele faktor hier, is die goudprys.

Nie alleen is die inkomste van die staat aansienlik meer nie, maar die betalingsbalans is nou só stewig dat die Regering kan toelaat dat invoer aansienlik kan styg, voordat die betalingsbalans onder druk sal kom.

Sommige ekonome vrees egter dat 'n te sterk stimulasie van die ekonomie in hierdie stadium vraaginflasie tot gevolg kan hê. Die spesiale ekonomiese raadgewer van die Minister van Finansies, dr. Gerhard de Kock, stem egter nie saam nie. Hy meen diegene wat bekommerd is oor vraaginflasie, se tydsberekening is verkeerd. Vraaginflasie is iets waaroor ons ons nie veel in die korttermyn oor hoef te bekommer nie, sê hy.

Dr. De Kock sê die hoër goudprys gee ons op die oomblik aansienlik meer beweegruimte om die verlore veld van die afgelope paar jaar in te haal. Die hoër prys is die gaping waarvoor ons so lank gewag het, en soos 'n goeie senter, sien sen. Horwood dié gaping en sal dit binne die raamwerk van „groei met dissipline" vat.

Baie nyweraars en die georganiseerde handel meen ook dit is nou die tyd om die werkloosheidsprobleem op die korttermyn te verlig. Daar is egter 'n aansienlike mate van kritiek weens die vertraging wat wetgewing, veral ten opsigte van die opleiding van swart vakmanne, tot gevolg gehad het. Hulle sê daar is op die oomblik net nie genoeg tegniese opleidingsgeriewe vir swart werkers nie. Indien geriewe nie vinniger opgerig word nie, voorsien hulle 'n opeenhoping aan opgeleide werkers wat vorentoe die ontwikkeling van die ekonomie kan vertraag.

In die komende jare sal sterk aandag aan formele sowel as informele opleiding van swart vakmanne gegee moet word, anders kan die opeenhoping só ernstig word dat baie van die voordele van die hoër goudprys verlore sal gaan, selfs al sou dit ook nóg verder styg.

Space-age plan for agriculture

5 times 17/12/80 55

By BILL CAIN

SENTRACHEM'S imminent multi-million-rand leap into a flora-based alternative fuel programme is now supported by an arresting model of exactly what may transpire.

The model was released to Business Times this week by senior general manager, Dr Robbie Robinson.

Dr Robinson goes so far as to admit that the potential size of the embryonic ethanol business borders on science fiction.

He has even coined a word — agrochemurgy — for an industry he predicts is capable of creating 800 000 new jobs and turning over R625-million annually.

Sentrachem has done a lot of homework since the energy crisis began to produce figures which, if anywhere near correct, justify its 1978 announcement committing R135-million to manufacture ethanol.

How much it now intends to spend on process plants is being kept secret until management works out exactly how far Energy Minister F W de Klerk intends to go in encouraging output to supplement fuel needs.

Dr Robinson estimates that ethanol made from plants — mainly maize, although sugarcane, sorghum and eventually Latin American cassava are also usable — could soak up 20% of present liquid fuel requirements.

Concessions

Lead time for the proposed plant-power industry — from sowing seed to topping up fuel tanks with ethanol — is a minimum two years with a crash programme.

Until Minister De Klerk spells out concessions to aspirant producers, however, no one is allowed to add alcohol to fuels without Government consent.

Dr Robinson's model for the industry requires careful digestion:

- Production modules each producing 100 000 tons of ethanol would be centred on up to 150 000 ha supplying 300 000 tons of maize.

About 3 000 farmers contracted to grow the crop would share an estimated R30-million annually with another 200-300 workers paid by the processing plant.

- High-protein by-products would go for animal feed capable of supporting 150 000 head of cattle and create another 2 000 jobs in red meat apart from dairy products.
- Waste carbon dioxide would be utilised to cultivate algae on which an estimated 100 000 tons of fish worth R20-million could be raised by another 200-300 workers.
- Supporting personnel — traders, teachers, mechanics and public servants — for each agrochemurgy complex would take the total within the ethanol process to 40 000 families.

Impact

"Imagine the impact if these agrochemurgy concepts could be replicated 20 times in different parts of the country to produce 2 000 million tons of ethanol annually.

They would create job opportunities for approximately 800 000 people and probably mean the end of malnutrition," Dr Robinson says.

He adds: "The total value of ethanol would be R625-million — let alone the value of animal feeds and other products.

An enormous market for secondary goods would also be created with an even greater catalytic effect on the economy."

Right or wrong, prospects for the new industry boil down to how much the motorist and transport industry will be asked to pay for ethanol.

Minister De Klerk is faced with an emotive as well as economic equation when putting a price on litres of mixed fuel containing varying parts of ethanol.

Unleaded 93 octane petrol containing 20% ethanol, for example, might be rated at 97 octane and suppliers would save on the lead.

With a commercial venture everyone down the line right back to the farmer has to be paid.

Sentrachem and many others are anxious to see if government gets the formula right first time.

Sasol welcomes Genmin's new oil plant

18/2/80 Star

Own Correspondent

CAPE TOWN — Sasol has welcomed General Mining's announcement that they and Sentrachem will be building another oil-from-coal plant on the Springbok Flats in the northern Transvaal.

"All active steps to increase production of motor fuels from indigenous sources and thereby further reducing the country's dependence on imported crude oil, must be welcomed, a Sasol spokesman said. Sasol welcomed the competition.

General Mining announced last week that they were to build a R1 000m complex which will produce on a 70 percent diesel and 30 percent petrol ratio though the volume production figure has not yet been released.

PILOT PLANT

"Most of South Africa's coal resources are of a relatively low grade with a high ash content," the spokesman said. The technique of direct liquefaction which as yet has not been commercially proven, as emphasised by General Mining, can only be successfully applied with certain types of coal, mainly coal of a relatively high quality.

The coal in the Springbok Flats which General Mining has in mind, appears to fall in this category.

When the direct liquefaction process has been commercially proven overseas, where demonstration plants are now being built, South Africa will be able to use an even wider range of indigenous coals for the production of motor fuels.

For this reason, Sasol has been doing development work in the field of direct liquefaction for several years and a pilot plant has been operating at Sasolburg for some time.

"All responsible steps to augment South Africa's motor fuel production must be welcomed," the spokesman said.

DD. 18/2/80

Komga man in dispute over driver's licences

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KOMGA — A Bluebend businessman and part-time farmer in Komga, has accused the Provincial Traffic Department of wasting farmers' time, money and fuel through unnecessary red tape in the issuing of driver's licences to tractor drivers.

Mr A. Wood of East London, who is farming part-time with his father, Mr A. L. G. Wood, 73, of Beaconsfield farm near Komga, said yesterday he thought the situation was ridiculous.

He said his father had two employees who had been driving tractors for him for the past 15 years. He said both men were good drivers but were completely illiterate and could only speak Xhosa.

In order to do their job it was necessary for them to cross the Divisional Council road on the farm. Recently his father was warned by the local police that it was illegal for them to do so and if caught they would have to appear in court as they did not have licences.

Mr Wood alleged that his father arranged to have the two men tested for learner's licences at Komga by the Provincial Traffic Department's circuit testing section. He said his father specifically stated that the men were illiterate and could only speak Xhosa.

When his father arrived with the two men the traffic officer noticed the men could only speak Xhosa and told his father that he would have to find an interpreter.

Mr Wood said his father offered to act as an interpreter himself as he was fluent in Xhosa but the officer said this could not be done. His father then refused to find an interpreter.

Mr Wood said that he could not understand this attitude as the traffic officer could understand Xhosa himself and so could follow the conversation.

"The Provincial traffic officers catch us if we speed and waste fuel but now my father will have to make numerous more trips and waste petrol because of this," he said.

The regional Chief Traffic Officer of the Border and Ciskei, Mr J. A. S. Cronje, said he knew about the matter. He said the officer in question was a responsible one and in fact advised Mr Wood that he could easily get an interpreter from the Komga magistrate's court but that Mr Wood was not interested.

He said it was irregular that Mr Wood himself should act as an interpreter and the officer was correct in refusing his services.

Mr Cronje said there must have been some misunderstanding because they normally send an interpreter if they knew beforehand that the applicants for a licence were illiterate.

The fact remained that it was illegal to cross a public road without a driver's licence. He said it might be an innocent thing to cross a minor road but the authorities could not turn a blind eye to it. A driver without a licence could be a danger on the road and if not controlled the situation could get out of hand.

"If we allow this sort of thing or just issue licences automatically, these people could even drive their tractors around East London," he said. — DDR.

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American congressmen have come to South Africa in droves this year to have a look at Sasol II. But, as JAAP BOEKKOOI explains, it is unlikely that Sasol will put many tigers in the world's tanks.

STAR 19/1/80 53

Sasol will find the going tough

When Sasol starts hawking its oil-from-coal franchises to other countries in earnest this year it might well often share the sigh of the detergent salesman: "Man, the competition is hell out there."

General Mining plans to turn Springbok flats coal deposits into mostly diesel oil by direct liquefaction (eliminating Sasol's huge initial gasification plant); and AECI has a three-year plan to turn out 800 000 tons of methanol, equal to some 12 percent of the country's total road fuel needs.

These first challenges from private capital perfectly illustrate how much Sasol needs competition; they fill a gap which the big, cumbersome Sasol colossus could not.

But also elsewhere in the world Sasol, though still the only commercial oil-from-coal producer, is facing growing competition, plus more and more severe criticism of its process.

Among the new challengers to Sasol's reputation is the Mobil Process, much hailed by American energy planners, which converts cheap methanol into high-octane petrol at a pilot plant cost of only 28c a litre.

Mobil is following up its pilot successes with plans for a commercial plant which aims to produce 1½ times Sasol 2's total output. The complex would cost R2 000-million against Sasol 2's near — R3 000-million.

American companies are hedging attempts to sell them Sasol licences for various other reasons.

One is that though the South African oil-from-coal technique works well here, it may not do so in the United States.

Sasol's Lurgi gasifier, for instance, has trouble handling caking coals, which form 71 percent of all America's coal mining. As these coals are dissolved into gas they tend to cake and plug up pressure vessels and cause stoppages.

Another is that pithead coal costs four times as much in the US; while petrol prices are half those in South Africa. Still another is that clean-air states would reject a Sasol plant as a major air polluter.

Now politics are creeping into the anti-Sasol arguments as well.

The American Department of Energy, which sponsors US oil-from-coal research with hundreds of millions, is letting interested US parties know that Sasol can only make profits because of low "slave" wages for blacks, especially Bosjesspruit mine workers, in its home territory.

There are three American new generation processes now vying with Sasol's formula, although they are well behind, in practical development.

All have their good and bad points. The H coal liquifaction process by hydrocarbon research, financed by the US Department of Energy and an array of oil and coal companies, has a successful pilot plant in Kentucky. It expects to build a simpler and larger plant than Sasol 2 for one-third of the capital outlay — R1 000 million — by 1985.

The EDS process, developed by Exxon Research, also claims optimistically it can build a Sasol-type works at a discount price: some R1 200-million for a yield of 60 000 barrels a day, almost the size of a Sasol 2 and Sasol 3 combined.

American scientists have called the SRC 2 process, run by the giant Gulf Oil Company, the most technically advanced, but no commercial plant is likely to see the light before the early-middle '80s.

So the world's curious will undoubtedly still beat a path to the Free State dorp where it all started, as American congressmen did last month, to court the Maiden of Sasolburg.

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Appendix 1: Comparison of Village Health Worker Programmes in Three Districts of Lesotho

(Source: Ministry of Health The Village Health Worker in Lesotho: Report of a Workshop held 26-27 March 1977. Maseru, 1977.)

TABULATION: EXISTING THREE VHW PROGRAMMES

	OUTHING	SCOTT	TEBELLONG
GOALS	To obtain optimal contact between institutional health & consumer by training VHW's	The improvement of the level of health in the villages in the Scott Hospital region	Getting people involved in their own health care
OBJECTIVES	Assist VHW in identifying: local health needs/problems solving the above. After one year VHW's provide simple curative care	To establish community based health service structure by identifying: VHW tasks, programme villages, team identification, selection of VHW's for training and followup, improvement of:	That women chosen by their own people accept certain designated responsibilities in their own villages
SELECTION OF VHW'S	By mothers a MCH Clinic Through: Chief, MO, in Charge		
NUMBER OF VHW'S	Orginally 10 out: one "Up to 120 i		

FATTIS & MONIS STRIKE

For almost a month 88 workers at the Fattis & Monis factory in Bellville Sout have been on strike. They struck because five of the fellow workers were dismissed. The workers say the dismissals were because all five were members of a trade union. The union was trying to negotiate for better pay and hours of work - R40 a week and an 8 hour working day. A director of the factory says these demands are "out of all proportion" and unreasonable and would lead to "disruption" in his firm.

Officials of the 10 000 member union (the Foc ... he dismissed men had signed a document giving th ... better conditions. The factory has refused to negoti ... men were replaced by machinery and that it was pa

Although those dismissed are 'Coloured', more African contract workers...In spite of the thi Homelands, the African workers have stood fi ... and sisters. On the first day of the strike men ... d to separate 'Coloured' & African workers who ha ... le w workers refused to be separated. One said, "V ... rpose."

Moves of solidarity with the striking workers meeting last week more than 500 university ar ... lewat, Peninsula Training College and Bellville Tech ... to be reinstated and for a boycott of Fattis & M

The Western Province Traders Association say ... t to sell the factory's products unless there i

The South African Council of Sport (SACOS) has schools affiliated to SACOS to support the cal ... rs and a boycott of the factory's products.

At a meeting at U.C.T. over 500 students suppo Fattis & Monis products.

Fattis & Monis insist that there is no 'disput ... rm says he is worried about the calls **for** a boyco blacks as much of the factory's trade is with production going by employing scab workers in However production has been slowed down.

Who are Fattis & Monis? Fattis and Monis is tl following products: All Record flour products ... e flour, Bread flour, Sifted flour, Unsifted flo products with the Fattis & Monnis brand name ir cake cups, macaroni, spagetti, large & small s narrow, plain and green, rings and dilatines; ... is under the following brand names: Pick 'n Pay, F ... nd Roma; Philadelphia flour and Koeberg Mille pack ... so control a number of Bakeries including Wrench T Good Hpe Bakery in Elsie River and Eltra Bakery

Published by Comm Comm.
Printed by S.R.C. press, U.C.T.

Claim of SA nuclear arsenal

Argus 26/8/80

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Argus Bureau

LONDON. — A new booklet — South Africa's Nuclear Capability — says South Africa could now have a small nuclear arsenal and it is possible it has been tested with an actual explosion.

The Oslo-based World Campaign against Military and Nuclear Collaboration with South Africa is publishing the booklet.

The booklet, written by Mr Dan Smith, research officer at the Department of Economics at Birbeck University, cites evidence provided by satellite surveillance of an alleged site for nuclear testing in the Kalahari in 1977, and of what appeared to be a nuclear explosion in the South Atlantic in 1979.

South Africa could already produce up to four Hiroshima-size bombs, according to Mr Smith.

The 32-page booklet says South Africa's nuclear potential would not have been possible without the co-operation of Western states.

After mentioning the possibility of tests, Mr Smith says: 'But to say this does not mean it is certain South Africa does have nuclear weapons or that it has set aside material from which to construct them. There is no definite proof on this score.

'That South Africa has a military nuclear capacity is clear.

'So far I have seen no evidence of any use for uranium enriched at the Phalaborwa pilot plant and no alternative to military uses comes easily to mind.

'If we accept that the American satellite which identified the double flash over the South Atlantic in September 1979 was functioning properly, it seems clear that a nuclear test occurred, and it is not clear what states other than South Africa might have been responsible for it.'

The anti-nuclear campaign's British group will be announcing a number of activities tomorrow which will make it much more difficult for the British Government to adopt the position which it is currently adopting in the UN Security Council, on South Africa.

Heunis blamed for role in fuel price increases

55 Star 20/2/80

Political Staff

THE ASSEMBLY — The Minister of Transport, Mr J C Heunis, faced with a R190-million increase in the Railways and Harbours Fuel Bill, came under the in the Assembly yesterday for his role in last year's big increase of levies on fuel.

Mr G S Bartlett (NRP, Amanzimtoti) said Mr Heunis was now on the receiving end of the levies which he had increased when he was the Minister of Trade and Industries.

Mr Heunis and other speakers on the Government side rejected Mr Bartlett's argument on the grounds that fuel price increases were due to factors beyond the Government's control.

The clash occurred during the second-reading debate on the Railways and Harbours Additional Appropriation Bill.

Mr Bartlett said that excluding the fuel bill, the budgeting of the railways was "pretty good."

But the Minister had to take the blame for the part he had played in raising the fuel levies.

The New Republic Party had warned at the time that the levies were too high, and since then the Government had been able to pay for foreign oil purchases without imposing fuel price hikes on the public.

"The chickens have now come home to roost," Mr Bartlett said.

Rejecting the criticism, Mr Heunis said the results of oil boycotts against South Africa had been "immense" After December 1978, attempts had to be made to get sufficient sources of oil to keep the country's economy going.

The world energy crisis was something over which nobody had any control.

Mr Heunis said he had not been responsible for the fuel price increases, as suggested by Mr Bartlett.

Industrial countries in Europe were also perturbed by the high fuel costs, and South Africa had succeeded in obtaining reasonable supplies with the least inconvenience.

South Africa had also succeeded in stabilising fuel prices and making the country less dependent on foreign suppliers.

"We should all make a contribution to the cost of making South Africa more self-sufficient," Mr Heunis said.

Moving the second reading of the Bill, Mr Heunis said the main railways budget for 1979-80 had made provision for a "moderate" increase in fuel prices.

Price adjustments in February and June last year, however, had resulted in a doubling of fuel prices for the administration.

The estimated expenditure in respect of fuel had, therefore, increased by R190-million to R415-million.

Goods traffic, however, had increased by 5,5 percent above the original estimates.

MR JUSTICE C J VAN DER WALT

Insurance covered SAA hail damage

Political Staff

THE ASSEMBLY — South African Airways had suffered no direct loss as a result of the hail damage to aircraft at Jan Smuts Airport, the Minister of Transport, Mr Heunis, said in the Assembly yesterday.

Speaking in the committee-stage debate on the Railways and Harbours Additional Appopriation Bill, Mr Heunis said SAA had a R24,5-million insurance cover which included the cost of restoration of the aircraft to their previous condition.

The direct cost was in the vicinity of R2-million. Three aircraft were still under repair.

But, Mr Heunis said, SAA did not have cover for "consequential" losses as a result of the damage.

Mr Heunis was responding to questions by Mr Alf Widman (PFP Hillbrow), who had asked him to consider the possibility of hail protection for SAA aircraft and a hailguard to be erected at the airport.

Fuel costs 'threat to tourism'

Political Staff

THE ASSEMBLY—A warning was given in the Assembly yesterday that the high cost of aircraft fuel in South Africa could seriously affect the tourist industry.

Mr R J Lorimer (PFP, Orange Grove) said South Africa's aircraft fuel was perhaps the most costly in the world.

Speaking in the second reading debate on the Railways and Harbours Additional Appropriation Bill, Mr Lorimer said there was no doubt airlines were discouraged by this when they considered the establishment of new services to this country.

Great opportunities were possibly being lost for the tourist industry.

He suggested that the Minister of Transport, Mr J C Heunis, should see whether anything could be done to provide cheaper aircraft ...

MR HEUNIS

'No return to steam trains'

Political Staff

THE ASSEMBLY — The Minister of Transport, Mr J C Heunis, yesterday rejected a call by Mr R B Durrant (Nat, Von Brandis) for possible return of the steam train to help solve the fuel shortage in the Railways.

Mr Heunis said that the steam option had been considered, but he preferred electrification. Over the years, the Railways has ...

Hansard 3 Quest 150/151

20/2/80

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Prospecting for oil

287. Mr. I. F. A. DE VILLIERS asked the Minister of Mines:

(1) What amount was spent during 1979 on prospecting for oil (a) on land and (b) at sea;

(2) whether any oil was discovered (a) on land or (b) at sea during that year; if

so, in what quantity in respect of each discovery?

The MINISTER OF MINES:

(1) (a) R0,41 million

(b) R38,56 million
Other non-allocatable expenses: R5,15 million.

(2) (a) No.

(b) Indications of oil were encountered in three of the nine boreholes drilled offshore. The most important show extended over a vertical distance of a few hundred metres, but in no case was the oil saturation sufficient to allow production at surface.
Significant indications of gas were encountered in four of the boreholes. The most important production amounted to 14 000 cubic metres of gas per day, which is uneconomical.

Hansard Questions 3 Col 129

20/2/80

Administration of matters relating to energy

*12. Mr. I. F. A. DE VILLIERS asked the Minister of Environmental Planning and Energy:

What progress has been made in co-ordinating the administration by his Department of all maters relating to energy?

The MINISTER OF ENVIRONMENTAL PLANNING AND ENERGY:

Satisfactory progress has been made in the co-ordination of energy planning aspects, which was one of the Department of Environmental Planning and Energy's primary tasks. The hon. member will be aware that with the rationalization of the Public Service all energy matters will be brought together in the new Department of Mineral and Energy Affairs.

Rationalization is a process and announcements with regard to the transfer of important energy functions will be made from time to time.

Mr. I. F. A. DE VILLIERS: Mr. Speaker, arising out of the reply given by the hon. the Minister, can he tell us whether such matters as oil procurement will in future fall within the competence of the Ministry of Energy?

The MINISTER: Mr. Speaker, I should not like to give details at this stage, but I refer the hon. member to the statement made by the hon. the Prime Minister, I think sometime in November 1979, when it was made clear that the State corporations involved in energy affairs would also come under the auspices of the new Department of Mineral and Energy Affairs.

53

SA 'already able to make N-bombs'

55 Star 20.2.80

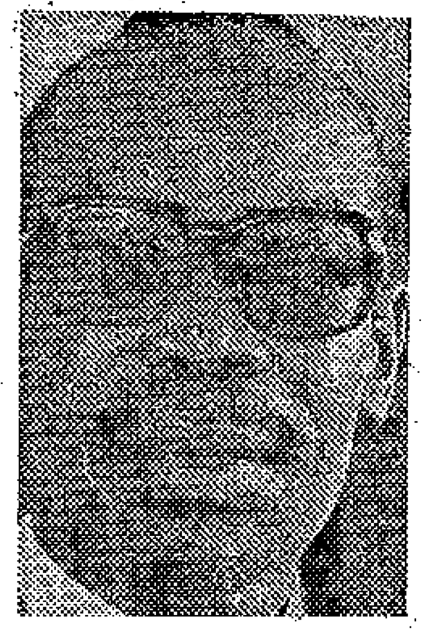
Nuclear potential is seen as an international challenge

LONDON — South Africa has a military nuclear capacity which could already produce up to four Hiroshima-size bombs, according to a British defence analyst.

The analyst, Mr Dan Smith says in a 32-page booklet, "South Africa's Nuclear Capability" published by the World Campaign against Military and Nuclear Collaboration with South Africa, that the Republic's nuclear weapons potential would not have been possible without the co-operation of Western states.

Mr Smith, a former member of the United Nations study group on disarmament and defence and Britain's Opposition Labour Party defence committee, said there was no proof that South Africa had manufactured nuclear weapons.

"But on the evidence available it is possible to reach the unambigious conclusion that South Africa could now have a small nuclear arsenal," he added.



President Khama . . . opposed to collaboration.

President Nyerere . . . patron of campaign.

'It is possible that the efficiency of its weapon design has been tested with an actual nuclear explosion.

"That South Africa has a military nuclear capacity is clear. So far I have seen no evidence of any use for uranium enriched at the Valindaba pilot plant and no alternative to military uses comes easily to mind.

"If we accept that the American satellite which identified the double flash over the south Atlantic in September 1979 was functioning properly, it seems clear that a nuclear test occurred, and it is not clear what states other than South Africa might have been responsible for it.

"Because of these two points I have to conclude that South Africa probably has at least set aside material for nuclear weapons, that it has developed and tested a weapon design, and that producing a small arsenal from its available material would be the task of a few weeks at most."

The World Campaign against Military and Nuclear Collaboration with South Africa was initiated by the Britsh-based Anti-apartheid Movement last year and its patrons include Tanzania's President Nyerere, Botswana's President Seretse Khama and Zambia's President Kenneth Kaunda.

Mr Smith listed the countries which had assisted South Africa's nuclear development as Belgium, Britain, Canada, West Germany, France, Iran, Israel, Japan, Holland, Switzerland and the United States.

South Africa, he said, had placed Western Nations in a dilemma over its military nuclear ambitions by the "politics of uncertainty" through the use of hints and contradictory statements.

"A major task in the international response to the military dimension of South African nuclear technology must be to devise a strategy to cut through this knot.

"The ambiguities and prevarication of the responses of some Western states play right into the hands of the South African use of uncertainty."

The South African regime might well believe it needed nuclear weapons and expected political advantages from possession of them, Mr Smith said.

"It might consider that the nuclear destruction of major guerilla camps and bases would be a dramatic demonstration of its determination.

"More important, the regime might expect that the threat, whether explicit or implicit, of nuclear bombardment would deter states such as Angola, Mozambique and Tanzania from aiding the guerillas." — Sapa.

LONDON — South Africa's potential for nuclear warfare constituted "a menace of alarming proportions" and presented an urgent challenge to the international community, the chairman of the United Nations Special Committee Against Apartheid, Mr Akporode Clark, said today.

In a foreword to the booklet "South Africa's Nuclear Capability," published by the World Campaign Against Military and Nuclear Collaboration with South Africa, Mr Clark demanded firm international action to stop all co-operation with the Republic in the nuclear field.

"As the elimination of colonialism from this globe draws near, and as the continent of Africa looks forward to its total emancipation after centuries of slavery and humiliation, the Pretoria regime and its friends have created the threat of a racist monster, wielding nuclear weapons in order to retard and complicate the inevitable outcome.

"The international community must urgently take firm action to dissuade the collaborators of South Africa from their dangerous gambles and to avert the menace of nuclear blackmail by the Pretoria regime.

"There must be an end to all collaboration with that regime — direct or indirect — in the nuclear field."

"The frantic efforts of the South African regime to develop its nuclear technology and installations and to acquire nuclear weapon capability constitute a menace of alarming proportions and an urgent challenge to the international community.

"It has an unparalleled record of defiance of the United Nations and of aggression against neighbouring states." — Sapa.

a great number of the sample indicated in their comments that they would have preferred these not to have been held on a Sunday. Of those that did answer questions in this section 83% felt the Workshop had been long enough and had helped them to some extent to integrate into the University as well as in choosing their degree courses.

2.6 The Course on Study Methods

A majority of the sample (69%) felt that their school methods of study were adequate at University, though less than 1% felt they were completely adequate and 18% nearly so. Yet the majority (51%) would have liked an additional lecture on "Lectures, Revision and Examinations" and on "Reading and Research"; in their comments a great many students suggested that a more practical presentation of all topics might be desirable.

As regards an on-going study methods course in the first semester, 72% of the sample stated they would find it desirable and 30% would find it very valuable indeed.

2.7 Library Instruction Course

An overwhelming majority of the sample were extremely enthusiastic about the library course and found the librarians very helpful.

2.8 Academic Advice

In indicating whose advice they had primarily sought in planning their university curriculum, the sampe indicated as follows:

New car fuel for Rand

Star 20/2/80

55

By Harvey Thomas

Plans are well advanced for the introduction of gasohol — a mixture of petrol and alcohol — at all premium petrol pumps on the Rand later this year.

The mix, 15 percent alcohol and 85 percent petrol, will gradually be phased in at premium pumps in certain "gasohol" areas around South Africa.

But the Rand is the pilot project as it accounts for between 35 percent and 40 percent of all petrol sold in the country.

South Africa will ultimately save well in excess of R150-million a year in foreign exchange as more gasohol pumps come on stream, and the move is seen as an important step in helping the country towards improved fuel self sufficiency.

Experts believe at the initial percentage of 15/85 cars will not require modifications to run properly on gasohol.

But engineers have warned that over a period minor changes to certain plastic components in the fuel system could be necessary.

Petrol has certain corrosive qualities but a blend of petrol and alcohol has a perceptibly different corrosive effect. Items that were impervious to petrol may, in the long term, be corroded by petrol-alcohol.

- Components in the carburettor jetting which are made of plastic.
- Plastic diaphragms in the fuel pump and float which provide the reading to the fuel gauge.
- Any other plastic item in the fuel line.

Certain South African motor companies, in anticipation of the switch to gasohol, have already made changes to their cars to ensure they are suitable, but engineers have emphasised that any effect on components would be gradual and that modifications are not urgently necessary.

Concerned

I understand, though, that other motor engineers are concerned that gasohol spillage at the pumps may corrode some paints used on various South African vehicles and tests are now under way.

Experts also say that at the suggested blend fuel consumption is unlikely to be altered but that if the percentage of alcohol was increased there would be a deterioration in consumption.

Gasohol will not cost more than premium petrol, now priced at 54,2c a litre. But it will cost the oil companies "enormous" sums to introduce.

I understand suppliers of alcohol will discount the price to the oil industry to ensure retail prices do not alter.

to consolidate the debts of
ers. The Land Bank also
for farm improvements such as
es, and hypothec loans on movable
h as livestock and machinery. (6)

d settlement

cultural Credit and Land Tenure
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in some cases, to rationalize the collection,

Sigma tests fuel-saving cars

RDM 20/2/80

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By LEICESTER SYMONS
Motor Editor

WITH petrol costing what it does, the acrimony between the Sigma Motor Corporation and the rest of the South African motor industry over the corporation's application for concessions under the local content rules has aroused interest in lightweight economy cars on the part of many motorists.

Sigma calls them Lightweight Fuel Efficient Vehicles — LFEVs for short. Whether that description is fully accurate or simply an astute slogan is a moot point. The opposing sides could argue it as hotly as any of the other claims and counter-claims in the dispute.

Certainly the vehicles for which Sigma wants the rules relaxed — for the benefit both of the local motor industry and the country as a whole, it claims — are lighter than those generally used here.

They are also powered by smaller engines. So they will use less petrol, at least under certain conditions.

Most vehicles complying with the mass and engine size limits proposed in Sigma's application are Japanese. This is because Japan has a special category for vehicles of under 550cc and within certain limits of length, width and height.

In Japan such vehicles pay lower taxes and licensing fees. They can also be bought without a document certifying that the would-be owner has somewhere to park them.

Among European manufacturers, Citroen in France and Fiat in Italy have found it worthwhile to build vehicles that would fit Sigma's definition, to satisfy sectors of the market created by conditions in those countries. They have also sold them in other countries.

The Citroens in this category are based on the 2CV, beloved of French farmers. The 2CV is in many ways a crude vehicle, but has many features that are both unusual and highly practical and suits its purpose admirably.

Few vistors who have driven in France to any extent, particularly on its narrower and twistier roads, will not be able to recall hair-raising encounters with 2CVs or their derivatives going about those purposes. The derivatives are generally larger, more powerful and more refined than the 2CV, but remain Spartan in many respects.

Sigma has shown four lightweight vehicles here. Two are built by Mitsubishi of Japan and two by Citroen. Both companies have affiliations with Sigma.

The Mitsubishis are passenger and pickup versions of that company's L100. The passenger version, which resembles a minimbus, is a four-seater with luggage space. It can carry two people and 450kg of goods or four people and 300kg. The pickup can carry two people and 550kg.

The Mitsubishi lightweight passenger vehicle which Sigma has been testing.

Both are powered by two cylinder, in line, water-cooled overhead cam engines — much like the familiar Colt engine cut in half — of 546cc and developing 21,5kW at 5 500r/min.

The engine is mounted under the front seats and drives the rearwheels through a four-speed, fully synchromesh gearbox. There are drum brakes on all wheels, independent front and coventional leaf spring rear suspension and rack and pinion steering.

Top speed on the Highveld is about 100km/h and the vehicles can keep up with the traffic without difficulty unless they are fully laden, according to someone who has driven them.

The Citroens are the Dyane sedan — a development of the 2CV — and the Acadiane panel van version of the Dyane. The Dyane is a five-door hatchback with a roll-top roof. It is a four-seater which is readily convertible to something like a station wagon. The Acadiane can carry two people and a load of 400kg.

Both are powered by two cylinder, air-cooled, horizontally opposed overhead valve engines of 602cc that develop 24kW at 5 750r/min. They are mounted at the front and drive the front wheels through four-speed gearboxes which do not have synchromesh on first gear.

Gear changing is by a push-pull lever protruding from the dashboard. There are disc brakes at the front, drums at the rear, rack and pinion steering and independent suspension all round by a single longitudinal coil spring on each side, connected to front and rear wheels on that side by bell-cranks.

It is a highly flexible suspension that copes excellently with extremely rough going.

Top speed on the Highveld, according to the source, is about 120km/h for the car and about 100km/h for the van, but it takes a long time to build up to them.

Fuel consumption was established and compared with that of a 1,3ℓ Mazda 323, a VW Golf 1100 and a Ford Escort 1300, on an urban run of about 60km from the outskirts of Pretoria, through the city and back.

Four drivers were used at a time, each driving a different vehicle. All four drivers drove each one of the vehicles during the series of tests and results were averaged for each vehicle.

The consumptions recorded by the four different lightweight vehicles were very similar, as were those recorded by the Mazda, Golf and Escort.

When the vehicles carried only the driver, the lightweights returned an average consumption of 5,85ℓ/100 km, compared with 6,92ℓ/100 km by the Mazda — a saving of 15,4%. When the vehicles were laden the lightweights averaged 6,9ℓ/100 km compared to the Mazda's 7,6ℓ/100 km — a saving of 9,2%.

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C. Times 2/12/80

New claim on SA A-bomb denied

LONDON. — South Africa had a nuclear capacity which could produce at least four Hiroshima-size atomic bombs, a British defence analyst has claimed.

The analyst, Mr Dan Smith, said in a 32-page booklet, "South Africa's Nuclear Capability", distributed yesterday by the World Campaign against Military and Nuclear Collaboration with South Africa, that the Republic's nuclear weapons potential would not have been possible without the co-operation of Western states.

Mr Smith, a former member of the United Nations Study Group on Disarmament and Defence, and of Britain's opposition Labour Party's defence committee, said that there was no definitive proof that South Africa had in fact manufactured nuclear weapons.

"On the basis of the evidence available it is possible to reach the unambiguous conclusion that South Africa could now have a small nuclear arsenal," he said. "It is possible that the efficiency of its weapon design has been tested with an actual nuclear explosion.

"That South Africa has a military nuclear capacity is clear. So far I have seen no evidence of any use for uranium enriched at the Valindaba pilot plant, and no alternative to military uses comes easily to mind.

"If we accept that the American satellite which identified the double flash over the South Atlantic in September 1979 was functioning properly, it seems clear that a nuclear test occurred, and it is not clear what states other than South Africa might have been responsible for it.

"Because of these two points, I have to conclude that South Africa probably has at least set aside material for nuclear weapons, that it has developed and tested a weapon design and that producing a small arsenal from its available material would be the task of a few weeks at most."

The World Campaign against Military and Nuclear Collaboration with South Africa was initiated by the British-based anti-apartheid movement last year, and its patrons include Tanzania's President, Mr Julius Nyerere, Botswana's President, Mr Seretse Khama, and Zambia's President, Mr Kenneth Kaunda.

Mr Smith listed the countries which had allegedly assisted South Africa's nuclear development as Belgium, Britain, Canada, West Germany, France, Iran, Israel, Japan, Holland, Switzerland and the United States.

He said South Africa was likely to have specific targets in mind for nuclear weapons.

"It might consider that the nuclear destruction of major guerilla camps and bases would be a dramatic demonstration of its determination; the use of nuclear weapons against the towns of any state aiding guerilla forces might be expected to cause an abrupt termination of that aid.

"More important, the regime might expect that the threat, whether explicit or implicit, of nuclear bombardment would deter states such as Angola, Mozambique and Tanzania from aiding the guerillas.

"Indeed, if South Africa were to use its possession of nuclear weapons to deter threats to it, the object or target of that deterrence would almost certainly be those states who could be expected to aid guerilla forces."

● The chairman of the Atomic Energy Board, Dr Wynand de Villiers, said last night that the government had frequently stated its intentions on the matter of nuclear weapons. "I have no intention of saying anything other than that we cannot keep on denying these claims." — Sapa, Own Correspondent.

access, but this is the only unifying thread. The most ambitious variant, the Health Security or Kennedy-Corman Bill, could be placed in the present category, although financing is to be jointly through payroll taxes and general revenues. Eligibility is universal, coverage of services is relatively broad and there are no co-payments by patients so that medical care would be free at point of service with federal agencies ...ctly (Marmor 1977: 78, Glasser 1976: 44-5).

4. CURRENT PROBLEMS OF ALLOCATION AND FINANCE

This section will examine certain practical difficulties as well as theoretical issues in the production and delivery of services designated as health care. The distinction between practice and theory is a rather forced one, given that the peculiarity of the commodity and the social attitudes towards it are held to be root causes of the deficiencies experienced in the sector. Nevertheless, such a division of topics is convenient for exposition.

There is a general consensus that cost escalation is the most visible and pervasive defect of health systems in rich countries from an economic perspective. This has generated alarm and widespread talk of crisis. Medical care costs rose faster in the past one to two decades than the general price index. In the United States after 1966 "expenditures for

health care...increased at an annual rate of 12 per cent" (Klarman 1977: 215), and in 1975 of 14 per cent (Marmor 1977: 73); "French expenditure on health care grew at an average annual rate of 14,9 per cent between 1963 and 1969, and the rate in West Germany over a similar period was 10,3 per cent" (Chester 1976: 70); Canadian experience has been comparable in magnitude to the American with a rate of cost increase about one percentage point lower. Against this background, the performance ... like the proverbial good deed in a

(3) linked to the foregoing is the practice of reimbursement ... which hospital costs are met after the expenditures have taken place, and doctors are paid the "usual, customary, and prevailing fee" established unilaterally by the profession and become levelled up and "fractionated" into sub-charges over time;

(4) "moral hazard", a potentially misleading term for the greater use of medical care facilities that occurs with insurance coverage;

(5) multi-level financing among patients, insurance companies or carriers, and national, state or provincial and local government agencies.

The listing is not complete. Neither are all these purported causes of cost inflation independent of each other; for instance, in the absence of the first, widespread third party financing of services, the effect of the remaining factors named would be attenuated.

questions in the House

R44m spent — no viable oil was struck

CT 21/3/80 (55)

Political Staff

HOUSE OF ASSEMBLY. — South Africa spent R44 million prospecting for oil in 1979 — but no strikes of either oil or gas were economically viable.

In reply to a question by Mr Derick de Villiers (PFP Constantia), the Minister of Mines, Mr F W de Klerk, said indications of oil were encountered in three of the nine boreholes drilled offshore. The most important show extended over a vertical distance of a few hundred metres but in no case was the oil saturation sufficient to allow production at surface.

Significant indications of gas were encountered in four of the boreholes. The most important production amounted to 14 000 cubic metres of gas a day which was uneconomical.

No strikes were made on land.

Koeberg on line early in 1983

Municipal Reporter

THE target date for the commissioning of the first reactor and generator at the Koeberg nuclear power station has been set for January 1983, Escom has told the Cape Town City Council.

In a letter to the council which answers questions posed by a councillor, Mr C C W Steyl, Escom says: "The cost of generation will be the same as that for the supply available in the Cape from the existing sources at the time and no change in selling price is foreseen.

"The average cost per unit of electricity sold in the Cape by Escom is 2,48 cents and on the Rand and in the Orange Free State region it is 1,8c at present.

"The lower running costs of a nuclear station over its life, however, materially assist in keeping increases in costs due to rising fuel prices to a lower figure than is the case with coal-fired stations."

The Escom letter says that Koeberg will not only supply Cape Town but will feed into the national grid as well.

Council 'no' to anti-Koebergers

22/2/80

55

Municipal Reporter

THE City Council's executive committee has turned down a request from the Stop Koeberg Campaign committee for an opportunity to put the case against the nuclear power station to all City councillors.

In a letter to the council, Mr W Robb, a UCT lecturer in economics and chairman of the campaign, said that Escom's recent report to the council on Koeberg contained "several errors, anomalies and in effect untruths".

This report was discussed at a special meeting of the executive committee which was open to all councillors and the public. A senior Escom official, Mr P Spencer, was allowed to address councillors and answer questions.

Mr Stan Evans, the deputy town clerk, said the executive committee felt the matter had been adequately dealt with in the council and outside. The views of those who were both for and against the power station had been expressed.

Mr Robb said it was "extremely important to note that there are many half truths [in the Escom report] which, because of twisted logic and lack of development of thought appear to be in favour of Koeberg."

As the council was responsible to the people of Cape Town and as councillors would be partly responsible for any future nuclear accident if they sanctioned Koeberg, "it would be wise and advisable for them to hear directly the many facts, figures and opinions which they may not have had the chance to hear before".

He asked for a small group from the Stop Koeberg Campaign to be allowed to address councillors. The members of the group would probably consist of himself, Dr A Abramowitz, senior lecturer in psychology at UCT; Mrs H Sieckmann, a UWC Lecturer in German and a further member selected from a list of three — Mr G Seeff, a businessman; Professor J Giliomee of Stellenbosch University and Dr D Bortz, a radiologist.

In his report on the meeting which considered the Escom report, the town clerk, Mr H G Heugh, said three points arose during discussion. They were:

- That the council should be involved in the monitoring process and the safety measures.
- That the council should be involved in the emergency plan drawn up by Escom.
- That the council should be re-assured about the satisfactory disposal of waste and that Escom should be asked for a full statement on the processing, disposal and storage of wastes.

Multi-million rand power link with SWA

(55) (221)

RDM 22/2/80

Political Staff

THE ASSEMBLY. — A new multi-million rand power link is to be built between South Africa and Windhoek, Dr Schalk van der Merwe, Minister of Industries, announced last night.

The line will be powered by Escom to meet growing demand for electricity in SWA, which cannot increase its own supply "as long as Ruacana's full capacity is not available".

Ruacana is the R230-million power station straddling the Kunene River on the Angolan border.

Dr Van der Merwe said that the new supply line from South Africa would save SWA R27-million a year in coal, diesel and transport costs, as well as 74 million litres of diesel.

14 complaints against Press

(243) RDM 22/2/80.

Political Staff

THE ASSEMBLY. — Fourteen complaints against newspapers were laid before the Press Council by the Government and by State departments during 1979, the Minister of the Interior, Mr Schlebusch, disclosed yesterday.

Replying to questions from Mr Nigel Wood (NRP, Berea), and Mr Dave Dalling (PFP, Sandton), the Minister gave details of the newspapers concerned and the action taken.

The Rand Daily Mail had four complaints lodged against it, with two others being lodged against the Rand Daily Mail Extra edition.

Of three complaints lodged by the Commissioner of Police against the Rand Daily Mail, one was rejected and in two others satisfaction was granted to the complainant.

One complaint by the Commissioner of Police against the Rand Daily Mail's Extra edition was rejected and in another satisfaction granted to the complainant.

The Commissioner of Police also lodged a complaint against Die Transvaler, which was rejected, and against Oggendblad and the Sunday Post, which resulted in corrections being published in both cases.

A complaint by the Secretary for Justice against the Rand Daily Mail resulted in redress being given to the complainant.

Decisions were still being awaited on complaints by the Chief of the Defence Force against The Star, by the Secretary for Indian Affairs against Post (Natal) and the Secretary for Environmental Planning, also against Post (Natal).

In addition to these complaints, the Government lodged complaints against the Sunday Express and the Sunday Times.

(ii) Milk.

Most of the workers (89%) were given, free, a daily

Electricity plan puts SWA in South Africa's power

SWA 22/12/80

55

Political Correspondent

CAPE TOWN—The Cabinet has approved a plan that will make SWA/Namibia dependent on South Africa for electric power.

The decision could have far-reaching political effects in relation to the territory's independence negotiations.

The move is seen as a practical example of the Government's policy of drawing together southern African territories in a constellation of states with economic and technical interdependence.

Although the demand for power in South Africa was increasing fast and present generating capacity left little scope for outsiders, the Government felt it could not leave SWA/Namibia and its people in the lurch.

Consequently the Government had decided to approve construction of a power line to the territory with Escom as the generator and supplier.

The proposed power line will start at Aggeneis in the north-western Cape and run 805 km to Windhoek via Orange River, Keetmanshoop and Mariental.

Power will be purchased by the SWA/Namibia generating concern Swawek, which will invite tenders soon for construction of the powerline.

Escom will finance the South African portion.

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Dis

tres a week.

Milk, litres a week	Number of workers	Cumulative %
0 - 2,50	15	12,00
2,51 - 5,00	10	20,00
5,01 - 7,50	33	46,40
7,51 - 10,00	18	60,80
10,01 - 12,50	22	78,40
12,51 - 15,00	0	78,40
15,01 - 17,50	0	78,40
17,51 - 20,00	0	78,40
20,01 - 22,50	0	78,40
22,51 - 25,00	0	78,40
> 25,00	27	100,00
total	125	

Mean: skim milk, 15,1 litres a week

Range: 0 to 81,9 litres a week

The >25 category included 8 workers who could take 'unlimited' quantities of milk daily. Five workers received an 'erratic' milk supply and have not been included.

WORLD OIL (58)

Saudi threat

FM 22/2/80

Saudi Arabia's oil minister Ahmed Zaki Yamani recently threatened to cut output (currently around 9,5m barrels a day) because his country cannot, in an inflationary climate, obtain a real rate of return on investments purchased with surplus oil revenues.

Although this kind of threat has been expressed before, it carries added weight in present circumstances. Since 1973, Saudi Arabia has accumulated vast foreign assets (well in excess of $75 billion) and must be adding to them at a phenomenal rate.

At the new Saudi oil price of $26 a barrel, annual revenues could exceed $90 billion, and the annual surplus should be well over $50 billion. These statistics suggest strongly that the current rate of Saudi output represents nothing but a political concession to the US, on which it depends for military and technical assistance. This is a fragile basis on which to sustain the industrial world's current rate of consumption of imported oil.

Observers have suspected, too, that Saudi purchases have helped to put the gold price to current high levels, as only a buyer with a very fat purse indeed could sustain a price of over $600 for any length of time. These suspicions have now received some confirmation, in the form of a report that Saudi Arabia has bought large quantities of Russian gold, and plans to buy more gold during 1980.

Whatever public US attitudes on gold may be, it is tempting to speculate that America would prefer the Saudis to buy gold with a portion of their surplus instead of cutting back on production for want of suitable investment outlets.

UK·ENERGY

Liquefying coal

Britain is moving towards oil-from-coal experiments, despite its North Sea oil fields. A site has been selected at a North Wales colliery where two pilot plants for coal liquefaction are planned. They will be built with finance from the UK government and the European Economic Community.

The processes to be tested are quite different from the Lurgi gasification method employed by Sasol. In one, a liquid solvent is used to extract a soluble fraction from coal. This can be refined by conventional methods to produce a wide range of fuels and petrochemicals, including petrol and diesel. In the second (to be financed by the EEC to the extent of £3,1m) gas under high pressure does the work of dissolving the coal.

Both processes have already been tested on a small scale; the projected pilot plants will determine how well each functions (technically and economically) on a larger scale. The ultimate goal is, obviously, to establish full-scale commercial plants. The decision on the pilot plants expected around mid-1980, rests with the UK government and the National Coal Board.

To illustrate the potentialities of the processes (at least with UK types of coal), National Coal Board scientists have achieved results of up to 228 ℓ of petrol and 365 ℓ of other fractions from one ton of coal.

Under the UK's projected programme for the next five years, there is also a plan to build a third pilot plant to produce a substitute gas from coal.

In addition, Britain is spending money to develop methods to exploit renewable energy resources. The Energy Technology Support Unit of the Department of Energy has five projects in hand (managed from Harwell, the headquarters of the UK Atomic Energy Authority's research establishment).

The projects cover the fields of wave, wind, tidal, solar and geothermal energy. For example, four principal methods of extracting wave energy are under investigation. "Salter's Duck" (named after its inventor) is a floating system of generators equipped with projections which rotate about a central spine when struck by waves, so driving variable hydraulic motors which generate pressure in an oil reservoir. The pressurised oil, in turn, would drive electrical generators, with the power taken ashore by undersea cables.

"Cockerell's Raft," designed by the inventor of the hovercraft, comprises a series of linked rafts which follow the contour of the waves. They are connected by hydraulic hinges which charge a reservoir as they move vertically in relation to one another. The head of water built up is, again, converted to electrical power.

A third possible system is the "oscillating water column," which comprises a floating structure with two vertical legs of unequal length — also a possible means of converting wave movement into electrical power.

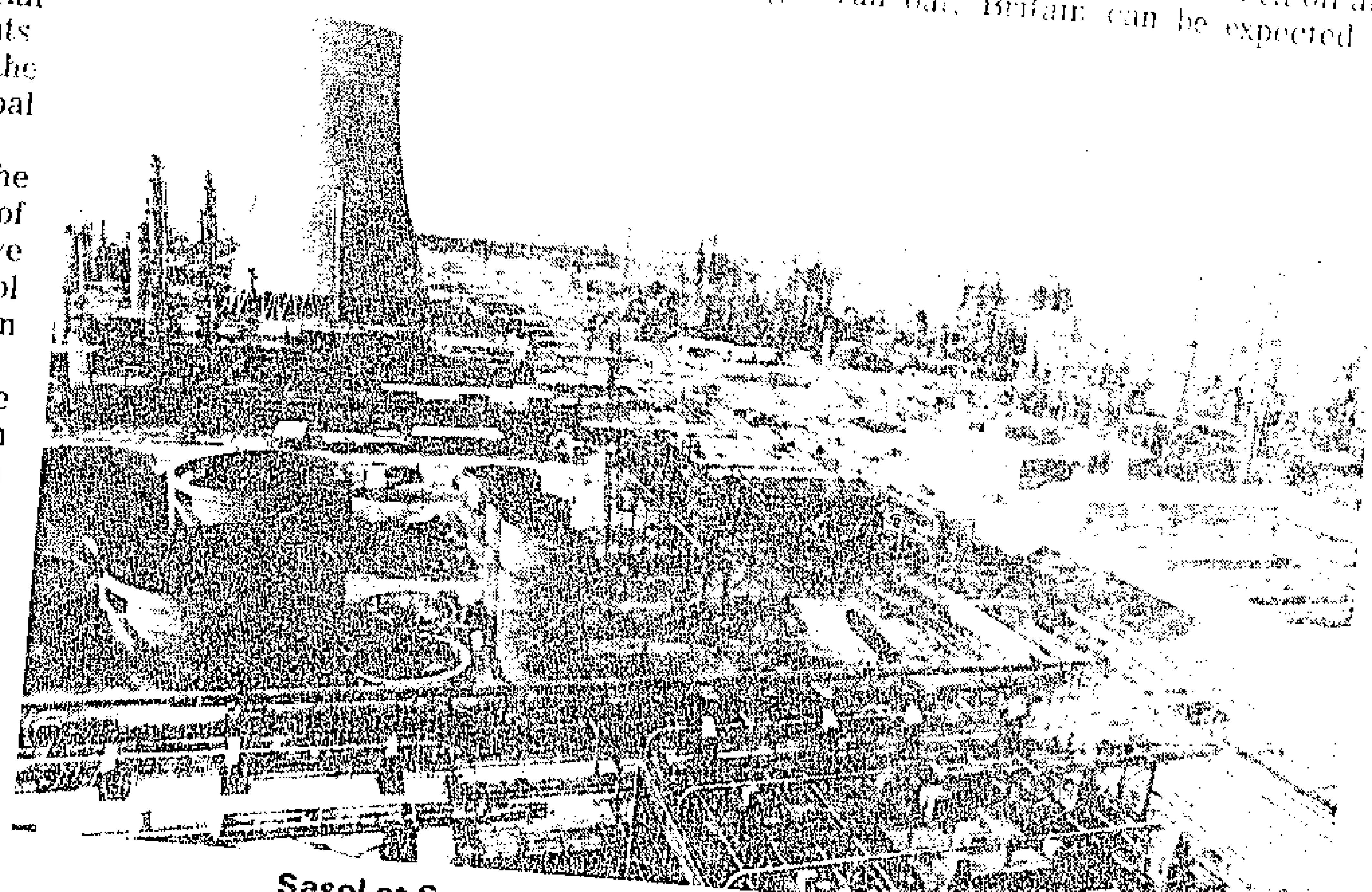
A wind generator with a blade 60 m in diameter and capable of a power output of 3,7 MW is also under study.

Studies of a barrage across the River Severn to exploit tidal power show that a scheme able to displace 5m t-15m t of coal a year would cost between £4 billion and £8 billion in current money. Environmental effects, however, would be considerable.

Preliminary experiments are under way near Southampton to tap geothermal energy from a sedimentary basin thought to contain usable quantities of hot water.

Consideration is also being given to using waste organic material ("biomass") to generate fuels through bacterial action.

In fact, while these concepts are a tribute to the continuing vitality and ingenuity of British science and technology, none of them is likely to have much practical application in the forseeable future. The UK, apart from its resources of oil and natural gas, has some of the world's largest coal deposits, as well as one of the most advanced bases in nuclear technology. So, when the North Sea oil and gas run out, Britain can be expected to extend its current use of coal and nuclear power to make up the balance of its energy needs, rather than turn to exotic (and expensive) renewable resources.



Sasol at Secunda . . . will the UK build its own?

S. Times 24/2/80 File whole supplement under (55)

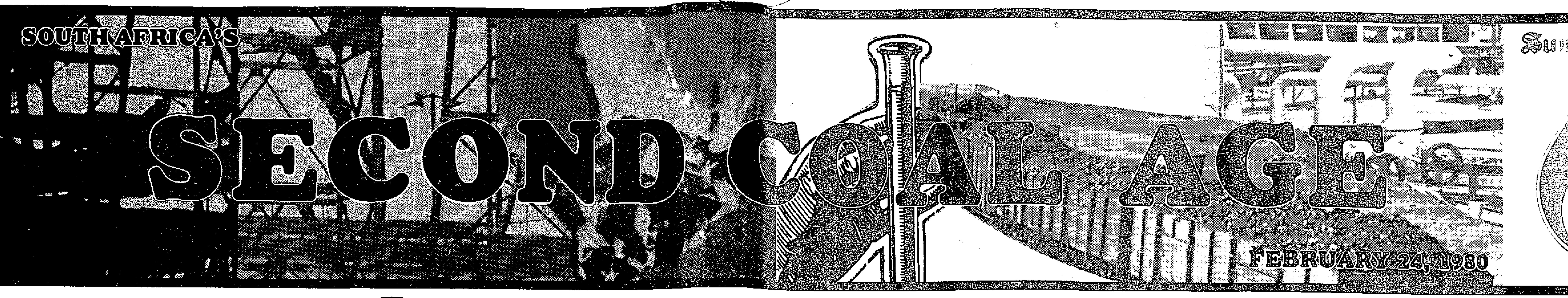
Sunday Times

AECI

SOUTH AFRICA'S

SECOND COAL AGE

FEBRUARY 24, 1980



SA steps in to lead world into second coal age

SOUTH Africa is leading the world into the second coal age.

As economists and industrialists predict an era of rapid expansion, this country has suddenly stepped into the forefront in exploiting long-neglected technology to make coal a substitute for oil.

Coal is now the foundation for our industrial and social development — not just as a fuel to supply energy but as a basic chemical feedstock to make an enormous range of products.

Nowhere else in the world are there plants using coal to make ammonia, plastics and methanol on such a large scale.

Thousands of engineers, planners and politicians from other countries are flocking here to look at South Africa's success and learn how they can avoid the consequences of the international oil crisis.

"This country is now entering its most exciting decade of industrial growth and social development," predicts Denys Marvin, managing director of AECI. "It is a fascinating vista, with the potential for great dividends for this country."

Low oil prices and the ease with which petrochemicals could be used as feedstocks led the rest of the world in the fifties to largely abandon the use of coal except as a fuel.

But South Africa, in its search for independence of imported raw materials long before the oil crisis reached its present proportions, has turned the clock back and chosen the coal routes as the main thrust for developing its chemical industry.

AECI researchers played detective to find the often forgotten coal technology which they developed and adapted into the giant Coalplex operation at Sasolburg and No 4 Ammonia plant at Modderfontein.

Both remain unique world leaders in the practical industrial application of coal technology.

"Anything you can make from oil you can make from coal," says AECI's technical manager, Dr Colin Schlesinger.

"Our coal is comparatively cheap by world standards and by using it as a chemical feedstock it gives the opportunity to make a wide range of products which will be very competitive in world markets."

But it is not just plastics and Sasol's fuels which are important results of South Africa's enlightened exploitation of its 25 000-million tons of coal reserves.

Our production of the two basic barometers of a country's industrial development — caustic soda and chlorine — have risen virtually to the point of self-sufficiency and also offer potential for exports.

In explosives, we are completely self-sufficient, with the two largest commercial explosives manufacturing facilities in the world located at Modderfontein and Somerset West.

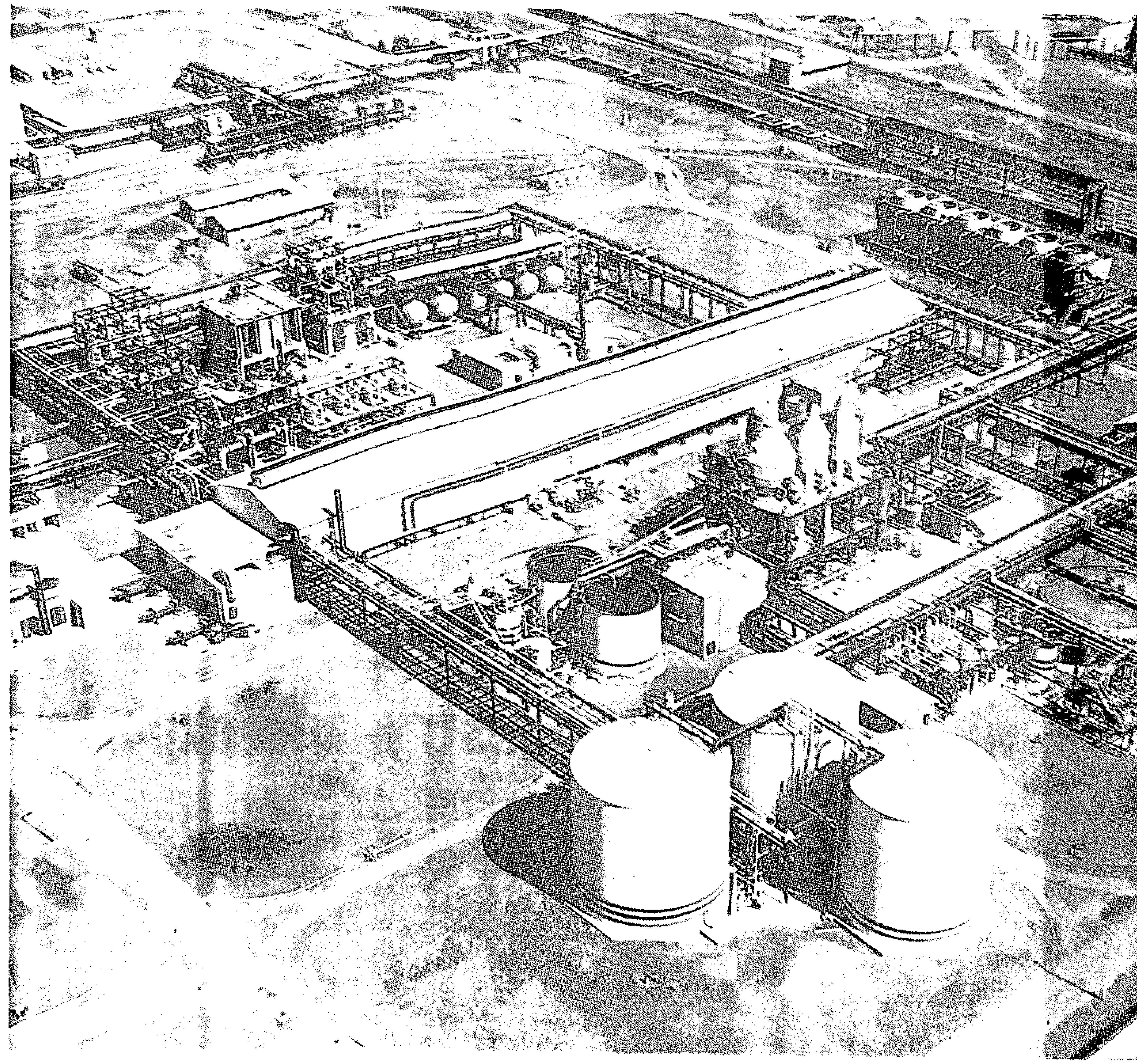
Coal helps to create a million blasts a day to mine coal, gold and other minerals.

Our motor, textile, furniture, packaging, agriculture and other industries are nearly all benefiting from coal exploitation as a chemical feedstock.

It affects the lives of everyone in South Africa and could prove a decisive factor in our future, with the social consequences of industrial growth creating more employment opportunities and internal stability.

So, as the brief 50-year-old oil age wanes, so the second coal age dawns with South Africa in the forefront.

This supplement, focusing on the giant AECI group chemical companies, tells how the lead was acquired and the prospects it holds for all South Africans.



The chlorine plant at Coalplex can accommodate 72 diaphragm cells. In the centre is the caustic soda evaporatio conically shaped towers, while liquor and brine storage tanks are in the foreground.

Researched and written by
COLIN HAYNES

Oil may be too expensive

Reaching towards the sky are the hydrochloric acid drying towers at the Coalplex VCM plant.

to burn by turn of the century

BY the turn of the century, oil will have become so expensive to use as a fuel that we will tend to use it as a chemical feedstock.

But by that time South Africa will have become largely independent of oil imports and instead emerge as a major world source of the supply of coal and coal-based products.

This is the prediction of the manager of AECI's plastics division, Mike Sander, and his colleagues who have come up with a "think tank" forecast of what our lead in applied coal technology will mean for South Africa in 20 or 30 years' time.

They assumed no major world disasters such as wars or global economic recessions, and South Africa being able to continue to trade reasonably freely with other countries.

By the end of the century, they predict, oil will have risen in price to several times its present level and be too expensive to burn as fuel.

Oil will become primarily a chemical feedstock, raising world prices for plastics to put them more on a par with traditional materials despite their inherent advantages.

Coal and nuclear energy will become far more important in the generation of electricity, with probably no new oil refineries built in South Africa and the existing ones running well below capacity.

As South Africa has large reserves of coal, the available labour to extract it and the necessary lead in technology, this country will become an increasingly important exporter of coal for both fuel and chemical feedstock purposes and of added-value products derived from coal.

Virtually all our existing oil-based requirements will have been switched to coal. There may be other, even bigger, PVC, polyethylene and ammonia complexes, as well as the establishment of further coal-based chemical plants such as methanol to keep step with our industrial expansion.

The predictions, still assuming no major disasters, are that there will be no shortage of investment capital, technology or raw materials in South Africa.

But there could well be a critical shortage of skilled people, particularly in middle management and among supervisory staff and technicians.

However, because of the positive advantages South Africa will enjoy over other countries, it will be an even more attractive country in which to live and so attract the required skilled immigrants while its own human resources are being developed.

"In short," said Mr Sader, "South Africa should have a super future."

Methanol plant plans well advanced

PLANS are well advanced at AECI for a R400 000 coal-based plant that could start producing methanol at a rate of 800 000 tons a year in about three years' time.

This production could boost South Africa's fuel supplies, helping to meet the Government's alternative fuel target of 20% of the present conventional fuel consumption.

Substantial methanol production could fully exploit the country's vast resources of low grade coal, as was emphasised by the Minister of Environmental Planning and Energy in Parliament recently.

AECI has been manufacturing methanol from coal at Modderfontein for the past 20 years. The company's latest 1 000 ton-a-day No 4 ammonia plant already produces some 60 000 l of methanol a day.

It is the only plant in the world producing methanol from coal at the moment, benefiting from the fact that ammonia and methanol technologies are closely related.

In a statement this week, AECI's managing director, Mr Denys Marvin, said: "The company has always believed that the coal route was the logical one to follow on the country's way to self-sufficiency in its fuel needs.

"With unlimited access to the best methanol technology in the world through its affiliation with ICI of Great Britain, the company is well placed to take full advantage of the Government's offer of assistance to the alternative fuel market.

"We believe that methanol from coal is a much more attractive proposition than ethanol from agricultural sources," says AECI's technical director, Mr Doug Wood.

"We have assured supplies of coal, whereas the agricultural products for ethanol are far less predictable, require a lot of land and are subject to

Denys Marvin
... better choice

droughts, crop failures, and so on.

"Although ethanol production might have some social advantages in creating agricultural employment, it probably cannot be as cost-effective or viable in the long run as methanol.

"Agricultural production also consumes a great deal of energy, whereas methanol is a far more direct and economical conversion of the stored solar energy in our coal into fuel."

AECI's research into the application of methanol as a substitute fuel has been mainly concerned with the reduction of diesoline imports. Priority has, therefore, been given to research into running conventional diesel engines on methanol or methanol blends.

Patents, based on successes in this field, have already been filed.

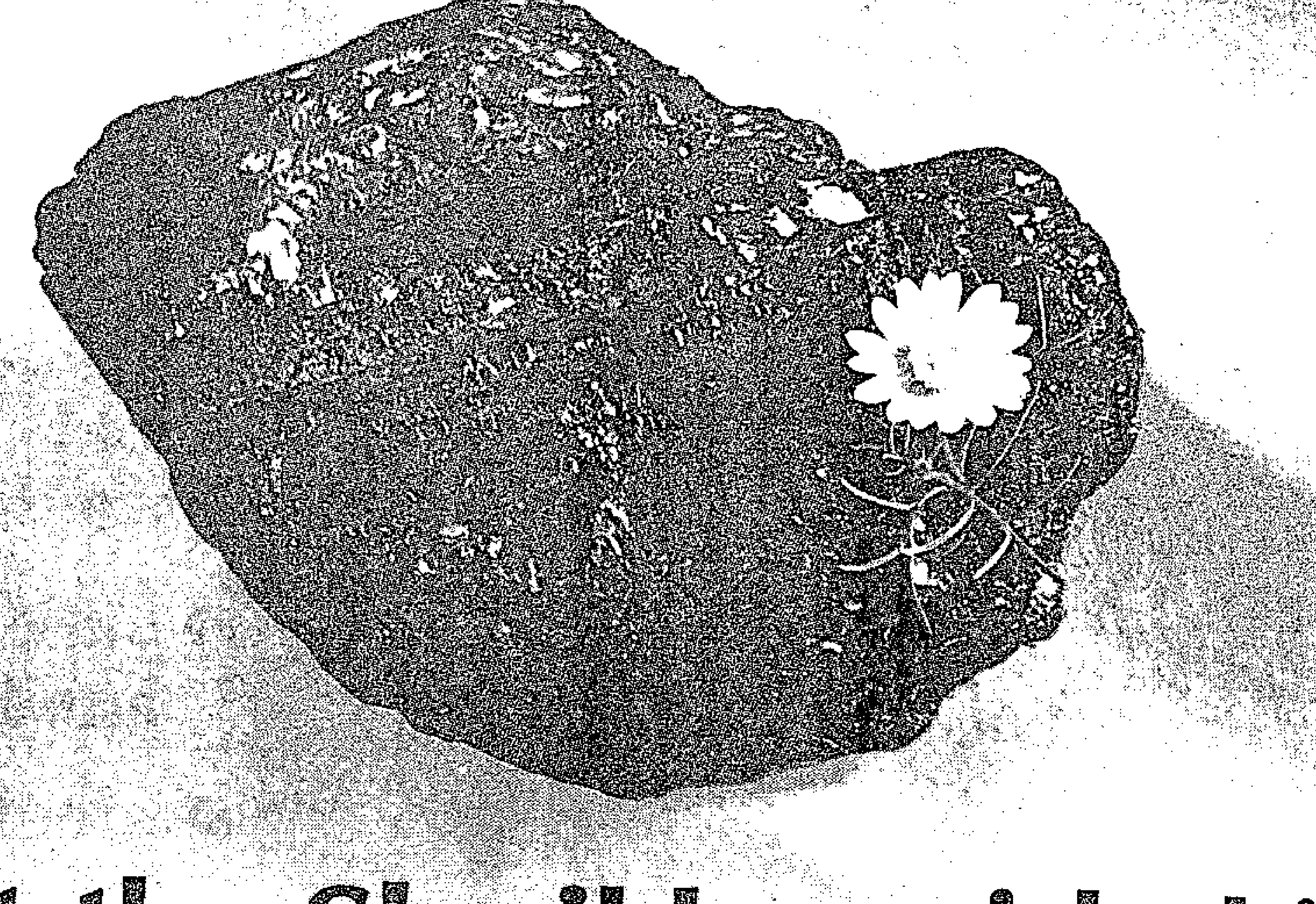
Although the use of methanol as an alternative fuel is receiving precedence at the moment, its additional role as a basic raw material has a variety of further applications, especially as a feedstock in the heavy chemical industry.

An abundant supply of methanol will start a whole new chemical era, replacing naphtha as a feedstock in chemical building blocks. Examples are ethylene, benzene and toluene, from which a vast range of the essential raw materials for the plastics and sythetic fibre industries are derived.

South Africa will then also be less dependent on imported mono-ethylene glycol and terephthalic acid, the two basic feedstocks in the polyester production process.

Its most important chemical use at present is in the production of formaldehyde which, in turn, is employed in the manufacture of sythetic resins for the furniture and related industries.

Other by-products derived from methanol are used in a diverse range of products including rubber vulcanisation chemicals through to plasticisers, "Perspex", [illegible] anaesthetics, insect repellents and fumigants.



Massive plastics plant to cost R150-million

DEMAND for plastics is expanding so rapidly that AECI is to spend R150-million to erect the biggest polyethylene plant of its kind outside the United States.

As AECI forges along the coal route to plastics manufacture to reduce our dependence on important raw materials, the new plant will be located at Sasolburg to take supplies of ethylene from Sasol 2 and later Sasol 3. It is AECI's biggest project since Coalplex and will come into production next year to help make South Africa self-sufficient in low-density polyethylene.

LDPE — commonly known as polythene — is used mainly for packaging in this country. But it has a host of other important applications in agriculture, for tubing, for cable insulation and a wide range of consumer products.

"The new plant at our Midland site at Sasolburg will more than double AECI's polyethylene capacity and will form an essential building block for the expansion of the South African plastics conversion industry," Mr Mike Sander, manager of the company's Plastics Division, said.

"It uses a new generation of low-pressure technology which is very efficient, produces consistently high quality and will make a wider range of grades available to the local market."

The project will have an eventual capacity of 150 000 tons and, relying as it does on coal-based ethylene from Sasol II represents a significiant step away from the petrochemical feedstock, naptha, which has been the source of all our ethylene to date.

Sasol 2 has a large investment in obtaining ethylene from indigenous raw materials and supplies will become availabe this year so that about half of our ethylene will be produced from local coal. Sasol 3 will provide still further ethylene supplies.

The existing AECI polyethylene plant uses naphtha-based ethylene and does not have the capacity to meet present demand. So the new project will both overcome the shortfall in supplies and reduce dependence on a politically and economically sensitive important feedstock.

The new technology involved was developed by the Union Carbide Corporation, which employs 100 000 people at 500 plants around the world.

Called the Unipol process, it runs at one two-hundredth of the pressures used at AECI's existing polyethene plant at the Midland factory. This is achieved by new catalyst technology using a gas-phase fluidised bed system.

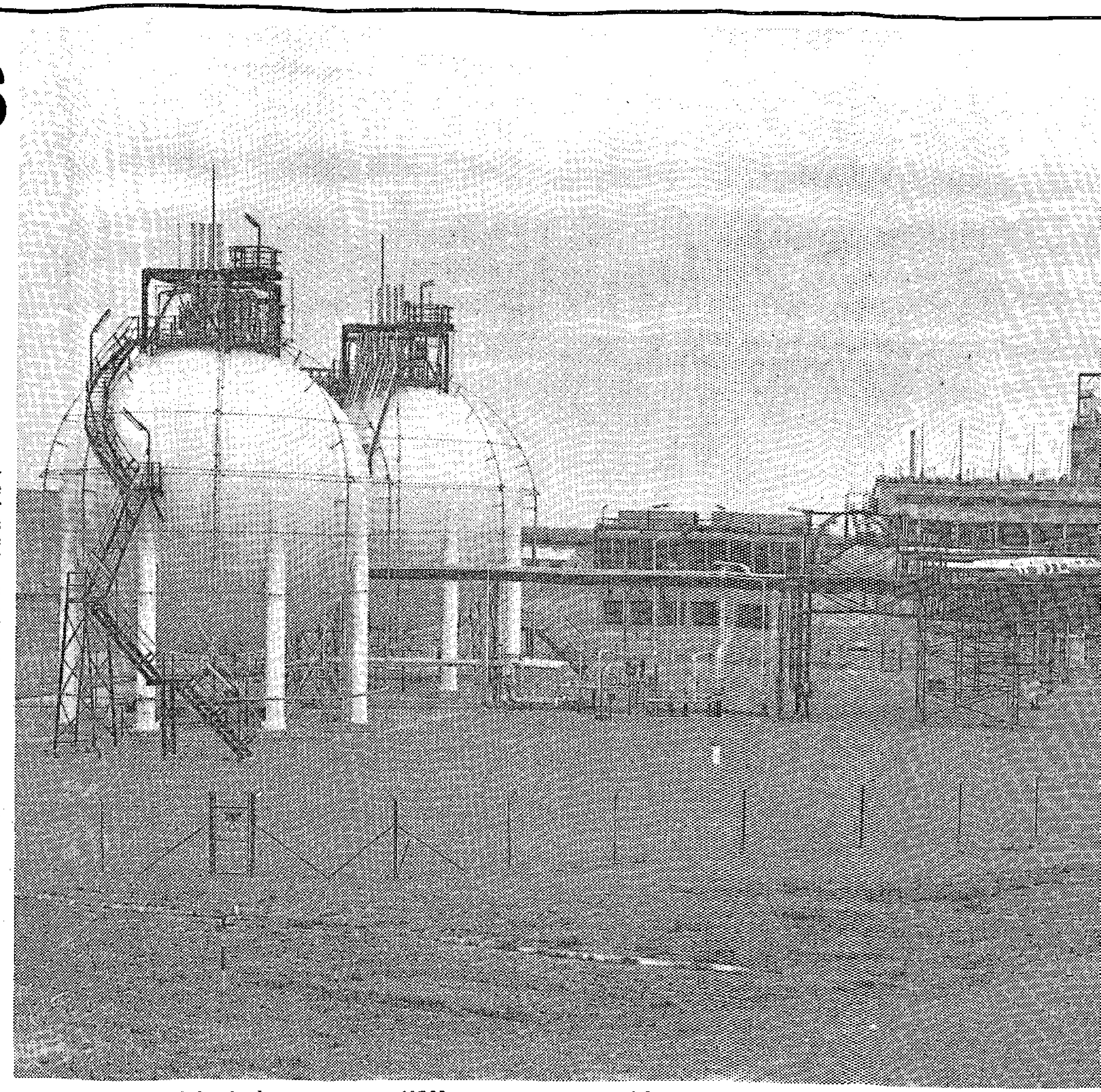
"Together with our new PVC plant at Coalplex, we are now well placed for future exports of both polyethylene and PVC," said Mr Sander.

"As the Midland plants use caol-based processes, we are protected to a degree from increased world oil prices or possible restrictions on supplies as the Arabs protect what they realise is not an inexhaustible resource.

"Most polythene and PVC is produced from petrochemicals, but while it will be more capital intensive for us to go to the coal route in South Africa, we will have better continuity of supply and more stable prices.

"These are vital factors for our local plastics converters as well as opening up the export opportunities. We are forecasting substantial growth in local demand for poleytylene and PVC from the natural increased usage of existing products as incomes and population rise and by the introduction of new applications for these materials.

"Increasing black buying power will expose this important section of the population to more plastics products, including wrappings with the trend towards convenience shopping," said Mr Sander.



Coalplex has two 1 250-ton VCM storage spheres, with a portion of the VCM plant in the backgro

PVC plant will boost local industry and exports

THE ripple effects of AECI's new coal-based PVC plant at Coalplex and the planned new polyethylene plant drawing on raw materials from Sasol 2 and 3 will be felt throughout South African industry.

"We now have the prospect of making more products which are viable on the comparatively short production runs needed to meet local demand and of being very price competitive to overseas markets, such as Europe, South America and the Middle and Far East," the manager of AECI's plastics division, Mr Mike Stander.

AECI is already exporting PVC at a rate of 60 000 tons a year from the Coalplex venture. In addition, the plastics conversion industry is encouraged to enter the export market with finished products and semi-products in both PVC and polyethylene.

"Polyethylene film is already exported to many countries for agricultural and other uses and this will increase when our new Midland plant at Sasolburg starts coming into production next year.

"But the increased availability of PVC and polyethylene at competitive prices is particularly relevant to our local conversion industry. Extrusion or film blowing plants can be set up at comparatively low cost by many firms to produce a wide range of products, which add value to our exports and increase employment opportunities.

"However, we must continue to guard against damage being done by misuse or inferior manufacture. We at AECI have always taken as much action as we can to ensure that the industry as a whole protects its image by working through organisations like the Bureau of Standards, National Building Research Institute, Chamber of Mines and others to ensure proper specifications and standards."

Mr Sander expects still further expansion in the applications of plastics as substitutes for other traditional materials. Research into re-inforcing and other additives and in manufacturing processes make plastics much more widely applicable. Plastics can now be made which are stronger than steel, do not corrode and enable big reductions to be made in tooling costs.

Also, the need to conserve energy has created a trend to lighter motor cars, further stimulating wider use of plastics.

Explosion led to a great discovery

AN explosion in a research laboratory, the Battle of Britain dogfights between the RAF and Luftwaffe, together with some inspired long-term planning by AECI and Sasol, laid the foundations for South Africa to become self-sufficient in the strategic plastic, polythene.

The story goes right back to 1933 when an ICI team in England was experimenting with chemical reactions of different gases under high pressures, explained AECI's plastics division development manager, Mr David Gosnell.

One of the gases was eth-

vealed that polyethylene had remarkable electrical insulation properties and

During the 1950's, polyethylene sales leaped dramatically — sometimes

from coal plant, but concluded that this would also be too small for the fast

... between 1 000 and 2 000 atmospheres, produced a waxy solid which was then merely a laboratory curiosity. When the experiment was repeated, there was a violent explosion much more potent than from an equivalent amount of TNT.

This research was suspended until more suitable laboratory facilities became available. Then it was discovered that the ethylene had polymerised under pressure in the presence of a very small quantity of oxygen impurity in the gas.

"I was by a lucky accident that ICI had discovered how to make polyethylene but they still did not know what to do with it," said Mr Gosnell.

Further experiments re... for gutta percha (natural rubber). As the war cloud loomed, research into radar intensified and polyethylene came into its own in enabling radar sets to be made small enough to fit into fighter planes.

These portable sets lay behind the secret of Group Captain "Cat's Eyes" Cunningham's successes in the Battle of Britain.

It was his radar which could see through the clouds, enabling him and his squadrons to swoop onto and destroy so many Luftwaffe bombers.

Radar, to which polyethylene contributed substantially, played a crucial role in finding and destroying hundreds of German U-boats and in winning the air and sea war for the Allies.

... became the wonder plastic" used in many different products ranging from bags to bottles, kitchenware to pipes, buckets to submarine cables.

South Africa imported these products in increasing quantities and AECI began looking at the feasibility of local manufacture, for which it required a source of ethylene.

The possibility of making ethylene from alcohol derived from by-product molasses was rejected in 1959 because of the limited availability and high cost of alcohol.

In 1960/61 AECI and Sasol jointly investigated a 14 000 tons per annum venture based on extracting ethylene from Sasol's new oil ... then only about 5 000 tons per annum.

Sasol then proposed to build a 35 000 ton ethylene plant based on cracking imported naptha, a product of crude oil, which was then freely and cheaply available on world markets.

Agreement was reached to go ahead with this in 1962 and AECI installed a two unit, 20 000 ton per annum high pressure low density polyethylene plant at Sasolburg. This came into operation in 1965.

The plant, which operated at pressures up to and over 2 000 atmospheres, used equipment and technology of a standard entirely new to South Africa.

Local production and AE... tons per annu...

There has ... balling effec... AECI project... continued dev... gramme. Lo... realised that ... cure local su... ethylene whi... much wider ... plastics. An ... tor in achie... growth was ... price stabilis... largely thro... efficiencies a... tion of techn... opments at th... with the be... passed on to ...

While naph... ene prices hav... fold since 197... AECI's poly... only risen fou...

Plastics move paid off handsomely

SOUTH Africa has always had the tendency to go its own way whatever the rest of the world is doing — and sometimes it pays off handsomely.

One of the biggest benefits to come from our tendency to buck world trends was the decision in the fifties to start making plastics from coal sources when the rest of the world was switching to oil as feedstock.

The first plastics ever made in South Africa came from coal when AECI in 1955 opened its polyvinyl chloride plant at Umbogintwini near Durban. That plant was only possible because earlier in the century a small firm in Germiston started producing carbide for miners' and bicycle lamps.

The firm was Rand Carbide and AECI laid the foundations for its entry into the plastics industry by buying a controlling interest in Rand Carbide way back in 1934.

Calcium carbide is formed by passing an electric current through coke and lime to generate intense heat. Mix the carbide with water and you get acetylene gas, which is an alternative to ethylene for the manufacture of PVC, and vinyl acetate which is used in PVA paints, adhesives and gramphone records.

It is much easier — and involves a lower capital cost — to make these plastics from ethylene derived from petrochemicals and that was the way the rest of the world went in the fifties when low oil prices seemed here for ever.

But the local availability of acetylene from Rand Carbide prom... go this coal-ba... by the end of ... were virtually ... field.

Now, with ... Sasol II, poly... ufacture by ... closer to com... dependence ... from coal be... able in stead... proportions to ... from naphtha ... ed oil.

Ammonia 'monster' gives many their daily bread

THERE is a "monster" gobbling up 3 000 tons of coal a day just outside Johannesburg to help feed millions of South Africans and provide essential supplies to our mining industry.

The "monster" is the affectionate name the staff at AECI's Number 4 Ammonia Plant at Modderfontein call their charge. But this monster is a very benevolent creature on which many of us depend for our daily bread.

Ammonia is an essential ingredient in capturing nitrogen from the air and converting it into fertilizer. Without No 4 plant, South Africa's nitrogenous fertilizer supplies would be drastically deleted and within a year we would all feel the effects in food shortages.

Just as important to the mining industry is the contribution No 4's ammonia makes to the manufacture of explosives at AECI's Modderfontein complex — the biggest commercial explosive facility in the world.

Without Modderfontein's explosives, the million detonators produced each day and the output of enough safety fuse daily to stretch from Johannesburg to Cape Town, South Africa's mining industry would virtually grind to a halt.

Role

So No 4 is far more than just another chemical plant. Its efficient operation, year in year out for 24 hours of every day plays a key role in keeping the wheels of our economy rolling.

But that's not the main reason that top chemical industry people from the United States, Europe, Japan and othe rparts of the world are flocking there by the hundred.

This constant flow of overseas visitors occurs because No 4 Ammonia is unique — there just isn't another ammonia ... in the ... easier way from natural gas, AECI blazed a trail along the coal route long before the first Opec made the rest of the world start worrying about petrochemical feedstocks.

In fact, as AECI deputy managing director Ronnie Webb explains, the story began in 1932 when AECI opened the Southern Hemisphere's first ammonia plant at Modderfontein.

The manufacture of hydrogen is an essential first step in the ammonia process and that first ammonia plant obtained hydrogen by blowing steam through incandescent coke derived from South African coal.

Initial production was just over 12 tons a day, expanding steadily during the 1930s and 1940s to 70 tons with the increasing demand for ammonia-based nitrates for mining explosives.

Capacity

This growth in the local market led to AECI opening number two ammonia plant at Modderfontein in 1954 with a daily capacity of 140 tons, which was later extended to cope with increasing fertilizer demand to 275 tons daily capacity.

Ammonia 2 uses low grade coal as a feedstock, helping AECI to consolidate its world lead in know-how on producing ammonia from coal.

But when Ammonia 3 was built in 1967 at Umbogintwini on the Natal coast it was specifically to use hydrocarbon gases available as a by-product from nearby oil refineries.

"The Umbogintwini plant was viable and has remained a highly efficient operation despite the increase in oil prices," said Mr Webb. "Indeed, it was a world leader among over 60 plants using the Kellogg process in the efficiency with which it was brought into production."

However, when it was decided at the end of the sixties to build a fourth ammonia plant, ... world oil prices then still prevailing.

Virtually any chemical plant using oil as the basis for its feedstocks is substantially lower in capital costs than one using coal feedstocks. However, operating costs vary enormously in production to the cost of the vast feedstocks consumed.

"We are very glad that we decided to go the coal route with Ammonia 4 plant, although that decision was taken before the Opec round of price increases," said Mr Webb.

Ammonia 4 was an integral part of the R100-million nitrogen project at Modderfontein and made up about R82-million of that capital investment.

To build just the ammonia plant today would probably cost in the region of R240-million.

It uses the Koppers Totzek gasification process developed in Germany but only using coal feedstocks on a large scale at Modderfontein.

The coal supplies are railed in from the Witbank area and tipped into massive hoppers or put into the 27 000 tons stockpile which holds enough in reserve for ten days production.

The operation is so efficient that most of the operators at the plant never see either their raw material or their finished product.

"In fact, if you see your finishes products you know you have an emergency," sommented the plant's section manager, Eddie Taylor.

All the ammonia produced is piped out for further processing elsewhere in the Modderfontein complex.

Although the coal is ground to the consistency of talcum powder, the level of efficiency and the good housekeeping at the plant makes it nearly impossible to believe that something as "dirty" and difficult to handle as coal is being used there in such large quantitities. Operators can walk through Ammonia 4 in business suits and hardly collect a speck of dirt.

Mixing nitrogen with the coal, and careful steps to exclude oxygen at key stages of the process, are vital safety measures with something as potentially explosive as coal powder.

When oxygen is fed with the powdered coal to burn in the six gasifiers, there are a host of back-up systems to cut off combustion in the event of any emergency.

Burning the coal produces carbon monoxide, carbon dioxide and hydrogen. This gas mixture is then compressed to 30 atmospheres and the sulphur taken out by washing it in methanol. The methanol plant at Ammonia 4 is an other AECI world first.

Double

It is the only coal-based methanol plant in the world and, at an output of 90 tons per day, has now been developed to the stage where its capacity is twice that of the original design.

Since the Government's announcement favouring methanol production from low grade coal as an alternative fuel, this plant at Modderfontein is assuming increasing significance every day.

When the gas mixutre has had its sulpher content removed, it is then mixed with superheated steam at high pressure and passed over a catalyst to remove the carbon dioxide.

Much of this carbon dioxide is piped across to a nearby ACEI urea plant.

The remaining carbon monoxide, and other unwanted contents such as residual argon and methane are washed out by using liquid nitrogen.

The pure hydrogen left is mixed with nitrogen to form ammonia under a pressure of 220 atmospheres in the pres... used to power the operation of steam to drive turbines operating giant compressors.

Yet very high standards of pollution control are achieved.

The boiler stack is 90 metres high and two electrostatic precipitators remove particles and are designed to cope with the worst possible conditions.

Noise and water are further environmental factors which receive careful attention.

The plant consumes 19 million litres of water daily and its painstakingly recirculated to conserve it as much as possible.

Much of the water consumed is, in fact, purified sewage effluent from the Johannesburg Municipality's Northern Works and shared with the Kelvin Power Station.

Any water which is released from the plant and does not meet stringent purity limits laid down by the Department of Water Supplies is pumped for use in AECI's effluent spraying programme at its Modderfontein complex.

The farm which adjoins this chemical complex has some of the richest grassland in the country!

Solid waste goes to central dumps, which are being landscaped and support flourishing vegetation and bird life.

Padding

Noise pollution is combated by extensive acoustic padding and silencers on valves, steam vents and gas lines.

Perhaps the most fascinating aspect of Ammonia 4 is the way in which its operators orchestrate a complex series of activities and processes to make everything work at once.

Despite the intricate systems of controls, a failure in just one valve the size of a kitchen tape could have a chain or consequences right through the whole process.

So keeping Ammonia 4 operating continuously every minute of every day of every year

It looks like the launching pad for space craft, but this is the hydrochloric acid preparation section on the V... Coalplex.

Historic build-up to AECI's latest big bang...

AECI is making the most significant expansion in its 84-year history.

The company, which started as a manufacturer of dynamite in October, 1896, when President Paul Kruger of the Transvaal Republic opened Modderfontein factory, is now responsible for the technological expansion turning South Africa's rich coal resources into products as diverse as fertilizers and plastic bottles.

In 1924 the company was registered in Johannesburg as the result of a merger between the South African interests of Nobel Industries (Modderfontein factory) De Beers Consolidated (Somerset West factory) and Kynoch Limited (Umbogintwini factory).

This merger followed a noholds barred battle between South Africa's two biggest explosives manufacturers, Nobel Industries and De Beers.

During World War I British interests acquired control of the Nobel factories throughout the British Empire and this formed the foundations for Im... African producer of phosphatic fertiliser.

Expansion came rapidly in the succeeding years in the fields of fertiliser, paints and agricultural chemicals.

In 1932 a milestone was reached when South Africa's first ammonia synthesis plant was opened at Modderfontein.

South Africa went off the gold standard in that year, stimulating increased mining activity. AECI helped profitability in the mines by substituting locally made ammonia for imported nitrates in explosives.

Ten years later the range of ammon dynamites finally replaced gelignites for many mining applications.

During the war years, AECI helped to change the course of world history with Modderfontein supplying the explosives ... the company's profits exceeded £1-million for the first time.

By 1955, ammonia production capacity had trebled and AECI entered the field of plastics manufacture with its PVC plant at Umbogintwini in Natal.

The next few years saw continued expansion and significant technological developments in explosives.

By 1961 the first concentrated nitrogenous fertilizer plant in Africa went on line at Modderfontein, and in 1963 AECI moved into the textile field by acquiring a minority holding in SA Nylon Spinners.

Then, in 1964, AECI opened their first plant at the Midland Factory in Sasolburg, producing calcium cyanide for gold extraction.

That year group sales shot to over R100-million. The giant was really flexing its muscles. ...nesburg Stock Exchange with an initial placing of 12-million shares. Today the major shareholders are ICI (40%), De Beers Industrial Corporation (40%), while the balance of the shares is traded on the JSE.

In 1968 the first slurry explosives and on-site mixing facilities were introduced — probably the most significant advance in explosives technology since Alfred Nobel's discovery of dynamite in 1864. Today AECI spends some R3-million on explosives research annually.

AECI went out of the marketing of fertilisers directly to the farming community in 1970 when it took a 49% stake in Triomf.

The same year it merged its paint holdings with those of Protea Holdings to form Protea Holdings ... lux, in which AECI had a 50% ...

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Currently th... exciting proje... eration. It is p... Sasolburg ...

world.
While everybody else has been producing ammonia the

jor project should be based as far as possible on local resources, despite the attractive

This makes a big impression on overseas visitors who find that they can walk round and

The gas is continuously recycled over the catalyst and the ammonia then cooled to a liquid state at minus 37 degrees Centigrade.

Vast storage tanks holding 16 000 tons of liquid ammonia feed the nearby AECI nitric acid and ammonium nitrate plants for the next stage in the manufacture of explosives and fertilizers.

Ammonia 4 is a vast generator of energy — a third of the coal input, 1 000 tons a day, is

and alertness of its team.

There are 55 of them on duty every shift, together with two white mice as back-up "gas sniffers" who have so far never been needed.

No wonder the men at Ammonia 4 call it "The Monster" but they do so affectionately because they feel a key part of the remarkable success it has achieved in helping to feed South Africa and keep our mining operations running smoothly.

It was through this later link with ICI that AECI has had so much access to valuable international chemical expertise over the years.

The new South African company had as its main purpose the supply of blasting explosives and detonators to the gold and diamond mines, with factories at Modderfontein in the Transvaal, Somerset West in the Cape, and Umbogintwini in Natal.

It was also the only South

many of the campaigns to the north.

But chemical manufacture was also assuming greater importance, and in 1944 the company established its research and development department which has become one of the most important research centres in South African industry.

Modderfontein celebrated its golden jubilee in 1946. The following year AECI formed one of South Africa's first industrial pension funds, and in 1949

significant growth in many areas for AECI.

The Alkathene brand of polyethlene went into production at Midland; Perspex acrylic sheet manufacture started at Umbogintwini; the complex for chlorine, Arcton and other plastics at Midland started up; and a new sulphuric acid plant was commissioned at Modderfontein.

The first exports to South America began, and the company was quoted on the Johan-

Further plastics expansion came in 1972 when Duropenta's coated fabric and vinyl sheet division was taken over.

Then, in 1973, came the world oil crisis and the foundations were laid for many of the exciting developments now taking place.

The following year the R100-million nitrogen complex was commissioned at Modderfontein using coal instead of imported oil, and the Government agreed to the new PVC plant

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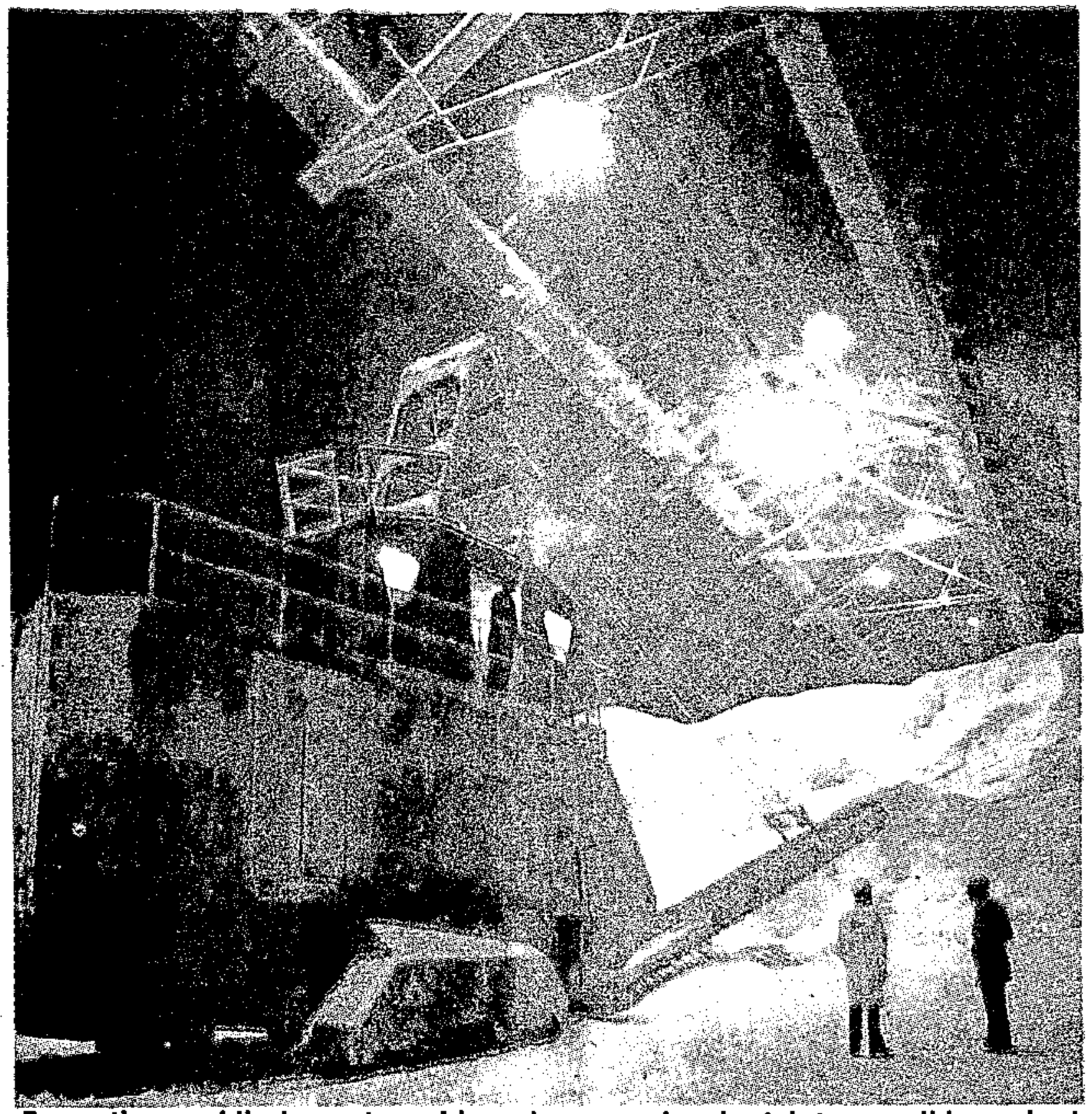
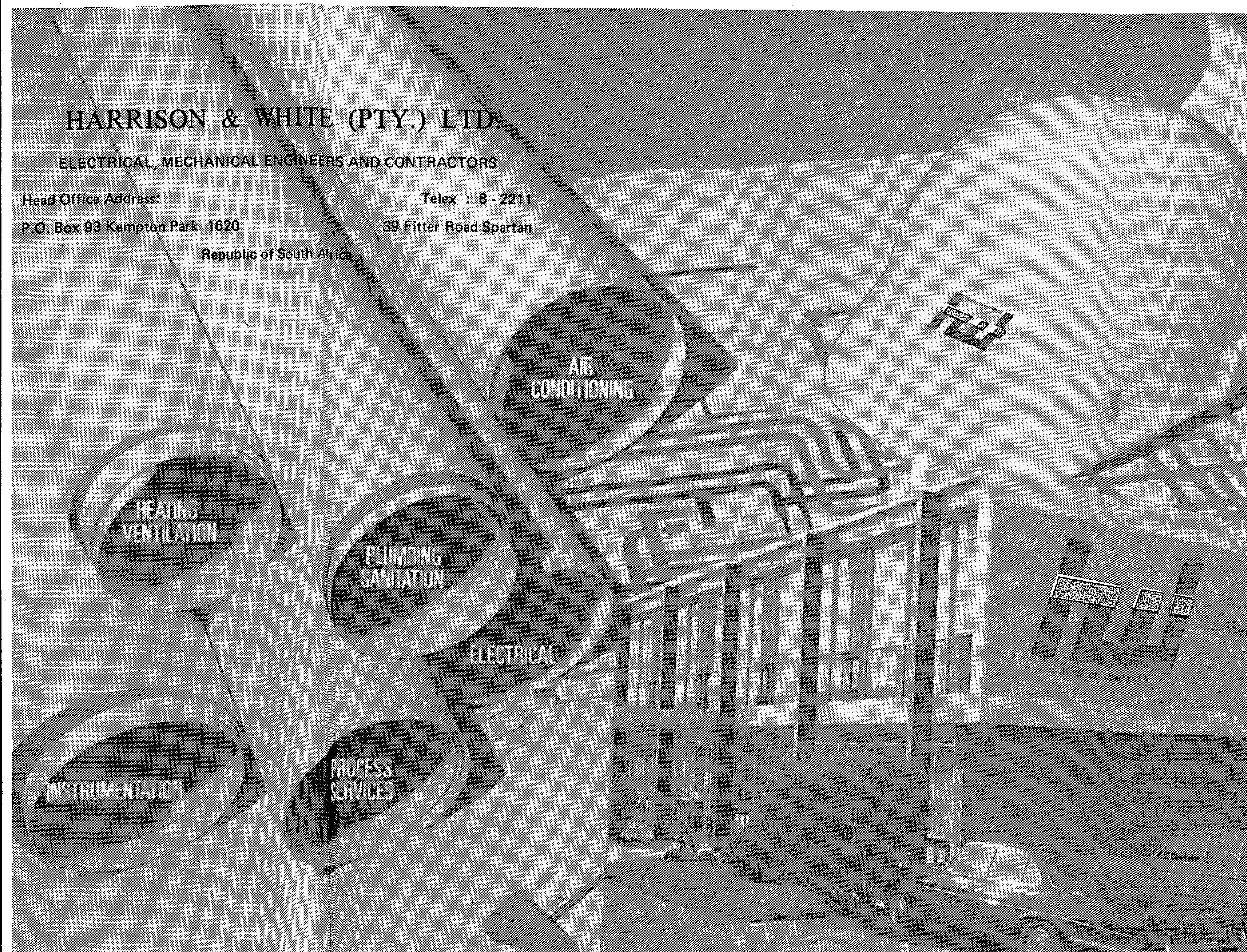


From the world's largest coal-based ammonia plant into a solid product suitable for use as a fertiliser and for industrial applications.



'Exciting' time of growth lies ahead for SA

SOUTH Africa is entering the most exciting decade of industrial growth and social developments, according to the managing director of AECI, Mr Denys Marvin.

After seeing Coalplex come to fruition as the climax of his seven years todate as chief executive of AECI, Mr Marvin said he now looked foward to a period of sustained growth for South African industry in which coal technology will make an even increasing contribution.

Formerly a top chemical industry executive with ICI in England, Mr Marvin looks at South Africa from an unbiased, international business background.

In a wide-ranging interview he sketched an exciting scenario for all who live in this country, but also sounded several crucial warnings of the potential mistakes which could lead to us losing some of our present immense advantages.

"The oil crisis has tended to divide the world into four categories of nations," Mr Marvin said. "There are the oil producers, who have assumed tremendous strategic, political and economic importance.

"Then there are the countries which are completely dependent on oil but have none of their own, like Japan, and a third group including United States and Europe which has some oil, but not enough to meet its internal requirements.

"The fourth group, into which South Africa falls, has rich coal resources or, in the case of Canada and Australia, significant oil and gas deposits as well.

"An impartial person, looking at the world to indentify where to invest for the best return over the next few decades, must be attracted to Canada, Australia and South Africa.

"If one then rationalised one's choice and left politics out of consideration, the country which probably has the figures you are looking at but which run into billions of tons. Additionally, we are to a major degree achieving energy independence with Sasol 2 and 3 improving the situation all the time.

"Then we have all the other things which really matter — gold, chrome, manganese, platinum and a whole host of other important minerals.

"The increased gold price, however long it lasts, can only be good news for South Africa because it means that, with our other resources and exports, we will not face a balance of payments problem in the immediate future.

"So the scenario is set for a period of sustained growth, with the finance available to support it, although we may well run short of the skilled people resources necessary to the desired growth.

"As I have told government, I don't believe my company will ever run out of money, but we do risk running out of skilled people and as an example of this we have just spent R200-000 to recruit 75 graduates from overseas.

Background

"To put this into perspective against our present background of unemployment, only about 11 million of South Africa's 25 million people are really economically active. My yardstick for this — and it is a practical one — is the proportion of the population which is economically active in terms of garment purchasing.

"So there is the potential for nearly doubling our internal consumer market for textiles and consumer durables generally, but we are inhibited by a large proportion of our population being untrained and unemployed.

"The pointers are for a sustained spiralling growth in both internal demand and exports — the more you grow, the more people you employ, the more money goes into the economy for purchasing, and so on."

This should bring tremendous

"The chemical industry in South Africa is uniquely placed to benefit from this. We at AECI are probably the best positioned chemical company in the world as we enter an area in which the price of oil has already risen dramatically and is likely to continue to do so.

Over 30% of our capital is in the form of such coal-based investments as our No 2 and No 4 ammonia plants, Coalplex, our PVC plant at Umbogintwini, and our subsidiary company Holland Electro Chemicals.

"Probably no other chemical company in the world is so fortunate and so well positioned to take advantage of the inevitable switch from petrochemical to coal-based chemical technology.

"Hydrocarbons were derived from coal a centry ago and while the rest of the world left this route some 50 years ago to become oil based, we have maintained a major interest in coal.

"Any country wishing to become independent of possible blackmail and the use of oil as a political weapon has to find an alternative hydrocarban and this is where King Coal is coming into his own again.

"The next twenty years will be very exciting, certainly as far as the chemical industry is concerned, and other sectors will equally have enormous challenges and opportunities.

"But there is one thing in having these raw materials and plans and quite another in knowing how to run them. In this respect, AECI has tremendous strength because we have looked ahead and planned for the rest of this century.

"We have a head start because we have already gone through the blood, sweat and toil of the last five years of getting our major coal based plants operating efficiently. Now the rest of the world is beating a path to our door — and to Sasol. We don't have a monopoly in this area, but we do have really significant advantages.

"For example, we opened

and knowledge we have gained. Additionally, our 300 000 tons a year ammonia/methanol plant based on coal is the largest of its kind in the world.

"I can now look forward to AECI becoming independent of imported chemical raw materials — with the exception of sulphur. We are also the only methanol producer in the country and have access to the best methanol technology in the world through ICI Ltd.

"Methanol could be required in the future as both a fuel and as a route to eythlene and other chemical raw materials.

"It will be an enormous challenge to get everything right, but one can see South Africa, with its vast coal resources, becoming a major international source of coal-based chemical feedstocks just as other countries are for petrochemical feedstocks. This is a far better course to take than just exporting coal.

Value

"Compare, for example, exporting a ton of anthracite at, say, R30 a ton and exporting a ton of PVC at R750 a ton into which we have put so much added value to benefit the South African economy, its industry and its people.

"It is not our responsibility to provide employment in Europe or Asia, but to use what a bountiful nature has given South Africa to create jobs and prosperity right here. The name of the game must be to add value.

"It is a fascinating vista with the potential for great dividends for this country.

"Unlike the situation in 1974 when we had a balance of payments problem, South Africa is now seen to be a good economic risk and so the investment will be available for plants and equipment to beneficiate our raw materials. But we will need trained manpower to exploit the added value opportunities.

"The whole of AECI is

country and not to export it. Charity begins at home and it is much better to employ more of our own blacks and whites than to provide employment in other countries.

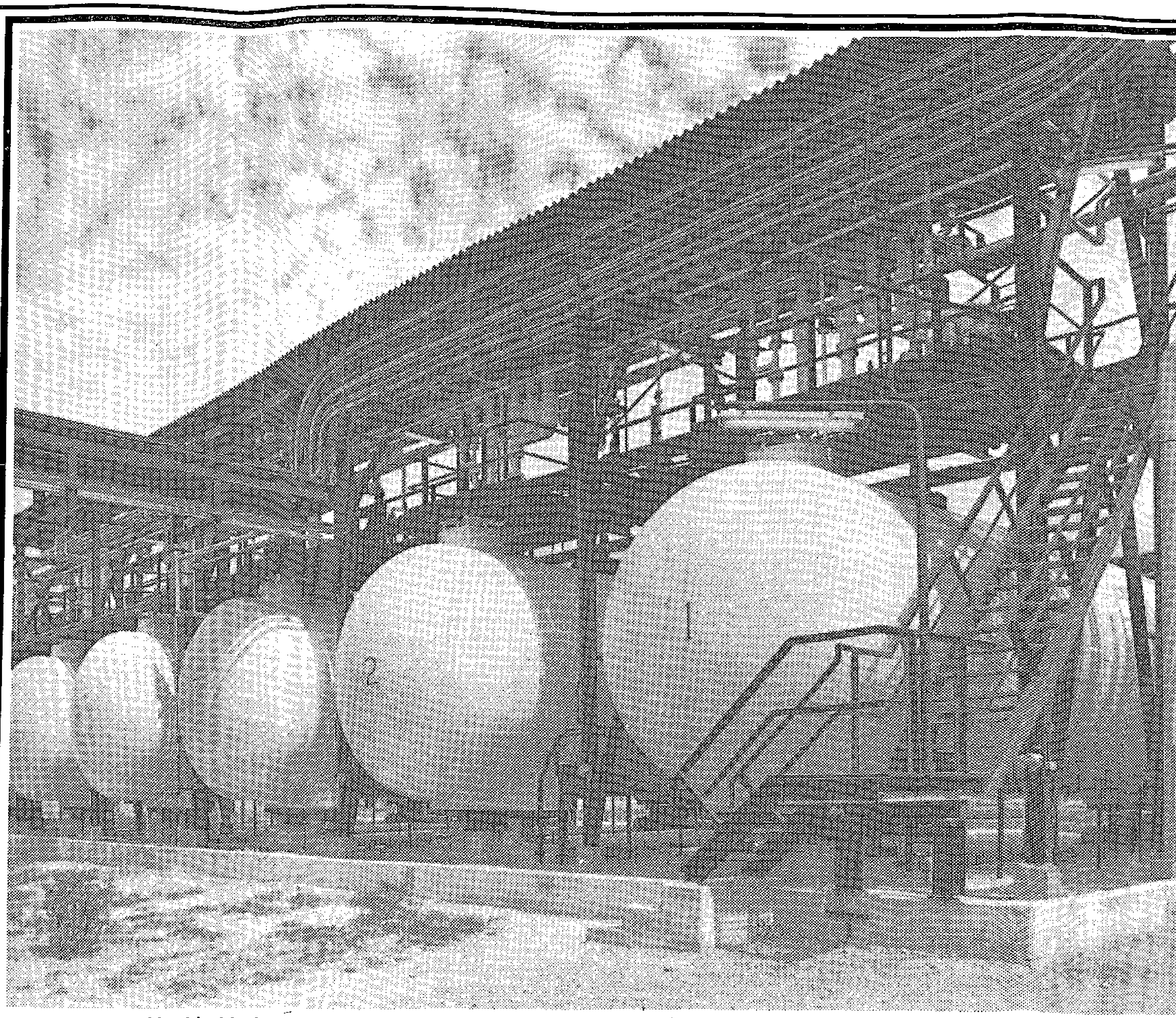
"We must take the long-term view and see how adding value will foster growth and increase living standards right through our community".

Mr Marvin said South Africa could make the same mistake as the Arabs by selling its natural assets without developing its society.

"As the Shah found out, the time to take the necessary action can run out very quickly.

Resources

"That is where the resources



Liquid chlorine storage tanks at Coalplex. The plant produces 90 000 tons of chlorine a year.

AECI forging ahead from its four major bases

THE industrial base from which AECI is moving so aggressively into new areas of coal technology comprises four principal factories located in the Transvaal, Cape, Natal and Orange Free State.

The newest is the Midland plant at Sasolburg which was opened in 1965 to use ethylene from the Sasol crackers as feedstock for polyolefines production.

Midland, with its 3 300 employees, also makes caustic soda, chlorine, industrial solvents, vinyl sheet and film, organic peroxides, fluorocarbon refrigerants and aerosol propellants.

The oldest plant is the complex at Modderfontein employing nearly 8 000 people and spreading over 4 000 hectares of one of the most beautifully

tre for the manufacture of commercial explosives, the only large-scale producer of ammonia and methanol from coal, and also turns out a wide range of industrial and agricultural chemicals including sulphur compounds, urea, nitric and sulphuric acids, ammonium nitrate and unreaformaldehyde resins.

A large farming operation was factory effluent to irrigate

world ranking for commercial explosives manufacture.

It has 2 000 employees and also makes blasting accessories, nitric and sulphuric acid, crop-protection chemicals, vinyl sheet and film and coated fabrics.

The Natal plant at Umbogintwini began producing explosives in 1908 and ten years later was converted to manufacture phosphatic fertilizers.

brightest future is South Africa.

"We have an abundance of coal, with reserves which vary according to whichever set of expansion in the form of an upward spiral, not just a cyclical period of growth with the risk of a downturn following it, Mr Marvin said.

the only 100 000 tons-a-year PVC plant based on anthracite in the world and we will use our position to leap foward into the eighties with the experience worthless without the people in it, who are without doubt our most valuable asset.

"Just think what it means to keep those added values in the

are prepared for South Africa to progress slowly, you can train people internally.

"But if you want to achieve the five or six percent growth rate needed to employ those coming into the labour market every year you will have to bring in skilled people from overseas.

"There is no way you can train the local population fast enough to take up the slack necessary to get the required expansion in South Africa's industrial infrastructure.

"Of course, AECI and other companies are contributing substantially to local education and training, but business generally may have to play a bigger role in these fields in the future to develop the skilled manpower on which its growth depends.

"We must be prepared to do whatever is necessary to develop the infrastructure of this country, mobilising the bulk of the population. One can foresee a possible ultimate solution to political problems coming through such economic developments," said Mr Marvin.

capacity for PVC production, was opened there in 1978.

es in the world.

It is the world's largest cen-

People are the biggest asset

PEOPLE are AECI's biggest single asset, according to Denys Marvin, managing director.

This view is echoed by all his senior executives as they plan future expansion to enable the company to fully exploit its world lead in the practical application of coal as a chemical feedstock.

Mr Marvin feels it is inevitable that AECI and other companies will have to step up the recruitment of skilled people from overseas if South Africa is to achieve the necessary economic growth in the coming years.

But he emphasises that everything necessary must be done to increase local training and eduational opportunities for all sectors of the population.

AECI spends over R400 000 a year on direct educational assistance. This includes grants to universities, technical colleges and schools; university scholarships for the children of employees; open scholarships in engineering and chemistry; and post-graduate research fellowships.

AECI is an equal opportunity company with a unified pay scale so that both promotion and remuneration are strictly on merit, without regard to race or sex.

The research department at Modderfontein is a leader in its field and provides attractive employment opportunities for those interested in research. Sixty of its 200 staff are graduate scientists or engineers.

Housing is provided for hundreds of Modderfontein employees who also benefit from extensive sports facilities.

AECI has Cecil Rhodes to thank for its second oldest plant.

Rhodes got so annoyed at what he regarded as Nobel's exploitation of its dynamite monopoly in South Africa that he opened a rival explosive plant at Somerset West in 1903.

Nobel and Rhodes' De Beers Company got locked into a bitter battle for the explosives market which ended with their merger and the formation of AECI in 1924.

Somerset West and is now second only to Modderfontein in

and now make refinery gas, c dustrial solve sulphate, sodiu urea, veterina perspex acrylic

A feature of their space for

At one stage AECI was also ning a major plex at Richa would have use produce ammo ed operations.

Fortuitously, shelved when t cided to go the feedstocks an expansion at t Modderfontein

R18m safeguards combat pollution

SOUTH Africa is a beautiful country and R18-million has been spent at Coalplex to ensure that the quality of our environment is preserved.

The green fields of the site are now harvesting a rich chemical crop from our mineral resources.

An industrial chemical complex the size of Coalplex has the capacity to influence the climate around it and to be a major polluting source over a large area.

But even before the first of the 4,5 million bricks which went into its construction was laid, stringent safeguards were built into the design to ensure that it met the highest international environmental standards.

Even the choice of the technology used for the different processes was governed to a large degree by environmental considerations.

For example, the generation of acetylene at Coalplex is by a dry process, not the wet one which would have created effluent problems.

□□□

This also enables the lime by-product to be used for cement manufacture instead of creating lime dumps.

Most plants overseas use chlorine water or sodium hypochlorite techniques to purify the acetylene, but Coalplex has a sulphuric acid-based purification technology and the spent sulphuric acid is used to manufacture fertilizers.

Chlorine is a toxic gas produced in large quantities at Coalplex and often in the past has been made commercially by the electrolysis of brine in a mercury cell.

But not at Coalplex. There a diaphragm cell is used, which eliminates any risk of mercury contamination of the environment.

The chlorine diaphragm cell also enables the liquid effluent to be recycled and no waste is discharged to the atmosphere but is removed by two caustic soda scrubbers.

The scrubbing system produces a hypochlorite waste which is converted by catalytic action to brine for recycling.

The basis for the whole environmental control system at Coalplex is, wherever possible, to segregate any waste products and recycle them with stringent safeguards to prevent any leakage or spillage.

□□□

Anything discharged is painstakingly treated and purified.

For example, any carbide plant is a potential nuisance but over R3-million was spent on the Coalplex carbide unit to put in nearly 5 000 bags to filter dust from the exhaust gases.

Dust extraction is built into the design of all raw material and product handling systems and the acetylene and PVC plants have elaborate air cleaning equipment including cyclones, rotoclones and bag filters.

Any acidic liquid waste is neutralised by lime and eight dams provide buffer storage for 26 million litres of treated water

The only water from Coalplex which goes into the Taaibosspruit has passed through flocculation and filtering systems which ensure that it meets government standards.

It is continually sampled as a back-up to the stringent controls exercised by each individual plant.

Noise is an increasingly serious pollutant in our daily lives, but despite its enormous size, Coalplex generates noise no worse than in the average urban residential area during daytime.

Even within the plant, the engineering design keeps noise levels down to below 85 decibels for the comfort of those working there.

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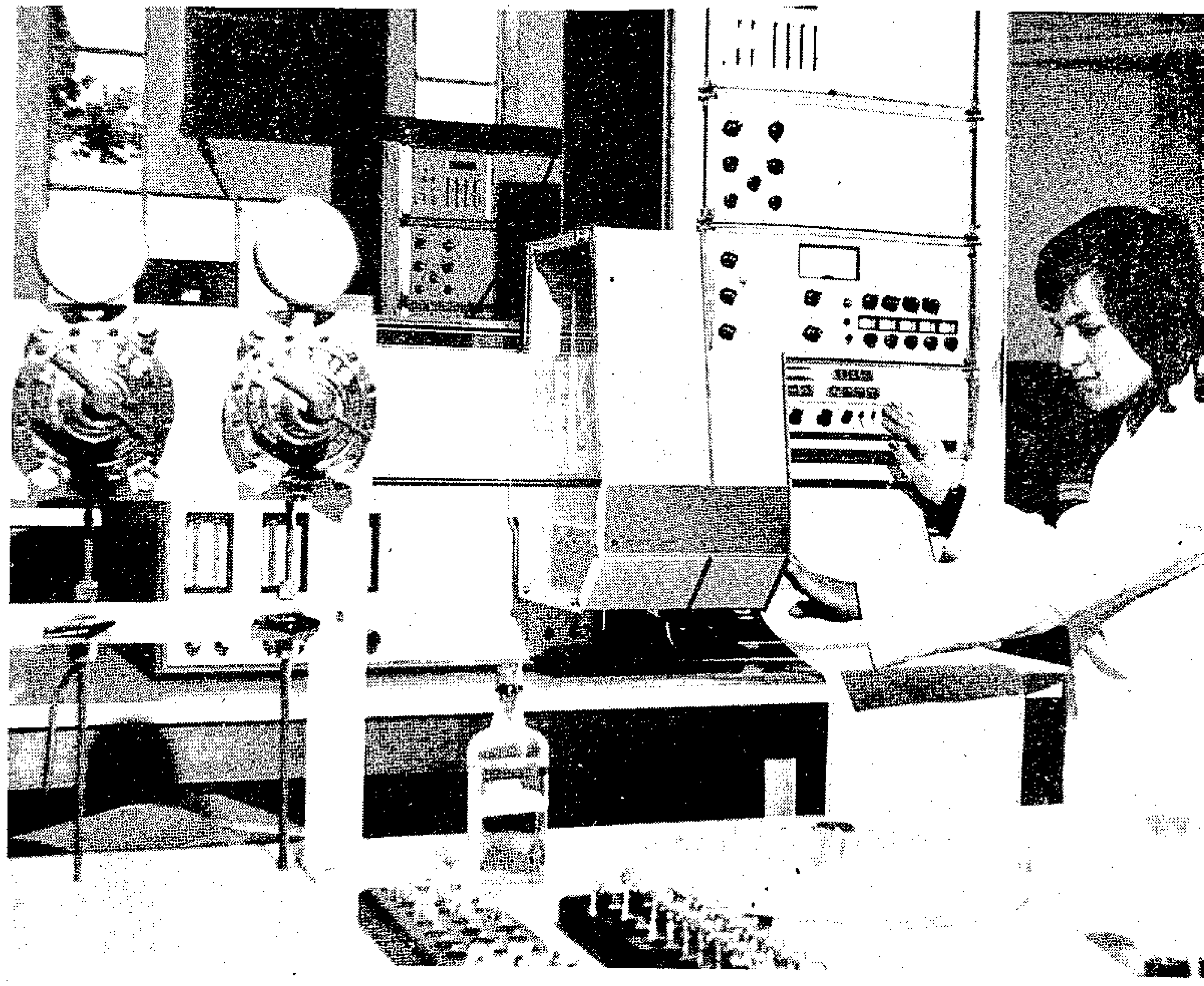
The cost of ensuring that Coalplex provides a good working environment with a minimum impact on its surroundings, has been very high.

But that R18-million was regarded as an essential investment to preserve the quality of our environment.



Automated gas chromatographic equipment gives extremely acurate analysis of liquid samples from Coalplex. R18-million was spend on environmental control measu

Planning flair and determination led the Coalplex project

COALPLEX has proved a classic case study for the virtues of having professional project managers in overall control of major construction or industrial installation ventures, operating within prescribed commercial objectives and subject to formal financial controls.

They are a comparatively new management breed — men with professional qualifications in various disciplines who have the administrative flair to oversee all the complexities of a big project.

In the construction industry they usually have an architectural or quantity surveying background. When it came to choice to take overall on-site responsibility for the Coalplex project.

Wherever you go in AECI, you hear nothing but praise for the way that Coalplex met its construction deadlines and came smoothly on stream. Mr Nieuwoudt attributes that to close teamwork and extremely detailed planning.

"We all became completely involved and committed to the project, working long hours and determined to get Coalplex up and working on schedule," he said.

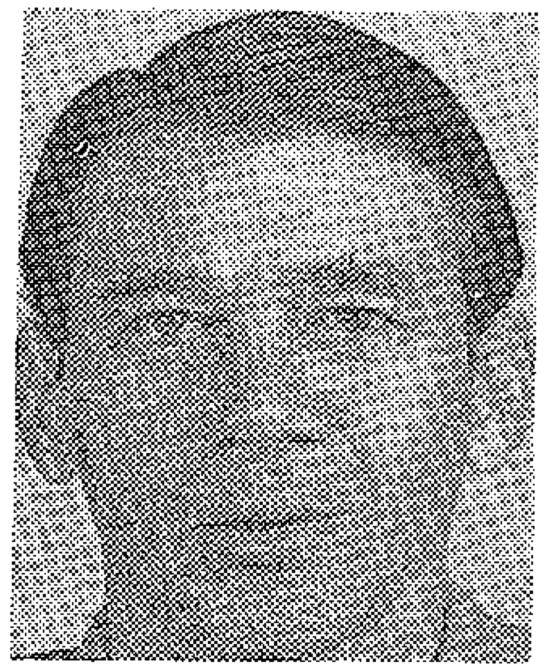
Plants

most every action was plotted well in advance with the time and the person responsible marked against it.

"Obtaining technical staff was a problem — there were just not enough in South Africa although the construction took place during a time of economic recession.

"So we recruited from overseas as well and I have the greatest admiration for those families which uprooted themselves and travelled 10 000km to Coalplex and settled in remarkably well.

"Everybody became so committed to Coalplex that I can



Dries Nieuwoudt ... key men

pletion as the objective," Mr Nieuwoudt said.

"Our target was beneficial operation. The cost and the implications of Coalplex were so enormous that it had to be functioning efficiently right on target.

"Every individual plant was tested and brought into readiness and then co-ordinated with the others so that we could bring them on line in a planned sequence.

Target

"We started up the acetylene plant within seven days of the

Treasure store of coal date back millions of years

THE coal harvest which South Africa is now reaping to fuel its breakthrough in plastic technology was planted over 200-million years ago when much of our country was covered with inpenetrable terrestial swamps and forests.

In fact, our treasure store of coal is trapped solar energy. The process by which those ancient swamps and forests used the sun's heat and light to convert carbon dioxide from the air into carbon compounds was the first link in the chain of events which has culminated in the modern man-made triumph that is Coalplex.

was much colder than it is now.

It is believed that our plants and trees shed their leaves every year, forming dense layers of decaying vegetation in the swamps and forests of the Cape, Natal and Transvaal.

But even then we had abundant sunshine which, coupled with the moist atmosphere, caused plant life ranging from minute algae to giant trees to flourish.

As they decomposed, the chemical changes to this plant life included hydrolysis, reduction, oxidation and condensation, as the fungi and bacteria created biological action.

When the Voortrekkers arrived in the Transvaal, they identified some coal deposits but it took the gold boom on the Witwatersrand to stimulate mining on a significant scale, initially at Boksburg, Springs and Steenkoolspruit.

The highly significant finds south of Vereeniging were not made until the late 1870s and early 1880s, with production starting at Coalbrook near Heilbron in 1896.

How much

We still don't know accurately how much coal we have in South Africa.

The Petrick report of 1975 estimated that we have as much as double those guesstimates, but this whole area is highly controversial.

At our present rates of extraction, our coal reserves might last 300 years — some say even 600 years — but the main point of concern for conservationists is the boom in exports.

At present about 24 million tons annually, they will jump to 44 — million tons by 1986 as capacity at Richards Bay increases.

Much of this export coal is of high quality and the most attractive as a chemical feedstock.

One says we have enough of this vital raw material to exploit to the maximum growing world and domestic demand for its use as an energy source, just as the Arabs are doing with their oil.

Sources

The industrial rush to alternative energy sources such as nuclear, biological, solar and hydrogen could lead to a breakthrough in energy technology which would leave us with our vast coal reserves virtually untouched and no longer in demand.

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pin our whole in

Coalplex, it was naturally a chemist who got overall responsibility, but one with a unique background to qualify him for this unusually tough assignment.

His name is Dries Nieuwoudt, who majored in chemistry and mathematics at Stellenbosh and joined AECI in the Modderfontein laboratories in 1952.

He has stayed with the company ever since and gained early experience in project work with the building of methanol, formaldehyde and ammonia plants.

His experience as project manager for the commissioning of the massive No 4 ammonia plant at Modderfontein made Mr Nieuwoudt the natural

"Every one of the five plants making up the complex had its own project manager because each of them was a major project in its own right. The same applied to the supply services function feeding the plants, so we had six specialist teams which concentrated on their own areas with very little switching of personnel between them.

To back up the specialist groups and give us more overall flexibility we had another technical team called 'The T-Bugs' who could be moved about as required.

"When you include all the outside suppliers it was a complicated set-up which demanded very detailed planning. Al-

hand the number of key personnel who left while we were putting it together."

During peak periods there were as many as 4 500 workers creating Coalplex, often working shifts right round-the clock with the supervisory staff continuously on duty.

Over 8 000 tons of structural steel, 50 000 cubic metres of cement and 4,5 million bricks went into the construction.

The strict environmental standards being applied — costing R18-million alone — added to the complexity of the task. There was also a largescale onsite training programme which had to be administered.

"There is a tendency when building a plant to regard com-

viously and we were producing PVC from the carbide route in December 1977 as we had projected."

Coalplex is probably the most efficiently organised industrial construction project of its size and complexity ever undertaken in Africa and achieved project management and engineering standards rivalling the best in the world.

It tested this country's resources probably more than anything before it, particularly in respect of the human skills and expertise required.

The benefits of that experience will be felt in the years to come as South Africa enters the predicted era of rapid industrial growth.

South Africa, in that far distant time, was a strange land. Many of the plants — including weird fern-like vegetation up to 30m tall and the trees in the dense forest areas — have disappeared forever in their natural state.

The secrets of those prehistoric biological freaks are locked inside every lump of coal we mine. Now, as they emerge into the sunshine again for the first time, they play a crucial part in the lives of every one of us.

When South African coal was formed, the country

called peat was formed as the first stage of coalification.

This chemical process was combined with many physical forces as South Africa's landscape changed, often slowly, sometimes with dramatic volcanic action, to what we know today.

Some of the decaying vegetation was transported over long distances by water movement.

Cold winters caused the trees to lose their leaves and also allowed the wind to blow through the forests, mixing large quantities of dust and sand into the decaying vegetation.

This was in sharp contrast to what was happening at the same time in the then much warmer northern hemisphere, causing our coal deposits to have far more mineral or ash content dispersed through them.

Difficult

In consequence, much South African coal is more difficult to wash than that from the American and European coalfields and has a higher ash content and lower calorific value.

That is why there is currently so much concern that we conserve our top quality coal and anthracite for use as a raw material to develop our economy rather than simply burn or export it.

Gradually the forests and swamps disappeared as they were covered by layers of sedimentation.

The pressure of these overlying layers of sedimentation, coupled with geological action, compressed the decayed vegetation into a solid mass.

Each metre of coal mined today represents over 20m of humus material, which under the pressure and heat at the depths to which it was buried continued to evolve as carbon dioxide, water and methane escaped from it and its carbon content became enriched.

Coal is believed to have been first exploited by man in South Africa when aborigines used it for smelting to make weapons with which to hunt and fight.

Settlers from Europe first discovered coal in Natal in 1840 and began mining it there some 40 years later.

Meanwhile, coal had also been discovered at Cyfergat in the original Cape Colony and a colliery was opened at Molteno in the mid 1960s — laying the foundations for the present mammoth coal mining industry.

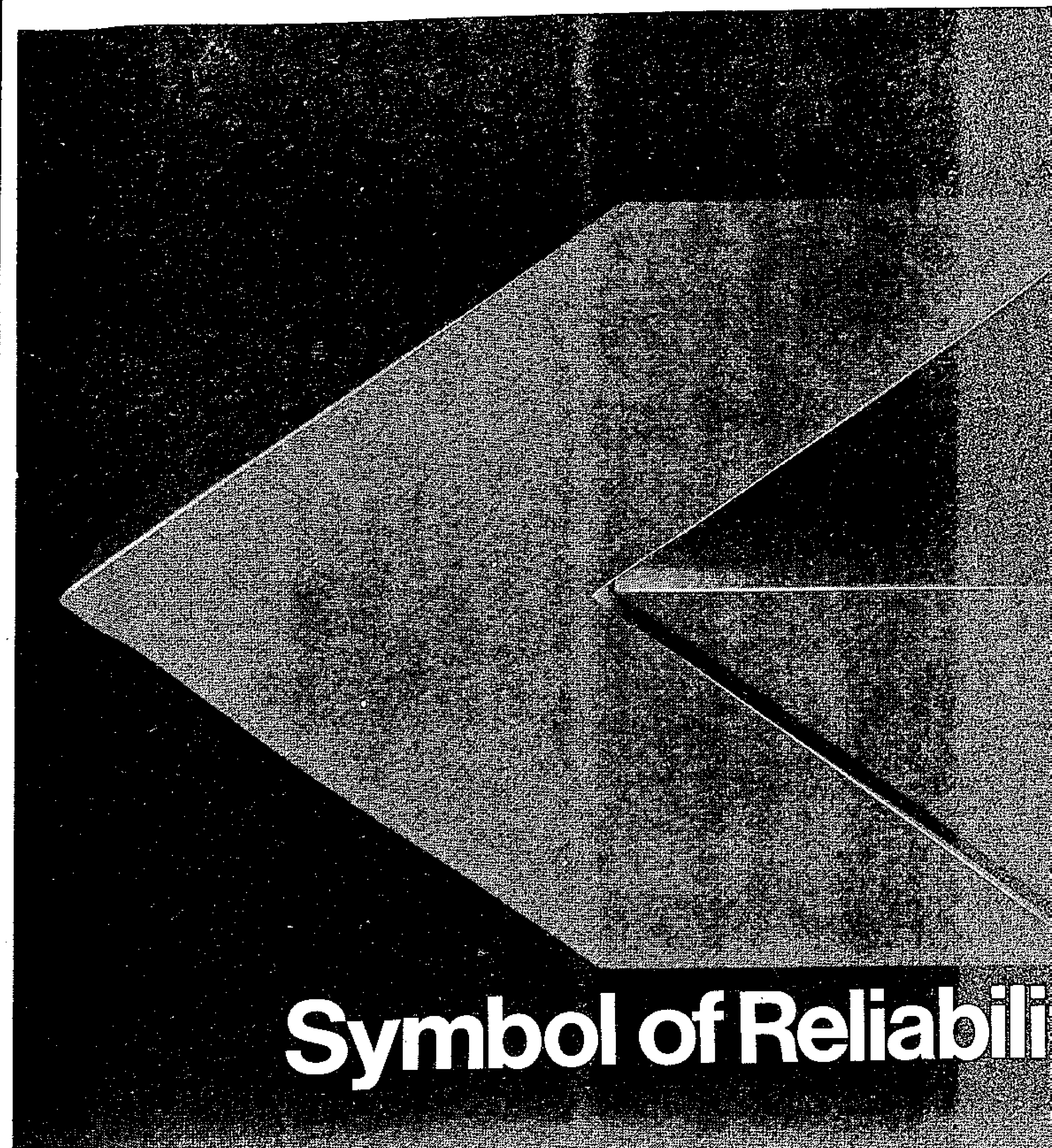
of economically recoverable raw bituminous coal out of total reserves of over 81 000 — million tons.

Subsequent investigations

1986 will be governed by world demand and government policy. There are two conflicting schools of thought.

that such a breakthrough is a long way off and highly speculative. In the meantime, we should be harbouring our coal reserves —par-

our coal into materials and ducts to gene everyone wi borders.



Coal — so valuable it is a shame to burn or export

COAL is such a wonderful material that it's a shame to burn it, according to AECI's technical manager, Dr Colin Schlesinger.

It is a view shared by most of the company's executives, who see South Africa's coal reserves as a treasure house from which a wealth of raw materials crucial to our future economic growth can be extracted.

South Africa is an exporter of energy, just like the Arabs. In fact it has more energy reserves in coal and uranium than most Middle East oil producers together.

"Of course, there is a cash deficit in our energy balance of payments because our oil imports are expensive and our coal exports relatively cheap," says Dr Schlesinger.

"In a way, we are getting oil from coal through this export trade, although we need top preserve our high-grade coal, particularly anthracite and coking coal.

"Although our total coal reserves are at least 25 000-million tons and could last us from 100 to 300 years, only a small proportion of this is of a high-grade which might ultimately be of more value to the country as a chemical feedstock.

"Coal is a wonderful substance and we still don't know very much about it. But what we do know shows what exciting possibilities it has.

"Everything you can get from oil you can get from coal — it is just more difficult to extract.

Judge

"History may judge oil as a terrible squandering of an irreplaceable resource — only 5% of world supplies is used as a feedstock and the rest burnt.

"We don't want to make the same mistake with coal."

Dr Schlesinger pointed out that the oil crisis had stimulated such a massive search for alternative energy that South Africa's coal might become virtually obsolete as an energy source within a century if alternative fuels like hydrogen from seawater become viable alternatives.

Talk to anybody at AECI about coal and they become enthusiastic.

"We see coal as enormously important for the growth of industrialisation in South Africa — not as a fuel, for which there are alternatives, but as our only source of carbon," says deputy managing director, Ronnie Webb.

"It is too valuable to burn, except as an interim measure until alternative viable fuels are available, or until we can develop renewable biological carbon resources.

"Coal gives us a great deal of independence and South Africa has fortuitously been thrown into the forefront of coal technology, giving us the opportunity to exploit our coal by producing finished products from it with added value in export markets."

Dr Schlesinger points to the fact that burning coal is really a "rather boring and uninteresting activity" producing only ash, heat and carbon dioxide.

"But when you heat and gasify coal under controlled conditions all kinds of exciting things happen," he says.

"Instead of carbon dioxide you get carbon monoxide, which is the starting point for a whole spectrum of chemical processes.

Range

"You can capture the hydrogen from water and nitrogen from the air using carbon monoxide and obtain a wide range of organic molecules such as paraffin, motor fuels, tars and waxes.

"The plastics age was conceived in the original coal age, developed during the oil age, and has now been re-adopted by the new coal age.

"Just about everything we use has, or could have, a coal content and our coal is remarkably cheap by international standards.

"A ton of coal costing R12 is worth R80 in Germany, for example, so just think what a competitive advantage that gives us in world markets for coal-derived products and the cost of the energy needed to produce them."

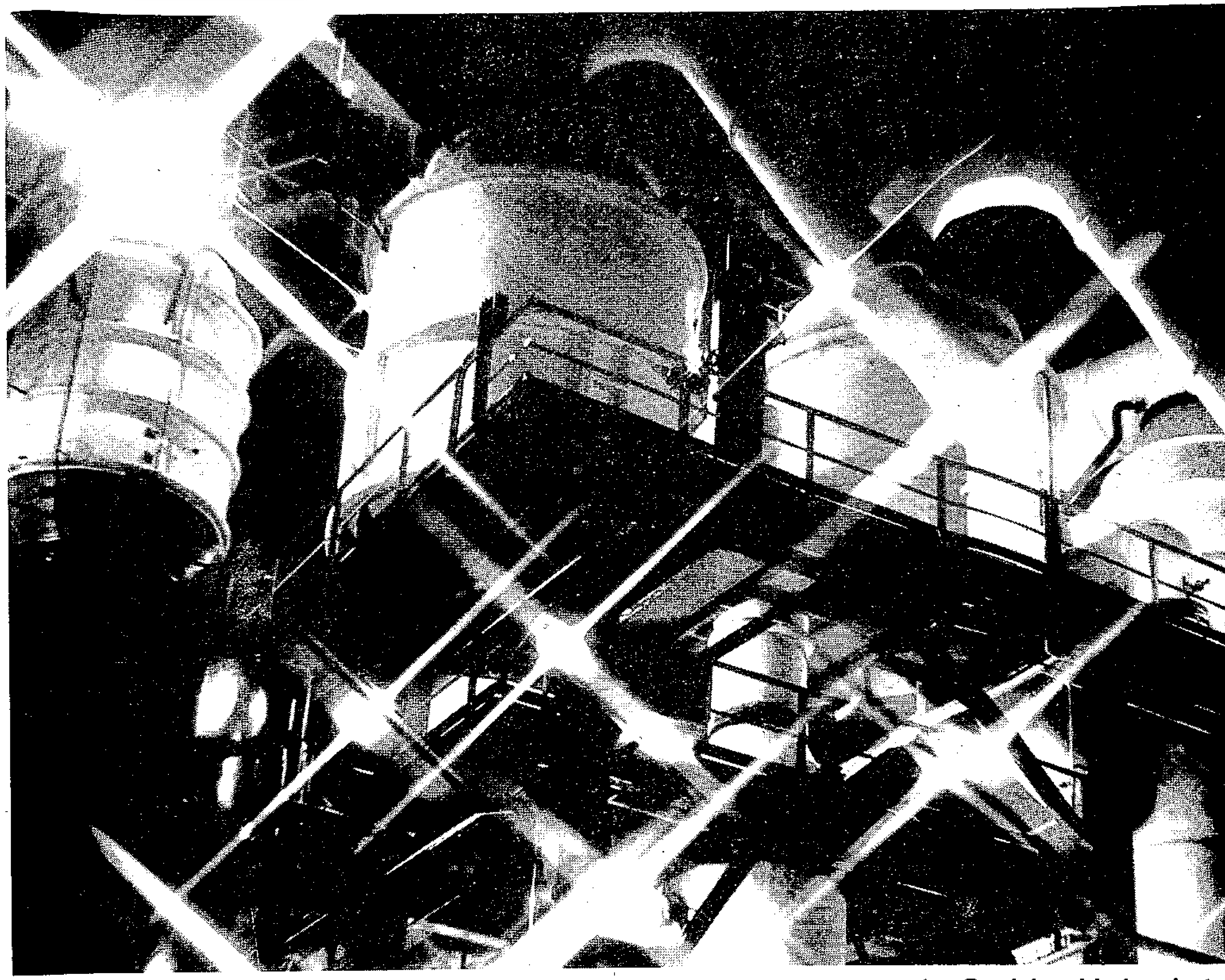
Although Dr Schlesinger believes natural materials will still have an important role to play in the future, he forecasts that they will be increasingly replaced by synthetics which will be cheaper to fabricate.

Most of these synthetic materials will come from coal.

In fact, we may even end up eating the stuff. The Germans, during World War 11, made edible fats from coal.

But the South African taste for steaks is by no means threatened by AECI's coal technology plans.

The company has developed coal-based processes which will provide food supplements for our cows to produce lean and juicy meat.



The 100 000 tons per annum of caustic soda produced in the diaphragm cells at the Coalplex chlorine plant a... strength in this Escher Wyss evaporator.

SA surging ahead on the world's growth charts

IF you want to measure a country's industrial growth, its capacity to produce caustic soda and chlorine is as useful a guide as its balance of payments situation.

Now, with Coalplex on stream, South Africa's industrial strength really starts to show up on the world charts.

Whereas sulphuric acid used to be the most common barometer of industrial growth, caustic soda and chloric production shows just how internal markets and manufacturing industries are developing.

Coalplex makes this country virtually self-supporting in these chemicals and offers the prospects of an export capacity.

Producing chlorine and caustic soda are integral ...

products but essential contributors to the viability of Coalplex.

Coalplex will produce 100 000 dry tons a year of caustic soda and consumes 170 000 tons a year of salt from Walvis Bay to do it.

The electrolysis of this salt in solution as brine also produces hydrogen and ...

Most of the chlorine goes on to contribute to the manufacture of PVC, although there is provision at Coalplex to expand production and sell this off.

The best known use of chlorine is for water purification — it is calcium hypochlorite we use in our swimming pools — but it is ...

sols and in refrigerants.

Caustic soda reaches us after being applied in a whole range of chemical processes. Most goes into paper and pulp, it is significant in metal extraction processes, and also in soap and other cleaners.

Our future food production may also come to de...

route so they are not by- chlorine.

paper manufacture, in aero- tic soda.

gum, cotton a

The coating of fabrics with PVC, either by laminating a film of PVC onto the backing fabric or by the spreading of a PVC paste, is becoming increasingly important. There are many fashion uses for vinyl-coated fabrics, including clothes and handbags

PVC is a booming business

PVC is the material of the future, according to Malcolm Weir, operations manager of AECI's plastics division.

"With Coalplex producing 100 000 tons of PVC a year, we are now a world-scale producer.

"For the first time we can develop export markets as well as satisfying the home market — where expansion should come rapidly.

"This export opportunity was not possible before, but it is becoming increasingly viable as the gap between coal and oil prices widens.

"Only minor capital additions at Coalplex will enable us to increase production of PVC and we have allowed space to double capacity to 200 000 tons annually, if necessary."

PVC is our most important plastic in South Africa.

In the past 30 years it's been used to insulate and sheath electrical cables — just one application in which it has virtually eliminated the use of natural rubber.

In fact, we led the world in 1948 when the SABS drew up the first acceptable specification for PVC compound as cable insulation.

The early prejudices against PVC for piping water have long since disappeared and it is now accepted by most municipalities.

It is resistant to corrosion, light and easy to connect, and has increasing applications underground in the mines where its flexibility prevents crackings in pipes made from other materials.

In supermarkets there are thousands of plastic bottles — as much as a tenth the weight of glass — which are tough and sterile.

PVC is worn and used as soles of shoes and boots — particularly in industry, where there can be acid spillage.

Cars contain a lot of PVC, particularly for trim and upholstery. It coats fabrics with either a lamination of PVC or by spreading a PVC paste onto backing fabric.

The same techniques are used to make suitcases, handbags, furniture, upholstery and clothing.

The current boom in vinyl roofs on cars depends on the availability of PVC from AECI's Coalplex and Midland plants.

PVC is in swimming pool liners, toys, curtains, floor tiles, buckets, hose pipes, records — the list is almost endless and steadily growing.

Modder plant kept the Allied gun firing and helped win a war

THE ability to develop South African chemical technology, particularly in the use of coal as a feedstock, stems back to a significant development in 1932.

That was when AECI opened the country's first ammonia synthesis plant at Modderfontein.

It was in many ways the catalyst for a chain reaction which sparked off our desire to be self-sufficient in raw materials, which in turn helped to win World War II for the allied forces and led to the training of specialists in instrumentation without whom no chemical plant could ever be constructed.

Until No 1 Ammonia plant came on stream, all the nitrogen for explosives produced here came from imported Chile salt petre. That plant set us off on the road to independence from nitrogen imports which are of strategic importance for both explosives and fertilisers.

Just how strategically important was demonstrated during World War II when the ammonia from Modderfontein virtually kept all the allied guns firing during the Middle East campaigns.

"No 1 Ammonia represented the start of a sophisticated chemical industry in South Africa," AECI's deputy managing director, Ronnie Webb, said. "For the first time we had a chemical plant which, in its sophistication, rivalled those overseas."

It was a high pressure operation. This had a ripple effect right through South African industry because we had to both import and train the necessary instrumentation engineers and technicians.

"Many of those people subseqently helped other industries to become established and for a long time we were virtually doing all the instrumentation training in South Africa."

Instruments are the eyes and ears of a modern chemical plant, continuously monitoring the flow of materials, the pressures of gases, temperatures and countless other data.

If a problem arises, the instruments identify it first and often take remedial ac-

tion faster
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Coalplex,
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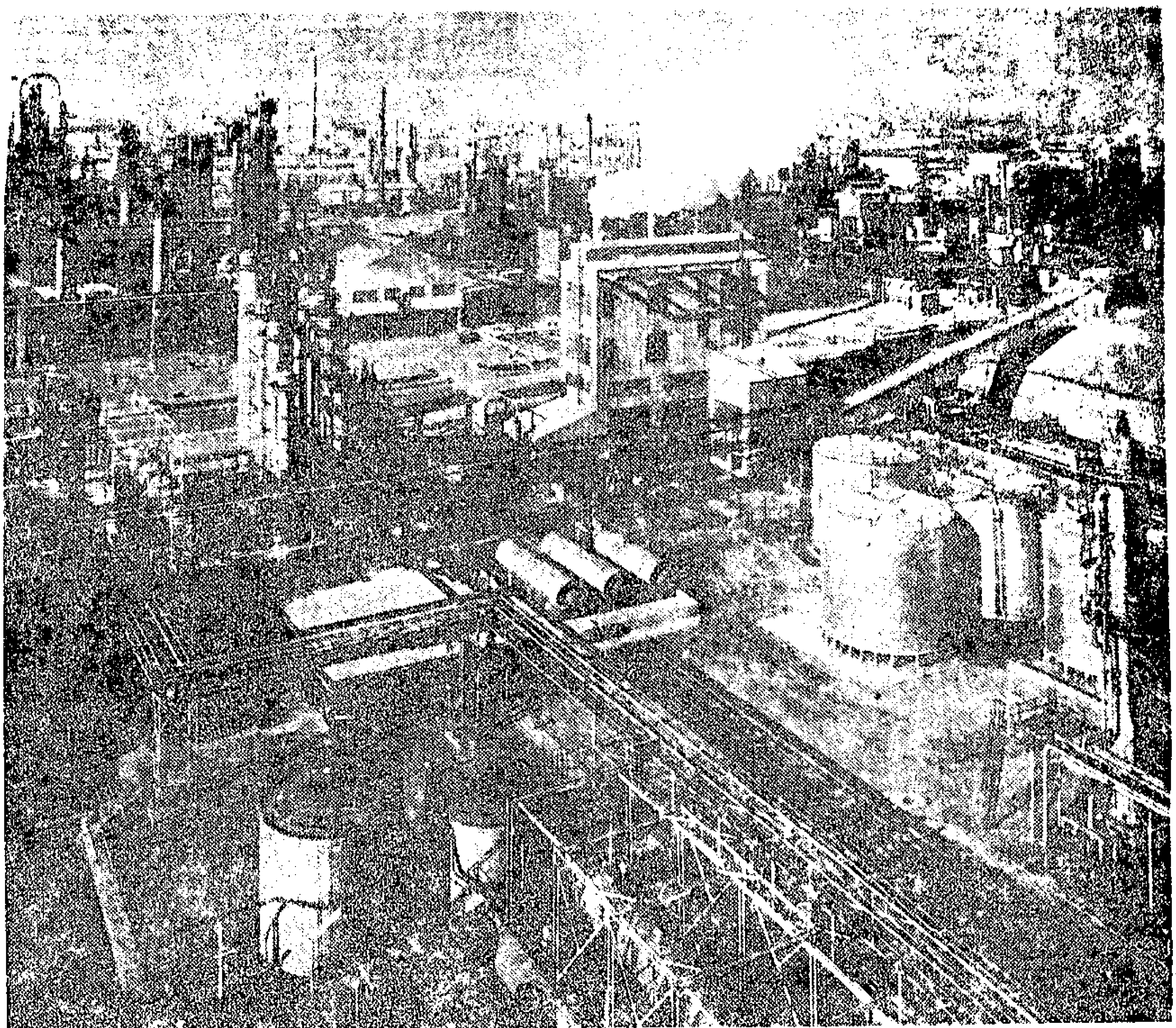

Sasol 2 — a great beginning. Now, about five years later, it has its own town.

Star 25/12/80

Secunda heralds a new life-style

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● The SA Property Owners' Association conducted a tour of the new town of Secunda at Sasol 2. FRANK JEANS says there is much to be learned for future town development.

If new communities are to spring up throughout South Africa to meet the demands of the mining and industrial build-up, there are valuable lessons to be learned from Secunda—the town on the doorstep of the Sasol 2 giant in the eastern Transvaal.

If the vast Sasol projects have pitched the country into the oil-from-coal business, giving a self-sufficiency undreamed of, they have also heralded a new era of town development, with the folk of Secunda the forerunners of a life-style vastly different from what many South Africans have always come to accept as norm.

PROTOTYPE

Much has been written about the need for this country to realise that in times of rampant inflation and spiralling costs, homes just "ain't what they used to be."

There is little doubt that Secunda is the prototype of the spread of new towns which must come if future housing demands have to be met, and the 4m homes by the end of the century served by mushrooming industries become a reality.

Planners ... here is one might well look again at this model in the highveld.

The Sasol Townships Company, developers of Secunda, has much to be commended for. In less than five years

the planners, out of sheer necessity amid world oil crises, have created out of about 1 000 ha of virgin veld a well-serviced town which will eventually be home for 25 000 people.

It has a CBD, hotel, shopping malls, schools and church sites — all the amenities to sustain a town which is in the heart of a power complex.

They have looked far beyond Sasol too, and see Secunda as the springboard for a new industrial age fanning out around the Evander-Kinross-Trichardt triangle.

And what is even more remarkable is the fact that it has been a "man-haul" town with every brick and bag of mortar being transported from as far as Benoni and all points west.

There was no other way, and it was an operation which pushed development costs to R7 000 per 1 000 sq m.

There are now 4 124 houses and they are being built at a rate of 25 a week which again says much for the concentration of labour and production levels. The housing bill so far is R120m.

Sasol Townships has also made the neat homes an attractive buy, with the purchaser benefiting by a four percent bond interest rate.

The cost of the house too, is competitive considering the high development costs — R15 000 upwards, plus R7 000 for the stand.

They are the plus factors about Secunda, but there's another side to the equation.

One would have thought that in a new town of the eighties, there would be plenty of scope for imagination of design and aesthetic appeal, with lots of landscaping, "horseshoe" and cluster effects and a lot less of the "strip" style which is certainly the feature of Secunda.

Of course, such concepts would only increase the burden of costs, but if the total cost of Sasol 2 and Sasol 3 a kilometre away, is expected to reach the R5 500m mark, it's reasonable to suppose that a few million more for the good of a town's environment would never be missed.

The homes — from 105 sq m on stands of 650 sq m to 1 400 sq m — are in a high-density situation, with the "stripping" style providing little chance for space and must demand a great deal of good neighbourliness.

Even allowing for the newness of Secunda to wear off and for the hedgerows to begin to sprout and the parkland areas to become more lush, there will be a tightness of living which will be difficult to shrug off.

Certainly, Secunda is ... the start of a great new development process, and it will take a lot more people and places to shake off the "mundu" image.

One can only hope the planners look at what is lacking at Secunda.

As the Sasol 2 and 3 complexes start munching their way through a coal seam stretching from Springs to Standerton and digest 27m tons of black wealth a year to convert into even more precious crude, there will be a great people intake for the area.

Hopefully, the sprinkling of new towns will have much more living room — despite rising costs — and a greater feel of permanency.

For it should never be forgotten that the mighty Sasol sisters, in the long run, are there to serve the needs of the people — not the other way round.

Yard men probe SA Salem link

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RDM 25/2/80

Staff Reporters

SENIOR Scotland Yard detectives arrived in South Africa yesterday to probe a possible local link in the mystery saga of the Salem which sank off the west coast of Africa in January without her valuable cargo of oil.

Chief Superintendent Peter Griggs and Detective Inspector R Golding spent most of yesterday in the company of Colonel Nollie Hulme, head of the Johannesburg Commercial Branch of the SA Police. They will spend the next few days in Johannesburg but might extend their inquiries to other centres.

The Afrikaans Sunday newspaper, Rapport, yesterday named a Johannesburg businessman, Mr Jim Shorrock, as being connected with the affair.

The newspaper said Mr Shorrock, of Young Avenue, Houghton Estate, a director of the company, Haven International, was instrumental in a deal made by international oil dealer Mr Fred Ed Soudan.

The newspaper's account of the saga is that:

Mr Soudan, a Lebanese living in Houston in the US, attempted to get loan facilities in South Africa to buy the ship. Volkskas Bank apparently furnished him with a credit letter to Mercabank enabling him to borrow R12 300 000 for the ship.

The transaction was carried out by the Marine Midland Bank of London which in turn guaranteed the money to the ship's owners, Pimmerton Shipping Ltd of Monrovia, Liberia.

Thereafter Mr Soudan gave the ship a new name, the Salem, and sent it to Kuwait to bring a cargo of oil to Genoa, Italy, for Pontoil. But four days out of Kuwait the oil was sold to Shell Oil International in accordance with normal open market methods.

En route to Italy the ship docked at a port, pumped the oil ashore and then refilled her tanks with sea water.

The ship was then scuttled off the coast of Senegal.

Lloyds of London, the insurers, became suspicious about the claim for the ship and its cargo and began investigating.

A crew member has apparently said they were paid in Swiss francs to carry out Mr Soudan's orders and keep quiet.

Last night the managing director of Volkskas, Mr D P S van Huyssteen, said he was unable to comment on the report that Volkskas had been involved in the Salem sales operation.

The Rand Daily Mail yesterday tried to contact Mr Jim Shorrock, but without success.

Mr Shorrock was described by acquaintances as "a pillar of the community". He was born in the Eastern Cape and educated at St Andrew's College, Grahamstown. For many years he was a leading light in Port Elizabeth dramatic circles.

A fellow actor who was also a personal friend of Mr Shorrock said yesterday: "Jim's personal life was always a bit hectic, his business life without blemish."

RDM 26/2/80 55

Tests on petrol/alcohol mixture promising — AA

Staff Reporter

THE Automobile Association is encouraged by pilot economy and performance tests on vehicles using a petrol/alchohol blend.

The AA's technical department said the tests — using 90% petrol and 10% alcohol — had shown no adverse effects on either performance or economy.

Mr Fred Bothma, the AA's technical services executive, said tests were still in progress and a final assessment would be made within a few weeks.

However, Mr Bothma said, the public "should not gain the impression that this and other similar developments would in the foreseeable future appreciably lessen the country's dependence on the procurement of costly crude oil". He emphasised the need to still save fuel.

Hansard 4 (col 1435)

The fact that within three weeks of the development of an unexpected crisis at the beginning of 1979, we were able to make well-considered decisions on Sasol 3, is proof of a form of preparedness that refutes the charge made by the hon. member for Constantia.

Of course I do not differ with the hon. member when he underlines the necessity of an energy policy or strategy, but then he must not create a false image of a Government fluttering about aimlessly in this field. In the determination of the guidelines for an energy policy, it is important to realize that the correct choices in respect of many of the energy problems cannot be made immediately or simultaneously. Geological resources, the availability of oil, the effect on the environment, technological advantages and other uncertainties prevent a country from adopting a single set of inflexible programmes. There has to be an inherent pliancy in an energy policy. The development of an energy economy is a continuous process that is determined to a great extent by the innumerable decisions of consumers and producers that must mainly be guided by normal commercial principles. The function of an energy policy is consequently not to force the country into an energy-straitjacket, but rather to intervene to a lesser or greater extent in order to change a potentially adverse consumer pattern and to ensure that the energy economy develops in keeping with the national interest. It is nonsense to say that we do not have an energy policy. The Government is indeed implementing a co-ordinated energy policy, the general characteristics of which one may summarize in four points: In the first place there is the reduction and substitution of oil imports; in the second place, the development of local energy resources; in the third place, the promotion of fuel-saving and in the fourth place, the impact on energy prices. Within this framework we are giving attention to all the matters mentioned by the hon. member, and to a great deal more. I do not wish to burden hon. members today with an exposition of everything that is being done. There is ample time for that under the relevant Vote.

However, I do wish to make further reference to a few aspects raised by the hon. member for Constantia. He made three more points which I cannot allow to go unchallenged. In the first place, he insinuated that we were wide of the mark with our fuel-saving measures because it was not realized that the real problem was diesel fuel. But it is here where the hon. member is completely mistaken. Petrol conservation as such was of course also necessary for obvious reasons, i.e. actual shortages at certain stages, and at times when there was no actual shortage of petrol, then still at least for economic reasons. With the increasing demand for diesel fuel, however, this problem is becoming graver by the year and in respect of diesel fuel, apart from the normal fuel-saving measures of which the hon. member should know, intensive efforts are being made to discourage the use of diesel fuel by major consumers. Six major objectives have been formulated and are in the process of implementation and if this should succeed an appreciable saving will have been effected.

In the second place the hon. member referred to a "panic lobby" as he described it, that is alleged to have developed around the Koeberg project. The bodies that control this project are absolutely and totally geared to security and there is no cause for any concern whatsoever. South African experts are directing their attention to the problem that is alleged to have arisen at nuclear power stations abroad and if any mistakes have been made elsewhere, we shall learn from them in good time. I find it unfortunate that the hon. member spoke incautiously about Koeberg and incurred the risk—I am not implying that this was his express intention—of arousing feelings on aspects that are not of real concern, or relevant at this stage.

*Mr. I. F. A. DE VILLIERS: I did not do that.

*The MINISTER: I must utter a serious warning against the use of Koeberg as an issue for political gain. I wish to ask the hon. member in all calmness now whether he trusts the Atomic Energy Board. Does he share the confidence I have in the Atomic Energy Board to give the public of South Africa the assurance that this project is in safe hands and that they may feel reassured? Does he share that confidence with me?

*Mr. I. F. A. DE VILLIERS: Yes.

*The MINISTER: Thank you very much.

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†The hon. member also claimed that the Department of Environmental Planning and Energy based its work on 1974 statistics. He referred to a report on the principles of energy economy published in 1979. The publication to which I assume the hon. member was referring, is entitled *Principles of Energy Conservation* and was published in 1978. This publication contained data up to 1976. A major portion of the data used in the publication was not available from conventional sources, and where international sources were consulted, information was, in many instances, only available up to 1974. For the information of hon. members I may mention that in the collection, collation and publication of national energy data a lag period of two to three years is unavoidable and considered relatively favourable by international standards. In the circumstances I do not think the criticism of the hon. member was warranted. Regarding the need for confidential treatment of oil data and the hon. member's allegations regarding excessive secrecy, I think this was adequately dealt with during the discussion of the amendment of the Petroleum Act in 1979.

Mr Speaker, in conclusion I want to deal with two aspects of general importance with regard to energy affairs, viz. rationalization and alternative liquid motor fuels. With regard to rationalization, it is stated in the rationalization programme that it is the intention of the Government to bring the whole spectrum of energy matters together in one department of mineral and energy affairs, and thus to ensure a co-ordinated control of all matters regarding the planning and effective utilization of the numerous energy sources and resources. The fact that we are doing that now does not mean that we have not had it in the past.

~~Dr. Z. J. DE BEER: Still, it is nice.~~

The MINISTER: Sir, the first step in this direction has already been taken with the recently announced transfer of the energy-planning component of the existing Department of Environmental Planning and Energy to the newly formed Department of Mineral and Energy Affairs as from 1 March 1980. A second phase, for which our aim is 1 May 1980 as the starting date, will involve the transfer of the control of semi-governmental institutions and functions of departments involved in matters of procurement and utilization of energy carriers to the new department. The foregoing includes institutions such as Sasol, Escom and the Electricity Control Board and functions of the Department of Industries. A third phase will be the transfer of yet further functions from existing departments. In view of the integration of such functions with the normal functions of the existing departments, it will require further investigation before such transfer can be effected.

~~Mr. I. F. A. DE VILLIERS: You have seen the light.~~

The MINISTER: The Department of Commerce and Consumer Affairs, for example, has certain responsibilities and machinery with regard to import and export control, price control, etc., and further investigation and administrative steps are required before the energy aspects of this overall function can be transferred to the new Department of Mineral and Energy Affairs.

*The hon. member says I have seen the light. Now, does he think we have formulated these plans since he held his speech yesterday? No, Mr. Speaker, we must really not raise such childish arguments here. This was begun years ago, long before the hon. member even suspected that real energy problems would ever arise in the world.

†Mr. Speaker, in the last instance I want to refer to alternative motor fuels. In respect of alternative liquid motor fuels such as methanol and ethanol, I announced certain Government decisions on 7 February this year. The Government welcomes the positive reaction of private enterprise to the measures and proposed measures announced. More particularly, the positive intentions of a number of reputable companies to become involved in energy projects augurs well for the future. Hon. members will recall that I announced two main concessions with regard to all liquid motor fuels produced from indigenous raw materials. Firstly, it was announced that the same excise and other duties applicable to Sasol will apply to such motor fuels on the basis of their energy content. In this regard it appears as if the qualification of energy

For full debate see Hansard

Salem: 'SA's hands clean'

C.T. 26/2/80

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Own Correspondent

JOHANNESBURG. — Two senior Scotland Yard detectives investigating a local link in the Salem oil mystery said here yesterday that as far as their inquiries were concerned, South Africa's hands were clean.

Chief Superintendent Peter Griggs and Detective-Inspector Reginald Golding arrived in South Africa on Sunday to investigate the circumstances surrounding the mysterious sinking of the tanker Salem in January and the disappearance of its cargo of 193 000 tons of oil.

In an interview yesterday the detectives, who are expected to visit Durban, said their visit to South Africa was part of a global inquiry. As far as they knew, no South Africans were involved in the offences they were investigating.

"So far we have been getting excellent co-operation from the South African Police," they said.

The men hoped to speak to Mr Jim Shorrock, a Johannesburg businessman said to have been instrumental in a deal made by international oil dealer Mr Fred Ed Soudan.

A Sunday newspaper reported at the weekend that Mr Soudan, a Lebanese living in Houston, received a letter of credit in South Africa enabling him to buy the ship.

● Volkskas Bank confirmed yesterday that a letter of credit for the purchase of "commodities" had been issued by them but they had not been aware that it was to be used in the R12.3 million Salem tanker deal. The bank's managing director, Mr D P S van Huyssteen, said that nowhere in the letter were the names Soudan or Shorrock mentioned. Mr Soudan bought the Salem using the credit note, which he presented to Mercabank. The money was guaranteed by the Marine Midland Bank of London.

55 RDM 27/2/80

De Klerk gets moving on diesel incentives

Write in and we'll meet to hammer out details, says Minister of Energy

HOUSE OF ASSEMBLY. — The Government was planning a meeting of all interested parties to decide on the form that incentives for the replacement of diesel fuels would take, the Minister of Mines, Environmental Planning and Energy, Mr F W de Klerk, said yesterday.

And he said interested parties should write to the Secretary for Mineral Resources, Private Bag X59, Pretoria, 0001.

The meeting will deal, among other things, with the period of submission for applications for incentives and the form such incentives would take.

Mr De Klerk, speaking during the Second Reading Debate on the Part Appropriation Bill — introduced by Senator Owen Horwood — said South Africa had travelled a considerable distance on the road to energy self-sufficiency.

It was the Government's intention, in terms of the rationalisation of interests, to bring the whole spectrum of the country's energy requirements under one department, the Department of Mineral and Energy Affairs, Mr De Klerk said.

The first phase would begin on May 1, this year, when certain functions would be transferred to the new department.

The transfer of other functions would take place later.

He said the Government welcomed the positive response of private enterprise to the concessions regarding alternative fuels which he had announced earlier.

There were two main concessions.

Firstly, manufacturers would pay the same excise and other duties as Sasol, worked out on the basis of the energy content of the fuel.

As in the case of Sasol, the full benefit of the concession would eventually flow back to the manufacturer.

"No decision has been taken in respect of price control on these products," he said.

During the debate, the Opposition had accused the Government of having a "disintegrated energy policy", but, Mr De Klerk said, this was disproved by what had already been achieved.

"South Africa has travelled a considerable distance on the road of energy self-sufficiency.

"There is Sasol I, II and III, and the Republic has already emerged as a world leader in the field of coal calsification.

"About R120-m has been spent on our oil exploration programme, which is continuing and intensifying.

"Over the past two years intensive studies have been made into the use of ethanol and alcohol as alternative fuels.

"The country's energy policy committee is a well balanced and coordinated body of experts.

"As far as the development of guidelines for a energy policy is concerned, it is important to realise that the correct choice cannot always be implemented as a whole, and neither can it be done immediately.

"There are many uncertain factors which prevent a country from adopting a single unbendable energy programme.

"Such a programme has to be determined in terms of national interests," he said.

The Government had a thorough and co-ordinated energy programme aimed at the reduction and replacement of oil imports, the development of local energy resources, the promotion of energy saving and the influence of energy costs.

Taking all this into consideration, people still had to realise that they could not simply ride around at will.

"It will take years for us to reap the benefits of new developments. I ask for economic patriotism," Mr De Klerk said. — Sapa.

One department to deal with energy

55

CT 27/2/80

HOUSE OF ASSEMBLY. — South Africa had travelled a considerable distance on the road of energy self-sufficiency, the Minister of Mines, Environmental Planning and Energy, Mr F W de Klerk, said here yesterday.

He was speaking during the second reading debate on the Part Appropriation Bill, introduced by the Minister of Finance, Senator Owen Horwood, on Monday.

In terms of the rationalization of interests it was the government's intention to bring the whole spectrum of the country's energy requirements under one department — the Ministry of Mineral and Energy Affairs, Mr De Klerk said.

The first phase would be effected on May 1 this year when certain functions would be transferred to the new ministry. The transfer of other functions would take place at later stages.

The government welcomed the positive response of private enterprise to the concessions regarding alternative fuels which he announced earlier.

There were two main concessions. Firstly, manufacturers would pay the same excise and other duties as Sasol — worked out on the basis of the energy content of the fuel.

As in the case of Sasol, the full benefit of the concession would eventually flow back to the manufacturer, but the size of the concession would depend on the energy content of the fuel.

"No decision has been taken in respect of price control on these products," he said.

Referring to his earlier announcement of added incentives to manufacturers for the replacement of diesel fuels, the minister said a meeting of interested parties would be held. Among other things, the meeting would deal with the period of submission of applications for these incentives, and the form it would take.

Interested parties should write to the Secretary for Mineral Resources, Private Bag X59, Pretoria.

During the debate, the Opposition had accused the government of having a "disintegrated energy policy" but, Mr De Klerk said, this was disproved by what had already been achieved.

World leader

"South Africa has travelled a considerable distance on the road of energy self-sufficiency.

"There is Sasol One, Two and Three, and the Republic has already emerged as a world leader in the field of coal gasification. About R120m has been spent on our oil-exploration programme, which is continuing and intensifying.

"Over the past two years intensive studies have been made into the use of ethanol and alcohol as alternative fuels.

"The country's energy-policy committee is a well balanced and co-ordinated body of experts.

"As far as the development of guidelines for an energy policy is concerned, it is important to realize that the correct choice cannot always be implemented as a whole, and neither can it be done immediately.

Mr De Klerk

"There are many uncertain factors which prevent a country from adopting a single unbendable energy programme.

"Such a programme has to be determined in terms of national interests."

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Taking all this into consideration, people still had to realize that they could not simply ride around at will.

"It will take years for us to reap the benefits of new developments.

"I ask for economic patriotism," he said. — Sapa

55

Koeberg: 'Panic lobby' reassured

Political Staff

HOUSE OF ASSEMBLY. — The Minister of Mines, Environmental Planning and Energy, Mr F W de Klerk, said there was no reason to worry about the safety of the Koeberg nuclear power station.

The project was in good hands and Koeberg should not become a party political issue.

He was referring to a speech on Monday in which Mr Derick de Villiers (PFP Constantia) said concern about Koeberg had led to the emergence of a "panic lobby" or "doomsday group" which almost looked forward to the explosion of nuclear power stations.

Mr De Villiers made it clear he did not share this view and said he would spend his weekends at Koeberg if Escom built him a beach cabin there.

Mr De Klerk replied yesterday that feelings should not be raised about aspects which were irrelevant at this stage.

"The bodies controllng this project are concerned totally and absolutely with safety and there is no reason whatsover for worry.

"South African experts are paying attention to problems which have allegedly arisen at nuclear power stations abroad and, if mistakes have been made elsewhere, we have time to learn from them," he said.

Star 23/12/80

53

Energy: SA is getting on top

year when certain functions would be transferred to the new Ministry. The transfer of other functions would take place at later stages.

The Government welcomed the positive response of private enterprise to the concessions regarding alternative fuels which he announced earlier.

There were two main concessions. Firstly, manufacturers would pay the same excise and other duties as Sasol — worked out on the basis of the energy content of the fuel.

As in the case of Sasol, the full benefit of the concession would eventually flow back to the manufacturer, but the size of the concession would depend on the energy content of the fuel.

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Interested parties should write to the Secretary for Mineral Resources, Private Bag X59, Pretoria.

During the debate, the Opposition had accused the Government of having a "disintegrated energy policy," but, Mr de Klerk said, this was disproved by what had already been achieved.

"There are Sasol 1, 2 and 3 and the Republic has already emerged as a world leader in the field of coal classification. About R120-million has been spent on our oil exploration programme, which is continuing and intensifying.

● The Minister gave an assurance that there was "no reason whatsoever" for concern about the safety of the Koeberg nuclear power station project.

TABLE 37

Distribution of workers by job type and cash

WAGE (R PER WEEK) / JOB	General	Stock	Lands	Fencing	Driving	Hunting	Garde
0-2,50		1	2				
2,51 - 5,00	10	2	2	2	1		2
5,01 7,50	22	2	2	1	4		
7,51 -10,00	14	3	1	1	6	2	1
10,01 -12,50	10	2			4		1
12,50 -15,00	2			1	3		
>15	5	1		1	1		1
TOTAL NO. OF WORKERS	63	11	7	6	19	2	5

Salem: Let SA know — PFP

55

CT 27/2/80

Political Staff

WHILE the government was gagging the South African press on the Salem oil mystery, the rest of the world was being enthralled by details of the greatest and most audacious theft in modern history, Mr Dave Dalling, Opposition spokesman on the media, said yesterday.

He called on the Minister of Consumer Affairs, Dr Schalk van der Merwe, to lift the restrictions on South African reporting of the Salem saga.

"This case is almost a repeat of the situation in Angola in 1975, when the whole world knew that South African troops were in Angola, but South Africans themselves were kept guessing," Mr Dalling said.

Two senior Scotland Yard detectives are at present in South Africa investigating the circumstances surrounding the mysterious sinking of the tanker, Salem, in January and the disappearance of its cargo of 193 000 tons of oil.

Informed sources are saying that the operation "is undoubtedly the most audacious case of theft and fraud in history".

Although the Scotland Yard detectives have said that South Africa's hands are clean, local newspapers have been barred from publishing details of the saga.

The gag has been imposed in terms of the Petroleum Products Act which bars the press from revealing any information on South African oil purchases.

Mr Dalling said he failed to understand how South Africa's interests could be jeopardized by the publication of information that was making front-page headlines throughout the rest of the world.

"Unless the government can present a clear case for the withholding of this news, which it has so far failed to do, the continued muzzling of the press must be regarded as either a misguided application of the act or an unfounded abuse of the act," Mr Dalling said.

"Foreign readers are daily enthralled by the unfolding Salem saga. It is becoming ludicrous that South Africans are forced to live in a government-created cocoon of ignorance.

"The cause for the gagging of the South African press has been poorly explained and it is unclear how South Africa's interests can be in any way damaged by the reporting of the facts as they are known to everyone else in the world," Mr Dalling said.

● The Minister of Mines, Environmental Planning and Energy, Mr F W de Klerk, declined to comment in Parliament yesterday on Opposition allegations of excessive secrecy about oil data. He said the matter was adequately dealt with during debate on the amendment last year to the Petroleum Products Act.

The Cape Times

THURSDAY, FEBRUARY 28, 1980

Salem mystery

55

THE SITUATION over the sunken tanker Salem has become a bit ridiculous. It is an open secret that the South African press has, under threat of the petroleum products law, been prevented from telling its readers what millions of people abroad know. As Mr Dave Dalling pointed out in Parliament on Tuesday, it is similar to the Angolan invasion when the world knew what South Africans did not. The story of the sale of the tanker's multi-million-rand cargo of crude oil, its alleged scuttling (with seawater in its tanks) off the West Coast of Africa, followed by police inquiries, court procedures and governmental investigations into what might prove to be one of the biggest theft or fraud cases in history, is known only in obscure outline by South Africans — because of the restrictive provisions of the law. For instance, exactly where the Salem discharged the cargo has not been made clear to South Africans, though the rest of the world has little doubt. No one is suggesting that South Africa or South Africans acted improperly. In fact Scotland Yard detectives have declared South Africa's hands clean. But South Africans want, and require, to be told what DID happen.

Too close for comfort

55 CT 28/2/80

THE MINISTER of mines and energy, Mr De Klerk, should not dismiss public unease about the Koeberg nuclear power station. It is genuine and sincere, and has no party political overtones, as he seems to think it might have. In reply to a warning by Mr Derick de Villiers, chief opposition spokesman on nuclear energy, that there existed a "panic lobby" on the issue, Mr De Klerk accused him of speaking "incautiously" and running the risk of whipping up feeling against the project. Mr De Villiers did no such thing. In fact, he is on Mr De Klerk's side. He supports the concept of nuclear power stations and is even willing, as he said, to spend his weekends at Koeberg if Escom built him a beach cabin there. But Mr De Villiers recognizes that not all have the same confidence in Escom's nuclear infallibility as he evidently has, and this he pointed out to the minister. He even belittled those with doubts as "panic lobbies" and "doomsday groups", hardly the words of a man trying to score political points off the government.

Instead of getting cross with Mr De Villiers, Mr De Klerk should acknowledge the fears of Capetonians, a mere 30 kilometres away from potential disaster. To them, Koeberg is the biggest environmental threat to their lives and those of their succeeding generations. In his third hat, as minister of environmental planning, Mr De Klerk should take serious cognizance of this viewpoint. It is not based on irrational opposition to the generation of nuclear power in general. It is based on the fact that Koeberg is far too close to Cape Town for comfort, should anything go wrong. Why does the mother city and metropolitan area, with one of the densest populations in South Africa, have to live under the shadow of a possible "melt-down" when there are vast spaces with little more at stake than the lives of sheep? And sheep, come to think of it, would have less difficulty swallowing continual assurances, by people who have gone too far to withdraw, that nuclear power stations are fail-safe.

Sharp rise in heavy fuel hits industrialists

(55)
CT 28/2/80.

INDUSTRIALISTS face steep increases in their fuel bills this month as increases in the prices of furnace fuel and most lubrication oils become effective.

Oil companies have notified their customers that heavy furnace fuel (HFF) and most classes of lubrication oil have gone up in price by about 16 percent.

The increases mean that certain factories will be paying thousands of rands more for their fuel this month.

The price of a litre of lubrication oil has gone up by 3,5 cents a litre, and HFF is now 2,5 cents a litre more expensive.

A 200-litre drum of lubricant goes up by R7,50.

The increases became effective on February 7.

Angry industrialists interviewed last night said they had received no advance warning by their suppliers.

Mr Carlos Santos, who operates a foundry, said the same thing had happened at the end of last year when users were notified that an increase had already become effective.

"How am I to plan when they do things like this to me? My fuel bill this month is going to skyrocket, and there's nothing I can do about it. They should have given me some warning", he said.

Mr Santos said he and a number of other large undertakings had converted from diesel to HFF when the previous Minister of Commerce and Industry, Mr Chris Heunis, had pleaded with industry to use less diesel.

However, the price of HFF had now gone up by 36 percent since late October last year and those who had converted were "losing out".

A spokesman for the Department of Commerce and Industry said last night the increase in the price of HFF was a result of the fact that no equalization fund levy had been applicable to HFF, so that the recent decision to avoid an increase in the price of petrol by lowering the levy had not affected HFF.

The increase in the price of lubricants was mainly due to an increase in the price of steel, which made containers more expensive, he said.

CT 28/2/80

Koeberg Alert to warn of nuclear dangers

55

Staff Reporter

THE stop Koeberg campaigners have adopted the title of Koeberg Alert and are to mount an educational programme to make the public and civic leaders aware of the dangers of nuclear power.

In a policy statement issued yesterday by the chairman, Mr Bill Robb, the group said that Koeberg Alert did not associate with "crackpots, anti-nukes, Marxists and those who wish to stir public reaction for their own ends". The members were "concerned and responsible scientists, doctors, housewives and businessmen".

They dissociated themselves from any action taken by overseas bodies who wanted to use nuclear power as a political issue and believed that South Africans should solve their own problems without outside interference.

"The funds we operate with come from our own pockets and the R2 per annum membership fee," the statement said.

The group was not a political organization and welcomed "all who wish to learn of the possible dangers of nuclear power or want to assist others in understanding such dangers" as it felt that these dangers "transcend politics".

"Many people feel that Koeberg is wrong but are too afraid to speak up for fear of being ridiculed or called unpatriotic. We feel it is unpatriotic not to speak up because we believe that Koeberg could cause South Africa much harm."

Commenting on the City Council's refusal to hear representations from Koeberg Alert, Mr Robb said: "It is a great pity that our city councillors are not prepared to hear a well prepared and reasoned approach to the dangers of nuclear power, particularly as the man-in-the-street looks to his councillor for leadership."

"I feel that councillors are worried about Koeberg but that they have given up; they think it is an accomplished fact. I need only remind them that the Australians voted in a national referendum to close their first nuclear plant even though construction was complete.

"I am confident that Koeberg will never be started and that when South Africa's leaders see how unnecessary and uneconomical it is they will vote in favour of cleaner and more healthy alternatives. To this end I invite all seriously-concerned people to join Koeberg Alert and add their voices to the many who already oppose it."

The secretary of Koeberg Alert can be contacted at Post Box 4859, Cape Town 8000, or through ☎ 52-2813, 53-7041, or 72-3009.

WORLD OIL

FM 29/2/80 (55)

Murky prospects

Despite some indications of slackening oil demand in the West, there is still no room for complacency. Kuwait has confirmed its intention to cut back output by 25% (to 1,5m barrels a day) when current contracts expire on April 1.

And an ominous hint of potentially far more serious cuts from the world's largest exporter, Saudi Arabia, was contained in an aside by Howard MacDonald (treasurer of the Shell Petroleum group), who said that it was only a "question of when, not if" supply problems would be seen there.

In the light of recent complaints by Saudi oil minister Yamani that his country could no longer earn a real rate of return on its investments in the West (*FM* February 22), MacDonald's remark needs to be treated seriously.

Opec members are floundering at the moment in a welter of conflicting public statements over the sustainability of the current price structure and the chances of returning to a unified price. The only certainty is that the subject will be discussed not later than the date of the next regular meeting at Algiers in June, but possibly at a special meeting called for the purpose in May.

Key to Opec pricing at a time of static or slightly weakening demand is, as ever, Saudi Arabia, with its output of 9,5m barrels a day, much of which could be cut back to the positive benefit of that country's financial position. And it is generally accepted that 1m barrels a day (at least) of that output is produced only as a political favour to America.

Although the heat has certainly gone out of the spot market (*FM* February 8), Opec's capability to sustain listed prices in a weak market has not yet been fully tested. In the light of the current news

from Kuwait and indications about Saudi intentions, any optimism could prove very facile.

Indeed, Opec secretary-general Rene Ortiz said this week in New York that oil consuming nations "must accept the need for gradual increases in the real price of oil," which "must eventually reach its true replacement cost." Preferably, this trend should be completed "well in advance of the time when scarcity threatens a smooth transition to energy alternatives".

Ortiz said there should be no cause for concern over oil supplies until about 1985 because Opec has a comfortable margin of oil export potential. Clearly, Ortiz has confidence in his organisation's ability to keep a firm hand on the oil price in the foreseeable future, implying a political will to cut back output at times of weakening markets like the present.

W F	A M	A F	C M	C F	B M	B F
0,03	0,20	0,21	0,06	0,16	0,06	0,06
0,01	0,02	0,00	0,02	0,04	0,01	0,01
0,00	0,01	0,01	0,01	0,01	0,01	0,01
0,01	0,01	0,02	0,00	0,01	0,01	0,01
0,02	0,03	0,03	0,06	0,04	0,01.	0,03
0,11	0,13	0,15	0,13	0,15	0,03	0,03
0,02	0,02	0,02	0,02	0,03	0,01	0,01
34	7	7	21	31	23	21

DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS

	F	A M	A F	C M	C F	B M	B F
	,18	0,50	0,41	2,02	1,56	1,26	1,20
	05	0,02	0,07	0,45	0,26	0,23	0,18
	01	0,05	0,04	0,09	0,06	0,09	0,07
	01	0,04	0,05	0,23	0,09	0,13	0,06
	)7	0,21	0,11	0,36	0,13	0,26	0,07
	3	0,00	0,15	0,47	0,18	0,44	0,15
ALL.	0,04	0,07	0,06	0,25	0,14	0,17	0,12
NO.	85	26	23	289	164	366	187

with selected major categories of disease. Clearly, this is an entirely hypothetical situation. However, these competing risks life tables not only provide an indication of the relative importance of various disease categories to both the overall mortality experience and also to expecta-

NUCLEAR POWER (55)

50m Frenchmen

FM 29/2/80

If you apply ruthless Gallic logic to the energy problems of a country with barely any indigenous hydrocarbons and heavy dependence on oil imports, you get something like the ambitious French nuclear power programme.

Faint-hearted South Africans, terrified of the risk of nuclear power, can draw a lot of reassurance from the effectiveness of the French programme to date. (Remember that SA's Koeberg will be using Westinghouse-type Pressurised Water Reactors (PWR) supplied by Framatom, of the type already giving good service in France.)

As reported by *Petroleum Economist*, France's Energy Commission recently reiterated its intention of cutting oil's share in primary energy use from around 58% in 1978/79 to 45% by 1985 and 40% by 1990. To implement this programme, greatly increased use will be made of coal, natural gas and especially nuclear power.

By 1985, France plans to generate 55 000MW by nuclear power, equivalent to half the country's total electricity production and one-fifth of its total energy output. This target will place France second only to the US (which produces 110 000MW) in the Western world's ranking of nuclear power.

So successful has been the "first generation" of PWRs — with capacity of 900MW each — that France is moving to a second series of stations rated at 1 300MW each.

France has also taken a commanding lead in fast breeder technology. The world's first commercial fast breeder plant (Superphenix, rated at 1 200MW) is under construction on the Rhone River at Creys-Malville with Euromart participation. There is also a strong programme for all aspects of nuclear fuel reprocessing and uranium enrichment.

On the financial side, France expects nuclear electricity to save no less than 10 billion francs (nearly R2 billion) in foreign payments a year after 1985. Obviously, the higher future Opec oil prices, the greater the saving.

Petroleum Economist notes that France's continuing triumph with nuclear power is based on three elements: strong government backing, the centralised structure of the nuclear industry, and the absence of any organised grass-roots opposition. (Note the similarities to SA, with electricity generation in France centralised in the hands of the French "Escom" — Electricité de France.)

ACKNOWLEDGE

The writers

Assurance So

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Hansard 4(243) 29.2.80 55

Nuclear power station

4(243) 29.2.80 55

*4. Mr. N. B. WOOD asked the Minister of Industries:

Whether the building of another nuclear power station in the Republic has been considered; if so, what was the decision?

The MINISTER OF INDUSTRIES:

Long term planning of South Africa's electricity demands is continuously being reviewed. Present indications are that the necessity to consider further possible nuclear generation capacity will not arise during the next decade.

Hansard 4(243)

29.2.80

55

4(243) 29.2.80 55

Koeberg power station

*5. Mr. N. B. WOOD asked the Minister of Industries:

Whether the Koeberg power station is insured against possible accident or failure; if so, what is the total indemnity covering persons and property?

†The MINISTER OF INDUSTRIES:

As the Koeberg nuclear power station is not yet a nuclear site in terms of the Nuclear Installations (Licensing and Security) Act, 1963 (Act 43 of 1963), the insurance arrangements at present are of a conventional nature and similar to those normally applicable to a large construction project. The situation will, however, change completely legally and for insurance purposes once nuclear fuel arrives on the site in approximately 18 months' time.

Hansard 4 (271/272) 29/2/80 55

4(271-272)

Environmental Planning and Energy: applications for funds

350. Mr. H. E. J. VAN RENSBURG asked the Minister of Environmental Planning and Energy:

(1) Whether his Department has received any applications for funds from (a) the Randburg municipality, (b) the Sandton municipality and (c) any organization in (i) the Randburg and (ii) the Sandton area during 1980; if so,

(2) (a) what funds, (b) for what purpose and (c) with what result in each case?

The MINISTER OF ENVIRONMENTAL PLANNING AND ENERGY:

(1)(a), (b) and (c) No.

(2)(a), (b) and (c) Fall away.

Environmental Planning and Energy: funds made available

383. Mr. H. E. J. VAN RENSBURG asked the Minister of Environmental Planning and Energy: 29/2/80 55

(1) Whether any funds were made available to (a) the Randburg municipality, (b) the Sandton municipality and (c) any organization in the (i) Randburg and (ii) Sandton area during 1977, 1978 and 1979, respectively; if so,

(2) (a) what funds and (b) for what purposes in each case?

The MINISTER OF ENVIRONMENTAL PLANNING AND ENERGY:

(1)(a), (b) and (c) No.

(2)(a) and (b) Fall away.

CAPE TIMES 1/3/80 (55)

Koeberg to get nuclear fuel in 18 months

By PADDY ATTWELL

NUCLEAR FUEL would arrive on the Koeberg nuclear power station site in about 18 months time, the Minister of Industries, Dr Schalk van der Merwe, told the House of Assembly yesterday.

He indicated this in a reply to a question on insurance at the Koeberg plant.

Dr A Abramowitz, deputy-chairman of the anti-Koeberg group, Koeberg Alert, expressed "disquiet" last night at the development.

When asked by Mr Nigel Wood (NRP Berea) whether the Koeberg nuclear power station was insured against possible accident or failure, Dr Van der Merwe said it was not yet a nuclear site.

Insurance arrangements at present were those normally applicable to a large contruction project.

"The situation will, however, change completely legally and for insurance purposes once nuclear fuel arrives on the site in approximately 18 months time," Dr Van der Merwe said.

Dr Abramowitz said that he found it "disquieting" to learn that the authorities planned to bring nuclear fuel on to the site irrespective of whether an Escom emergency plan had been approved by the Atomic Energy Board.

The fuel should not be imported "unless and till Escom's evacuation plan has passed muster by all concerned, including administrators and experts, for the worst possible accident occuring at the worst possible time under the worst possible weather conditions."

Dr Van der Merwe said that it was unlikely that South Africa would have to consider building a second nuclear power station within the decade.

"Long term planning of South Africa's electricity demands is continuously being reviewed. Present indications are that the necessity to consider further possible nuclear generation capacity will not arise during the next decade."

Argus 3/3/80

Demand for petrol rising, says UCT

(55)

SOUTH AFRICA'S main energy problem was an over-reliance on petroleum imports according to a document published today by the Energy Research Institute at the University of Cape Town.

Although secrecy surrounded South Africa's oil, available information implied that the demand for petrol was rising in spite of conservation efforts and the demand for diesel was rising alarmingly, the document said.

'The need to replace petroleum by an indigenous transport fuel source is thus of paramount importance.'

OBJECTIVES

The objectives on energy policy should be to:

- Provide everyone with heat and light at home at a reasonable price;
- Supply industry's needs at a price reflecting full resource cost with regard to long-term availability of fuels;
- Satisfy the country's long-term needs for energy;
- Allow the consumer freedom of choice between fuels;
- Provide energy under secure conditions and not to become over-dependent on imported energy sources; and
- Stimulate energy trade with neighbouring and overseas countries.

INTEGRATION

To develop this policy the Government should have a central energy department with a minister.

The departments which were divided between ministries should be integrated.

Also 'a vigorous and visionary programme of research and development should be pursued, funed by a tax on energy'.

Power for PE blacks

CAPE TIMES 4/3/80 (51)

Political Staff

HOUSE OF ASSEMBLY. — The first step towards a R20m project to bring electricity to 18 000 houses in Port Elizabeth's black townships was announced by the Minister of Co-operation and Development, Dr Koornhof.

[illegible]ally begin and where the necessary finance will be found.

Dr Koornhof said the municipality had already been asked to design the new supply load centre and the electricity reticulation network.

Secunda gets another 'first'

STAR 5/3/80

(55)

~~260~~

CAPE TOWN — A light crude oil, similar to the Arabian light crude for which South African refineries are geared, is being produced by Sasol at their Secunda plant, the managing director of Sasol Limited, Mr J A Stegman, announced today.

This is another South African world first.

"Today is an important day for Sasol and South Africa," he said. "We are now firmly moving towards greater independence from imported crude oil."

The result of more than 25 years of research and development on the original Sasol 1 process have been incorporated into the design of the Secunda projects.

STILL BUILDING

"At present, there is no other commercially proven process available in the world," he said.

However, the production of the crude oil does not mean that petrol diesel and aviation fuel will start flowing from Secunda before the anticipated completion date at the end of 1981.

The refining section of the plant is still being constructed, and will not be operational before the end of next year, although the construction programme is on schedule.

Dr A H Stander, joint managing director of Sasol 2 (Pty) Ltd, and Sasol's senior general manager, said: "We are proud that the job has progressed according to schedule — thanks to an excellent team effort."

The end-of-job cost of the Sasol 2 factory and mine was estimated at R2 500-million in October, 1975. Dr Stander said the project was being completed, 4½ years later, within the estimated cost.

He said this was a unique achievement in effective cost control on such a mammoth project, which, to his knowledge, had not been equalled elsewhere in the world.

He said the oil was produced by gasifying coal in an oxygen and steam atmosphere. The gas was purified and fed into reactors whereafter circulating with a catalyst, it was transformed into oil.

More electricity as SAR saves fuel

55

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RDM 6/3/80

THE ASSEMBLY. — South African Railways is speeding up its electrification programme, says Mr Heunis.

"In the light of the rising costs of liquid fuels and the uncertainty of availability, electric power has now become more cost competitive and a more secure alternative."

He said :"The Railways' direct contribution to the country's efforts towards reducing reliance on imported fuels is reflected in the fact that on completion of this programme, some 85% of its gross ton kilometres will be derived from coal-based energy — electrification 80% and steam 5%.

"The cost and strategic benefits to the rest of the country are incalculable."

His department, in collaboration with the CSIR, was conducting extensive tests with alternative internal combustion fuel mixtures.

"Various mixtures involving diesel with naphtha, ethanol or methanol, and petrol with ethanol or methanol, have been tested and the results so far have been highly promising."

The airline was also effecting fuel economies — resorting to steeper climbs to attain an economic operating height more quickly, flying at the most economic speed and altitude for the aircraft type, reducing ground idling time and consolidating and rationalising frequencies.

The policy on fleet composition had paid handsome dividends.

"In all other branches of the service — particularly in the road transport and harbour services and in the workshops — fuel economy measures are being applied or tested."

Because of the important impact of the national transport system on the economy in general, the determination of policy demanded the closest cooperation between the administration and the private sector.

The Minister said that because 94% of the annual 690-million rail passengers were commuters, he was paying special attention to commuter problems. — Sapa.

...parted together at Essexvale, near Bulawayo.

Soweto to foot R105m bill for electricity

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Staff Reporter

RDM 6/3/80.

THE Soweto Council is to pay 68,6% of the R153-million required for the electrification of all townships within the complex — a total of R105-million in hard cash.

A breakdown indicating how each of the three community councils within Greater Soweto would finance the R153-million electrification project for the area is reflected in a document given to the respective councils — Diepmeadow, Dobsonville and Soweto — by the Department of Co-operation and Development.

In terms of the apportionment made by the department, Soweto is to pay R105-million and the Diepmeadow Council R41-million. Dobsonville Council, which represents the smallest part of the area, is expected to pay R7-million.

The three councils have also been granted authority to jointly raise a R20-million loan by way of issue of stock at 10% a year redeemable on October 1, 1999.

Of the R20-million loan, Soweto is to raise R13 720 000 while Diepmeadow and Dobsonville are to raise R5 360 000 and R920 000 respectively.

Provision has also been made for the raising of a second loan by way of the issue of loan stock to the tune of R40-million in instalments of R2-million on or before June 30, 1983 and that second loan stock is redeemable 15 years from date of issue.

And of the R40-million loan, Soweto is to bear responsibility for R27 440 000 while Diepmeadow and Dobsonville are to bear R10 720 000 and R1 840 000 respectively.

Barclays and Volkskas banks have appointed as fund administrators, acting on behalf of the three councils in respect of capital costs for the electrification project.

The department has also asked each council to include the electricity expenditure in its annual budget.

"For the 1979-80 financial year, applications for Ministerial authority for the creation of additional expenditure votes must be made as soon as possible as this project has not yet been provided for," states the document.

RDM 6/3/80

Tanker probe ends

55

DURBAN. — Scotland Yard detectives have completed two days of investigations in Durban into the sinking of the tanker, Salem, and allegations concerning its R45-million crude oil cargo.

Chief Superintendent Peter Griggs and Inspector R J Golding have returned to Johannesburg where they have been conducting investigations since mid-February.

It is understood that their investigations in Africa are complete and they are expected to return to London.

The detectives have said they know of no South Africans involved in the offences they were investigating.

The Salem sank off the coast of Senegal in January. There have been allegations that the cargo of about 193 000 tons of oil was off-loaded before the ship was scuttled. — Sapa.

Billion-rand rise in Opec aid fund

N M 6/3/80

55

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Gamini Seneviratne

THE Organisation of Petroleum Exporting Countries (Opec) is changing the pattern of its aid-giving programme for Third World countries.

In essence, Opec has raised the financial base of its special fund by R1,3 billion to R2 billion; and served notice of intent to set up a new aid agency.

The special fund was established in the wake of the 1973 oil price rise — the first significant collective action by a group of Third World primary commodity producers — specifically to help developing country oil importers who were least able to bear the extra financial burden.

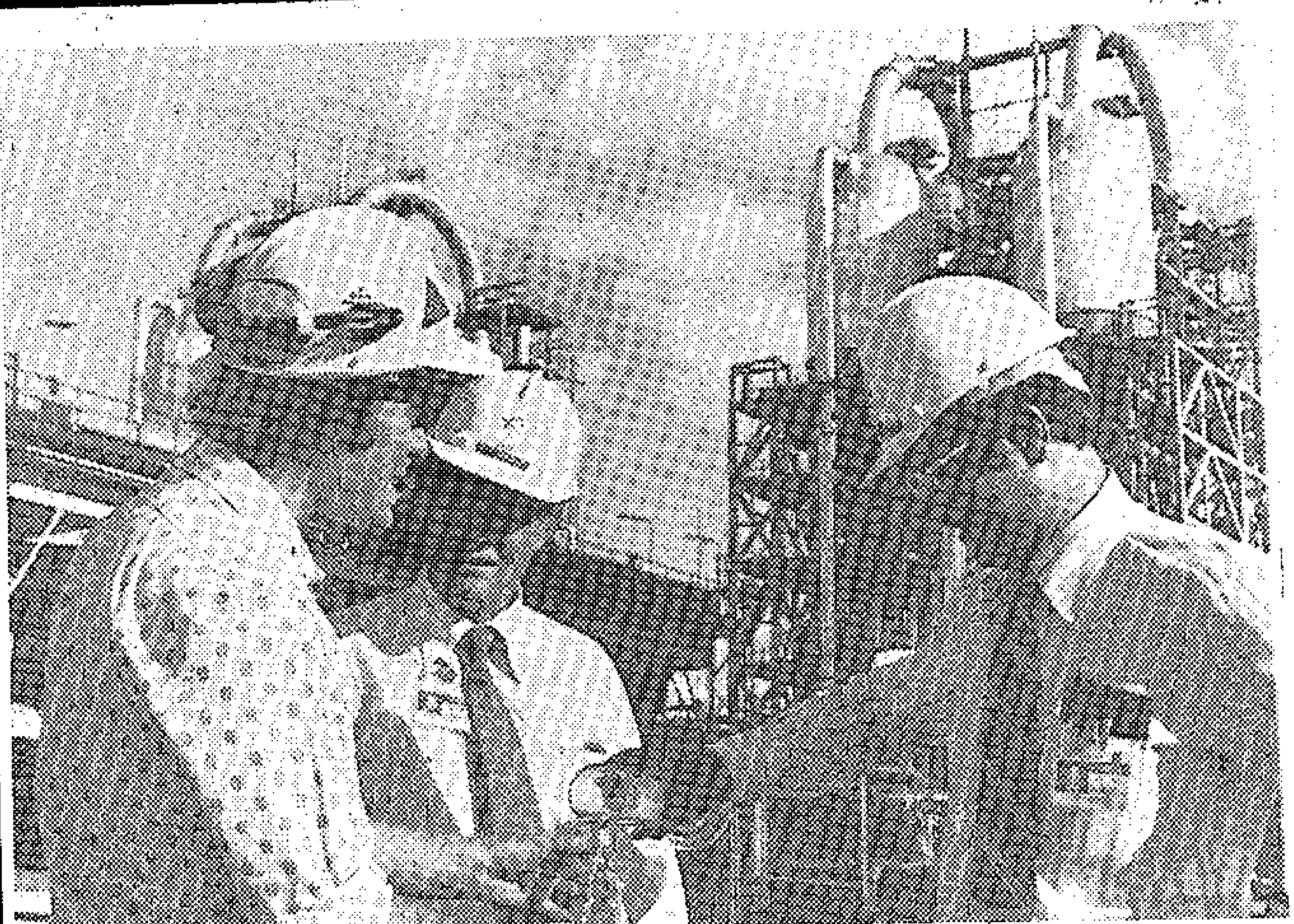
The boost to the special fund's funds, by double the amount that had been generally expected, has of course been well received. Not so the intention to set up a new aid agency. It raises two questions: will the special fund be completely restructured to become the new body? Will the aid agency be separate, but gobble up the fund's funds?

Few details are available yet, but the words 'aid agency', alone, when attached to the special fund, are sufficient to raise fears for the short term and hopes for the long. They are based on the philosophy and aid pattern of the special fund so far, and on the way an aid agency normally operates.

First, the bad news. The fear is that the financing role of the special fund will be drastically altered. Its loans so far have been given on a programme basis — that is, for whole areas of activity, such as health or transport, and even across more than one area.

Programme aid has the significant advantages of simplicity and speed. Once agreement is reached between the fund and the recipient of a loan (on which programme needs how much) it has so far been little more than a matter of signing the cheque.

But an aid agency would be another matter entirely. Such a body would be virtually synonymous with the project assistance. As such, simplicity and speed would certainly have to be sacrificed.



Small beginnings . . . general manager, operations, Mr Paul Kruger, pours Sasol 2's first oil into a beaker. With him are divisional superintendent, Mr Peter Watts, left, and works manager, Mr Sakkie Marais.

(55)

RDM 6/3/80.

First oil flows at Sasol 2

By JEREMY BROOKS

THE FIRST oil produced at the mammoth Sasol 2 plant at Secunda began flowing yesterday — but full production is still a long way away.

Sasol's managing director, Mr J A Stegmann, said in a statement yesterday that the latest developments at Secunda highlighted South Africa's leading position in oil-from-coal technology.

This technology was not practised on a commercial basis anywhere else in the world, he said.

The results of more than 25 years' research and development on the original Sasol 1 process had been incorporated at Secunda. South Africa was now moving towards greater independence from crude oil.

"At present there is no other commercially proven process available anywhere in the world," he said.

The oil now being produced was still unrefined and the first saleable products from Sasol 2 would only be available within a few months' time.

Full production would probably be reached towards the end of 1981.

Sasol's senior general manager, Dr A H Stander, said Sasol 2 was a unique achievement in effective cost control.

The cost of the plant and mine had been estimated at R2 500-million in October 1975 and the project was now being completed, 4½ years later, within that estimate.

"We are proud of the fact that the job has progressed according to schedule — thanks to an excellent team effort, great enthusiasm and good planning," he said.

(55) C. Times 7/3/80.

Plea for central department of energy

Science Reporter

THE energy situation in South Africa had become so important and complex that a central department of energy was required, according to the Energy Research Institute of the University of Cape Town.

In a wide-ranging energy policy discussion document issued this week the instutute warned that to develop an energy policy the government should have a central energy department headed by a minister of energy.

The various aspects of energy presently divided among several ministries should be integrated under the one department.

Because of the complex nature of the developing energy situation "a vigorous and visionary programme of research and development" was needed. This could be funded by a tax on energy.

The objectives should be:

- To provide everyone with heat and light at home at a reasonable price;
- To supply industrial needs at prices reflecting full resource costs and long-term availability of fuels;
- To satisfy the country's long-term needs for energy, taking account of risk, depletion of reserves, research and development and the need for capital for energy projects;
- To allow the consumer freedom of choice between fuels;
- To provide energy under secure conditions and to avoid over-dependence on imported sources;
- To stimulate energy trade with neighbouring and overseas countries.

The report said that South Africa was fortunate in having adequate supplies of all energy forms except petrol

The need to replace petrol by an indigenous transport fuel was important because of the problems of security of supply, the growing shortage worldwide of petrol and its rapidly increasing price.

It pointed out that:

- Sasol fuels were commercially available and a direct replacement requiring no changes to engines, but at present were a very expensive substitute;
- Ethanol, which could create social problems as it was a possible intoxicant, was a high cost alternative fuel but not a secure supply due to its agricultural origins;
- Methanol could be produced from coal or gas at a cost below that of either Sasol fuel or ethanol. It was available from a secure source and could be made from low-quality coal. Compared with petrol or diesel it required more volume for the same amount of energy, probably requiring larger fuel tanks in vehicles;
- Battery vehicles were an alternative means of using coal via the power station and were of special urban interest because they were pollution-free. Their range was limited and cost was high but this should fall as more were built. At best, they would replace only 10 percent of liquid fuel requirements.
- Renewable energy sources such as tidal, thermal, solar and wind energy, even if fully exploited, were unlikely jointly to contribute more than one percent of the country's energy needs by the end of the century.

All the above alternatives could be efficiently and gradually brought into use without disruption of the present infrastructure, in an overall energy policy based on the assumption that it was necessary to reduce petrol imports to zero by the end of the century.

Coal, the basic resource, had sufficient known reserves until well after the year 2020.

The report recommended that any energy policy should be flexible enough to provide relative quantities of the various fuels based on their price factors.

RDM 7/3/80 (55)

Petrol price to go up again — 'slightly'

By GERALD REILLY
Pretoria Bureau.

PETROL and diesel prices in the Pretoria-Witwatersrand-Vereeniging complex will go up marginally from April 1, because of the rail tariff hikes.

The director of the Motor Industries Federation, Mr Jannie van Huyssteen, said petrol would rise by 0,113c a litre and diesel by slightly more.

Transportation costs will rise from April 1 by 3,8% for petrol and by 4,1% for diesel.

Mr Van Huyssteen pointed out, however, that in some far flung rural areas, where petrol was delivered by railway road transport, the cost of increased transportation would be 15%.

This would add another half cent a litre to the price.

Mr van Huyssteen said it appeared the railways had not succeeded in making all goods carried pay their own way.

Some goods were still heavily subsidised from the profits made on other services.

Other sources pointed out that if all goods were carried at an economic rate, the price of fuel could be reduced.

It was certain, the sources said, that the big profits made on piping petrol to the Rand — about R120-million last year — were being used in part at least to subsidise non-economic traffic.

Gasohol — a US fuel of the future

55
RDM
7/3/80

NEW YORK. — In recent months a new bumper sticker has appeared on American cars. It bears a simple message: "Gasohol". But this alternative fuel, a mix of nine parts petrol and one part alcohol, offers motorists no sure deliverance from their woes, for its mass production in the near future is fraught with uncertainty.

The Carter Administration has seen the difficulties. It had a gasohol programme under study for 18 months before announcing a "major new programme" in January.

The programme also offered only one measure not already under discussion on Capitol Hill — a $3 000-million provision for new Federal loans and loan guarantees to help set up production plants.

The plan calls for gasohol production to be quadrupled from the current figure of 800-million gallons to 3 200-million by the end of this year, and output of roughly 5 000-million gallons by the end of 1981.

Officials say gasohol could replace 10 % of the nation's unleaded petrol by the end of next year, and that by the mid-to-late 1980s a third of automotive fuel might be gasohol.

President Carter initially implied that increased production of gasohol would diminish maize surpluses caused by the grain embargo.

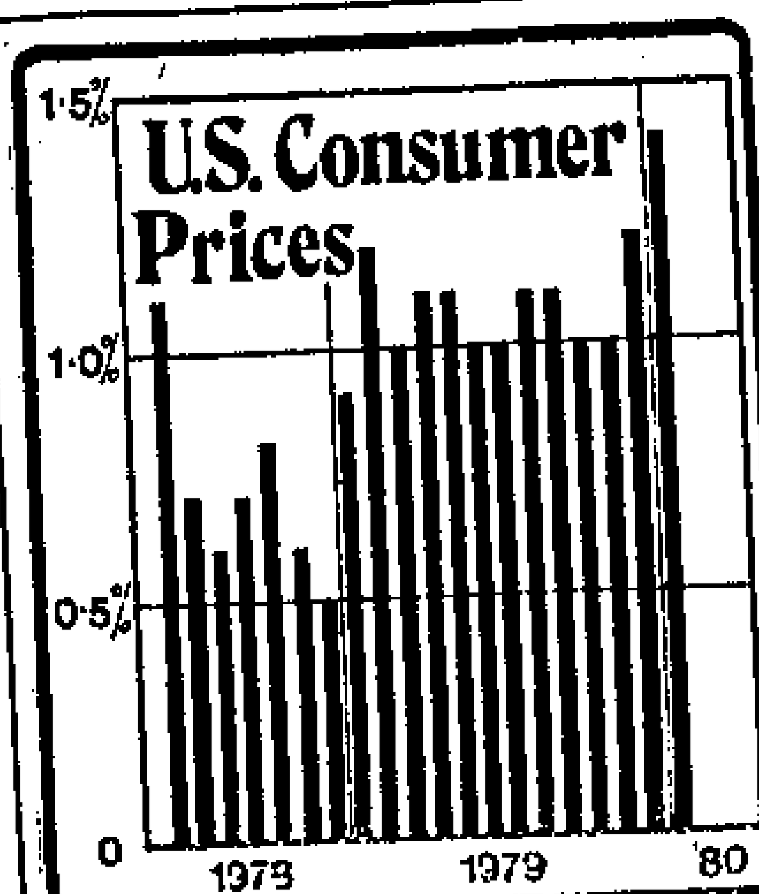
However, when Administration officials detailed the plan, they were unable to promise that gasohol would bring farmers immediate relief from the effects of the embargo. One official admitted that no funds had been set aside specifically to buy maize for gasohol production.

Presidential politics aside, the use of gasohol has been growing. Two years ago the fuel was sold at only a few retail outlets. It is now being distributed at more than 1 000 stations, and some major oil companies are starting pilot gasohol programmes.

The fuel has found acceptance among many motorists who say it gets better mileage and engine performance than the unleaded fuel required in most late-model American cars.

Gasohol is a high-octane product which can be produced with two types of alcohol, ethanol or methanol. Ethanol, favoured by the agriculture industry, is produced from vegetation, whole grains, food, waste and petroleum. Methanol can be made from wood, sewage, refuse, coal, natural gas, peat, shale or petrol.

While maize would initially be the primary raw material for ethanol production, officials foresee a gradual switch to other crops — and even municipal waste as the decade progresses.



Researchers say that in two or three years they will produce a commercially viable method for converting cellulose materials — stalks, cobs, paper — into fermentable sugars, which will produce alcohol.

Gasohol production has lagged because, without Government assistance, it is still more expensive, at $1,30 a gallon, than petrol, which has a wholesale price of 85c to 95c for the unleaded variety. However, subsidies and tax incentives proposed by President Carter, the fact that many states have cut taxes on the brew, and the ever-rising cost of oil, mean that the price gap is being closed.

The Administration has proposed a number of measures which, if passed, would provide a subsidy of 50c a gallon of alcohol for gasohol producers. These measures include:

- An extension until the year 2000 of gasohol's exemption from the 4c a gallon Federal excise tax on petrol.
- Up to $1 000-million in assistance for construction of plans for the production of Ethanol from plant materials.
- A 40c a gallon production tax credit for alcohol producers.
- Increased funds for research and development.

The US is producing about 80-millions gallons of ethanol a year, 63% of which is manufactured from maize by one major producer, the Archer-Daniels-Midland Corporation of Decatur, Illinois. — Financial Times.

SA could cut its oil imports to nothing

South Africa could reduce its oil imports to nothing during the next decade, wiping out the country's annual R3 500-million oil bill. JAAP BOEKKOOI here presents a digest of the long-awaited report of the University of Cape Town's Energy Research Institute which poses all the energy options, and shows how the country could rid itself of all its oil worries.

Thumbs up and down

STAR 7/3/80 (55)

Professor Dutkiewicz and his scientists have given a number of "thumbs up" and "thumbs down" signals to the various energy options in South Africa.

THUMBS UP TO:
- Methanol factories soonest.
- An integrated Energy Ministry.
- Ethanol factories to create jobs.
- Improved Sasol plants.
- More energy research.
- Another one-third of SA's present electric power from Tugela and Transkei hydro-electric schemes.
- Petrol from sea gas
- 10 percent of cars battery-powered by 1995.

THUMBS DOWN TO:
- Last year's speed restrictions.
- Solar power — with exceptions.
- Wind, ocean and wave power.
- Tidal and geothermal power.
- Vegetable oil-run tractors.
- Ethanol farming at Makatini Flats.
- Cars run on LP gas.
- Fuel taxation.
- Government oil secrecy.

The gold boom with all its hallelujahs and euphoria has made South Africans forget that, as a nation, we are still sitting on our biggest financial time-bomb — the annual R3 500 million (estimated) oil import bill.

It is a bill growing larger every year, and one the country can ill afford. It could buy us a few more Sasols in the next few years, electrification for every black town, plus double pensions for our black and white aged.

Pretoria's response to the Opec threat — which includes a present oil boycott of this country plus more effective boycotts promised in future — has been late and confusing.

Report

The response to build a Sasol 3 was late; measures on curbing oil consumption were panicky, confusing and eventually anti-productive.

The 70 km/h restrictions last year, as the Energy Research Institute at the University of Cape Town has pointed out, punished the wrong party — the users of petrol-driven cars — while the actual shortage was in diesel oil used in industry and agriculture.

The country's transport energy policy still seems in disarray.

Despite Energy Minister F W de Klerk's new guidelines announced in Parliament last month, thinking on the problem is still scattered over a wide spectrum, while energy matters are a constant musical chairs game between different Government departments, old and new ministers.

Now, for the first time, there is a report which examines South Africa's financial time-bomb from all angles.

It comes from the think-tank on energy, the Energy Research Institute in Cape Town mentioned before. And it is called "Energy 1980, an Energy Policy Discussion Document."

The Institute's head, Professor Richard Dutkiewicz, and his workers, have formulated guidelines-cum-scenario by which South Africa could defuse the bomb — and the threats of an effective oil boycott within 15 to 19 years — by a total stopping of all crude oil imports.

Professor Dutkiewicz's document, intended to stimulate national discussions on energy, has much of the "total onslaught" response fashionable in military echelons today.

Solution

The report examines every possibility of how South Africa can eventually reduce its crude oil imports to the last drop, and how these can be replaced.

It means using every bit of energy from every nook and cranny in the country, from new improved Sasols to sugar alcohol factories, battery cars, sea gas, new fuel tax structures — and yet coal exports as high as 250-million tons a year, 12 times the present volume.

The solution to the high oil import bill should be a democratic one. It should take into account primary aims: heat and light for everybody, and a free choice of fuels for individuals and industry.

But like other energy researchers, Professor Dutkiewicz and his men have their preferences: theirs is for the expanded use of cheap South African coal and its large-scale alchemy — next to the Sasols — into vast lakes of methanol, the coal-derived alcohol.

The most immediate thing the Government, or private enterprise, should do is to build methanol factories.

The liquid should be blended with regular and Sasol petrols as an extender, and could help relieve the diesel shortage in a two-tank system of diesel oil and methanol.

Lyrical

The report is almost lyrical about the promising future of methanol made from low-grade South African coal delivered from high-grade, exchange-earning export coal.

Methanol production would use only 70 percent of the coal used by Sasol, yet a car run on the liquid would do 43 percent more kilometres.

Methanol costs about three-quarters of the price of Sasol petrol; it uses energy in a high-compression engine some 25 percent more efficiently than petrol in a normal engine; and the energy efficiency of a methanol plant is 16 percent above that of a Sasol plant, while the cost is 20 to 30 percent lower.

Moreover, in South Africa it can virtually be tapped from the sea via a floating conversion plant attached to any of the three or four gas wells found by Soekor drilling rigs.

Risky

The report's next case is that for ethanol, an alcohol motor fuel manufactured from plant products, especially sugar cane, mealies and cassava.

The report admits that ethanol is expensive to produce and risky as well, because of the country's droughts and plant pest epidemics.

But the advantages of ethanol as a petrol extender is that
- It is sometimes cheaper than other fuels because it can be produced and consumed locally without transport costs, such as in Eastern Transvaal.
- It can give thousands employment.
- It can replace scarce diesel fuels.

Obsolete

But on the whole Professor Dutkiewicz and his men are not optimistic about motor fuels from renewable sources.

They estimate that such sources will not contribute more than one percent of all energy needs. They also shoot down the possibility of using vegetable oils, such as Mr Hendrik Schoeman's much advocated sunflower oils in tractors (they produce gumming and engine-seizing problems), and the much-vaunted idea of turning the Makatini Flats into a vast ethanol farm.

They also think that the present Sasol 1, 2 and 3 plants could become obsolete in the 1990s when several other processes, which cut out the initial gasification of coal as used by Sasol, are eliminated, or which convert cheap methanol straight into petrol.

The basis for all this local fuel potential of the future is, of course, South Africa's treasure house of coal, much richer than thought before, at 75 000-million tons.

The country, says Professor Dutkiewicz, can safely generate multiples of its present electricity demands, plus manufacture Sasol petrols and methanols, plus coal exports of up to 250-million tons a year, without feeling the pinch until well into next century, when coal exports should drop.

Coal will also, indirectly, power the thousands of future battery cars on South African roads.

With all measures combined, the Cape Town team assume in their scenario that it will no longer be necessary to import oil by the year 2 000, although this date is flexible. With additional capital on the way it could be reached earlier.

The report is likely to form a basis for the formulation of the State's future energy policy—but it also criticises the Government for its

All ... fact

When you do research i... you have to take every... into consideration.

Cape Town's Energy... scientists had to con... drunks.

Twice they praise the... — and warn against it.

Ethanol, a drinkable... plant matter, "has soci... sociated with its poss... icant," they write.

It means that in the l... ing your petrol tank w... the contents home for...

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KANTOOR VAN DIE EERSTE MINISTER

No. 492 7 Maart 1980

UITVOERING VAN DIE BEPALINGS VAN DIE WET OP DIE BRANDSTOFNAVORSINGSINSTITUUT EN STEENKOOL, 1963 (WET 35 VAN 1963)

Hierby word bekendgemaak dat die Staatspresident kragtens artikel 10 (4) van die Interpretasiewet, 1957 (Wet 33 van 1957), goedgekeur het dat die uitvoering van die bepalings van die Wet op die Brandstofnavorsingsinstituut en Steenkool, 1963 (Wet 35 van 1963), aan die Minister van Nywerheidswese en van Handel en Verbruikersake opgedra word, met ingang van die datum van hierdie kennisgewing.

OFFICE OF THE PRIME MINISTER

No. 492 7 March 1980

ADMINISTRATION OF THE PROVISIONS OF THE FUEL RESEARCH INSTITUTE AND COAL ACT, 1963 (ACT 35 OF 1963)

It is hereby notified that the State President has, in terms of section 10 (4) of the Interpretation Act, 1957 (Act 33 of 1957), approved that the administration of the provisions of the Fuel Research Institute and Coal Act, 1963 (Act 35 of 1963), be assigned to the Minister of Industries and of Commerce and Consumer Affairs, with effect from the date of this notice.

INHOUD

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Petrol and diesel fuel prices to be adjusted

STAR 7/3/80 (58)

The director of the Motor Industries Federation, Mr J van Huysteen, has announced that the prices of petrol and diesel fuel will be adjusted as a result of the higher rail tariffs included in the Railway Budget. The adjustments will be the same.

In coastal areas there will be no changes, but in remote rural areas which depend on road transport deliveries the price of petrol and diesel fuel will increase by up to half a cent a litre. In the Pretoria - Witwatersrand - Vereeniging area the increase will be just over a tenth of a cent a litre.

The new prices will take effect from April. — Sapa.

Petrol to cost more — it's official

STAR 8/3/80

(55)

Own Correspondent

CAPE TOWN — The price of petrol and diesel "must unavoidably be increased from April 1 following the rise in rail tariffs," the controller of petroleum products, Mr T F van der Walt said in Cape Town.

Full details of the price rise and final figures were still being calculated, he said yesterday but a director of the Federation of Motor Industries, Mr J van Huyssteen, predicted that coastal areas, including Cape Town, would be unaffected by the increase.

INCREASE

Inland areas could expect a rise of up to a half-cent per litre, while the Johannesburg-Pretoria — Witwatersrand complex would probably experience an increase of about a tenth of a cent per litre.

Consumer Organisation, including the Housewives League and Mr Eugene Roelofse's Ombudsman Office this week predicted a widespread ripple effect on consumer goods prices following Mr Chris Heunis's Railway Budget.

The Railway Budget effect on petrol prices is now expected to spread throughut the entire range of transported goods.

Neutron bomb is suspected

RDM 10/3/80

By ANTHONY RIDER
Washington Bureau

WASHINGTON. — American scientists now suspect that the mysterious flash in the sky near South Africa on September 22 last year could have been a neutron bomb explosion.

And they also suspect that the blast was not the first in the southern skies below Cape Town.

The verdict of a White House panel of outside experts earlier this year was a hazy one, more or less on the lines of: "We suspect a nuclear blast but can't be sure. As to who did it, we have no proof but South Africa has the capability."

The Central Intelligence Agency said more or less the same in secret evidence to a Congressional hearing — later leaked by a committee aide.

The CIA suspected either Israel or South Africa or both.

With so many questions still up in the air and new suspicions surfacing, the White House is to recall its panel of experts next month.

A neutron bomb causes little physical destruction but produces a vast quantity of neutrons that will kill people in a restricted area. The neutrons will not travel far and, unlike radioactive fallout, will not persist in the atmosphere.

o Last night the chairman of the Atomic Energy Board, Dr J W de Villiers, said he would no longer comment on foreign speculation about South Africa's nuclear capabilities.

ARGUS 10/3/80 55

Contract for N-project

THE CSIR and Ovenstone Construction (Ovcon) today signed a contract for the construction of the complex which will house South Africa's biggest cyclotron — a research machine that accelerates nuclear particles.

The contract for the building that will house the cyclotron at Faure was signed by Mr John Newman, director of Ovcon, and Dr C van der Merwe Brink, president of the CSIR, at a city hotel.

The cyclotron will be assembled locally and will provide medical treatment which will include a sophisticated form of cancer therapy. It will be 15 times larger than South Africa's other accelerator in Pretoria and will be able to accelerate protons to a velocity that would enable them to travel round the earth in a fifth of a second.

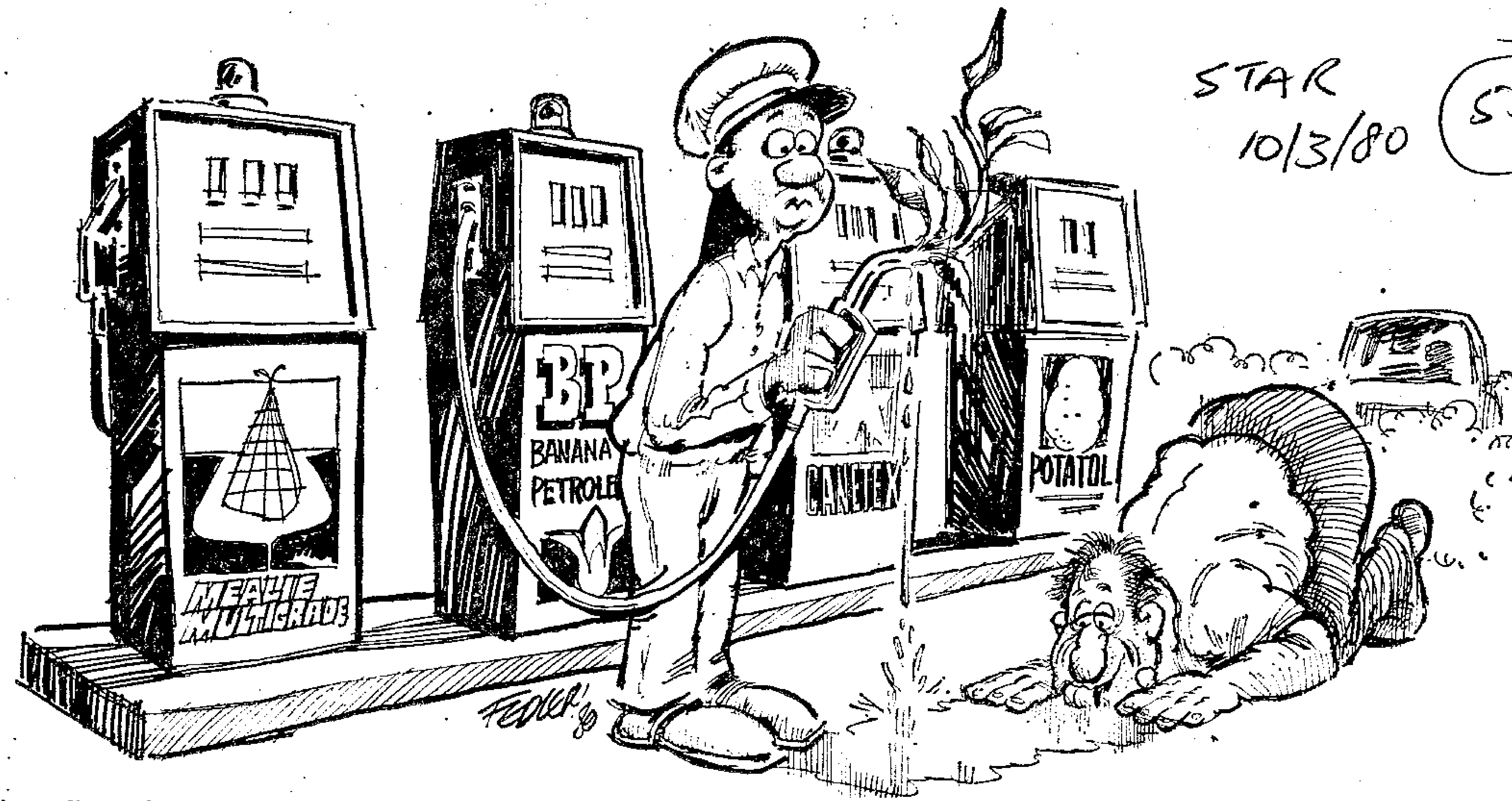
Dr G Heymann, director of the National Accelerator Centre, a CSIR institute, said today walls of the main building would be 4,5 m thick. The cyclotron's first usable beam would be produced in 1984.

Patients would be treated on site when the complex was completed.

Don't count on mealie-ohol!

STAR 10/3/80 55

There's a promising whiff of gasohol in the air . . . and at your friendly neighbourhood petrol pumps this year. So far so good, but do not count on the chance of driving your jalopy on fancy liquids like mealie-ohol or cane spirits soon.



The energy planners in Pretoria are, for good reasons, discouraging the distilling of mealies, sugar cane, wood and other farming products simply to fuel motorcars.

This despite the protestations in Parliament by men like Mr Nigel Wood (NRP, Berea), who said that surplus maize — often exported at a loss — should be profitably turned into motor fuel; and Mr George Bartlett (NRP, Amanzimtoti) said that surplus sugar should be brewed into ethanol.

This year again South Africa will be stuck with a huge mealie surplus — now estimated at more than 3-million tons. The taxpayer will have to foot a bill of about R100-million to help export it to other countries at a loss.

Contract

In the sugar industry, the production over local consumption will be an estimated 9-million tons of cane, producing 1-million tons of sugar.

Like Mr Wood and Mr Bartlett, many people think such surpluses should be used to make rude gestures at Arab oil sheikhs.

Let's start with this year's mealie surplus.

The 3-million tons excess in the estimated crop of almost 10-million tons will probably be sold abroad for some R330-million.

A lot of it will go to old friends like Taiwan on contract. Some will go to make new friends or simply undercover friends in Africa, where Zambia and Zaire beg for maize. Tanzania imports South African maize but likes to pretend it comes from somewhere else.

The rest is sold through international grain dealers all over the world. This year, because of the American grain boycott, South African maize may land up in Russia, as cattle food and as fire water in bottles of vodka.

South African mealies, therefore, not only bring in money, but also prestige, influence and even diplomatic clout.

Constant

If we decided to use the entire surplus for conversion into fuel, at the rate of 400 litres of ethanol out of every ton of of maize, we would create a lake of ethanol containing at least 1 200-million litres, equal to 7,5-million barrels of oil.

According to Energy, the official journal of the Institute of Fuel (South African group), we import about 100-million barrels of oil a year, a figure that has remained constant for some years. This means that our entire mealie surplus could offset a mere 7.5 percent of our total oil imports this year: a rough estimate, since ethanol is not equal to mineral oil.

At a spot market price of R35 a barrel of oil, our mealie surplus would save the country R262,5-million in oil imports.

Export

But at the same time it would lose us a much larger amount of foreign exchange earned in mealie exports, plus their inherent political influence. Leaving aside such questions as what the country would do with its idle ethanol factories during years when the mealie crop fails.

The story with sugar as a motor-fuel substitute is similar to that of mealies, even though Brazil — with lower wages, more rainfall and year-round seasons — uses sugar cane profitably to produce petrol.

South Africa grows about 18-million tons of sugar cane a year, of which 9-million tons are turned into 1-million tons of export sugar.

Here again this tonnage, at 70 litres of ethanol to every ton of cane, could produce 630-million litres of motor fuel a year, equivalent to 3,9-million barrels of imported oil.

So all the country's sugar exports would reduce oil imports by less than four percent — but at a great loss.

For we would save R136,5-million on oil imports by using suager, but would withdraw a million tons of sugar for export, now selling at R425 a ton on the London market.

Solution

So petrol from sugar seems uneconomic at present, since it is still more expensive than spot-market oil. Its only promise of viability is to allow farmers to mass-produce cane for processing on lands now lying fallow because of restrictive sugar quotas.

That is why energy planners are thinking of ethanol production from mealies, sugar and especially grain sorghum, as rather a last-ditch solution, compared to their advocacy of methanol, made from coal, which is not subject to rains and the cost of tractors and fertilisers, or such jinxes as stalk borers, mildew and fungus.

Ethanol has two main advantages: it is the petrol substitute that mixes readily with diesel, and it can be made from waste products, like the Union Spirit from Natal Cane Byproducts which fuelled our fathers' cars during World War 2. So it will probably remain a small ingredient in the blends of voomahs from the petrol pumps in coming years.

But to make any impression on the oil sheikhs we would have to plant every nook and cranny of South Africa with maize, sorghum and cane.

New generator for City power

CAPE TIMES 11/3/80 Municipal Reporter 63 263

THE City Council's utilities and works committee yesterday accepted a R6-million tender for a new gas turbine generator that will give the City a more secure supply of electricity.

The plant, which can generate 50 MW within minutes, will act as an emergency reserve for the central area of the City and can also be used to supply peaking power.

Tenders ranged from more than R12-million down to just below R6-million for the Curtiss Wright plant, virtually a modified aircraft engine.

The City electrical engineer, Mr D C Palser, said the firm had offered to provide a further gas turbine plant at the same price immediately after the tendered plant had been installed. He said this would enable the council to close down the Table Bay power station, leading to a saving of R3,8-million.

However, Mr Palser felt it was more important to have a possible 200 MW of power available "on cold stand-by" from Table Bay than to have an extra 50 MW available instantly from an additional gas turbine. He was supported by the committee.

RDM 11/3/80

55

Fluor now an anti-apartheid target

London Bureau

LONDON. — Pressure against international links with South Africa's vital oil-from-coal project, Sasol, was intensified yesterday with a joint British-American protest against the activities of the US conglomerate, Fluor Corporation.

A resolution attacking Fluor's massive R2-billion plant-building contract for Sasol was tabled for yesterday's meeting of Fluor shareholders in California.

In London, a picket demonstrated outside Fluor's city office and a letter to its president, Dr R Olivier, was handed in by Bishop Colin Winter, Anglican Bishop-in-exile of South West Africa.

The letter urged Fluor to cease all investment and expansion in South Africa until the "system of apartheid" was ended. It was signed, among others, by the Rev Harry Morton, general secretary of the British Council of Churches (BCC), and four British bishops.

The letter points out that the BCC recently decided to adopt a policy of progressive disengagement from South Africa until it was clear that there was progress towards African majority rights.

The letter was drafted by the British pressure group End Loans to Southern Africa, of which Bishop Winter is the chairman.

Fluor, a petrochemical engineering group, was awarded the contract for the construction of the third oil-from-coal project at Secunda in 1979. It is now a prime target for anti-apartheid protesters who, in the past, have centred their criticism largely on the role of the major international banks.

STU13-9

13110 PERFORMERS DIPLOMA IN SPEECH & DRAMA — EXAMINATION RESULTS IN FACULTY ARTS — YEAR : 1 — AS AT 29 02 80

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION
~~135656C~~	~~BANTJES~~	~~EDUARD STEPHANUS~~	~~116120~~	~~DRAMA I~~
154249M	COMPION	MATTHYS CHRISTOFFEL	116120	DRAMA I
~~156762U~~	~~KRUSKAL~~	~~MEGAN~~	~~116120~~	~~DRAMA I~~
162343K	MILITZ	NICOLA ANDREA	116120	DRAMA I
~~154826P~~	~~SAMUELS~~	~~ANDRE CUPIDO~~	~~116120~~	~~DRAMA I~~

* TOTAL NUMBER OF STUDENTS 5

DEAN

More money for Soekor search

55

RDM 11/3/80.

THE SENATE. — The Government has allocated an extra R37 700 000 to Soekor to finance three off-shore oil drills.

The Minister of Mines, Mr F W de Klerk, speaking in the Committee Stage of the Additional Appropriation Bill, told the Assembly the Government had originally budgeted for only one off-shore drill.

But it had now been decided to search for oil with another two drills.

Senator A Bozas (NRP) said the Opposition fully supported the Government's policy of increasing aid to Soekor.

The Deputy Minister of Defence, Mr Kobie Coetsee, said the Government had encountered considerable inflation pressure in the acquisition of armaments.

This was one of the main reasons for the allocation of an additional R60-million to the Department of Defence.

Mr Coetsee said representations had been made in both Houses of Parliament to improve conditions of service for defence personnel, and an additional amount of R20-million was required for that purpose.

The Minister of Finance, Senator Owen Horwood, said the question of subsidies for black commuters was a sensitive but important issue.

Replying to Sen Bozas, Sen Horwood said discussions were currently being conducted to find a formula for the subsidies.

Introducing the Second Reading Debate of the Additional Appropriation Bill, Sen Horwood said the additional R352 200 000 required represented a 3,1% increase.

The additional appropriation could be financed by savings of up to R100-million on other votes.

"In the circumstances, I can say that our objective of financial discipline can be successfully executed, also in the present book year." — Sapa.

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 5

13010 BACHELOR OF ARTS YEAR : 1

STUD NO								
150180P	MORT	MELISSA RUTH PRINCE	114101	RELIGIOUS STUDIES I	UP	(62)	1	150180P
150783V	MULLER	SUSAN FLORENCE	110101	HISTORY I	UP	(50)	1	150783V
157521U	MURRAY	ESTELLE	116120	DRAMA I.	ABS		1	157521U
137983G	NAKIDIEN	MOGAMAT TOYER	107101	ENGLISH I (PRE-1980)	3NX		7	137983G
157560L	NASH	JENNIFER ANNE	004101 115102	PSYCHOLOGY I FRENCH INTENSIVE	2- F	(61) (47)	1	157560L
~~155924H~~	~~NEWMAN~~	~~JENNIFER ANN~~	~~111101~~	~~MATHEMATICS I M102~~	~~UP~~	~~(55)~~	~~1~~	~~155924H~~
157913V	NORMANN	HANSJURG	117101	POLITICAL SCIENCE I	UP	(52)	1	157913V
~~155878H~~	~~O'CONNOR~~	~~SHIRLEY ANNE~~	~~114101~~	~~RELIGIOUS STUDIES I~~	~~UP~~	~~(57)~~	~~1~~	~~155878H~~
162116N	PAM	JONATHAN RICHARD	004101	PSYCHOLOGY I	3	(52)	7	162116N
~~154187V~~	~~PATERSON~~	~~IAN JAMES STEWART~~	~~107101~~ 110101	~~ENGLISH I (PRE-1980)~~ HISTORY I	~~3NX~~ F	(40)	~~1~~	~~154187V~~
154286C	PETERSEN	DESIRE SHIRLEY	102103 ~~116120~~	AFRIKAANS EN NEDERLANDS I ~~DRAMA I~~	UP ~~UP~~	(50) ~~(50)~~	1	154286C
156134L	PHEIFFER	FREDI CHRISTIAAN	905104	CHEMISTRY IM	F	(49)	1	156134L
~~150154L~~	~~POTGIETER~~	~~FELICITY ANGELA~~	~~107101~~ 110101	~~ENGLISH I (PRE-1980)~~ HISTORY I	~~3NX~~ UP	(50)	~~1~~	~~150154L~~
133406G	PRITCHARD	ROBERT STEPHEN	115102 ~~115103~~	FRENCH INTENSIVE ~~ITALIAN INTENSIVE~~	F ~~UP~~	(40) ~~(54)~~	1	133406G

UCT

Paraffin overpriced

55
12/3/80

EAST LONDON — The reduced price of paraffin took effect more than ten days ago — but some local general dealers are still selling it at the old price.

A survey conducted yesterday revealed that at least one shop in the area is charging as much as eight cents in excess of the controlled price.

Retailers are allowed a 50 per cent mark up on paraffin which means that a litre of the commodity may not be sold for more than 45 cents and a 750 ml (an ordinary bottle) for not more than 34 cents.

Retailers in the East London area purchase paraffin at a net price of 30,63 cents when buying in bulk.

Consumers who have complaints about being overcharged for paraffin may approach the local office of the Department of Commerce and Consumer Affairs whose price control section will investigate the matter. — DDR

ST013-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

15016 B.A./LL.B. YEAR : 1 15016

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL			
~~154230R~~	~~ARP~~	~~HANS-EWIK~~	~~105105~~	~~LATIN ELEMENTARY~~			~~1~~	~~154230R~~
157795R	BARRETT	MICHAEL CONRAN	117101	POLITICAL SCIENCE I	UP	(59)	1	157795R
~~1535620~~	~~BUCHINSKY~~	~~GLENN BRUCE~~	~~102101~~	~~AFRIKAANS~~	~~UP~~	~~(50)~~	~~1~~	~~1535620~~
156581X	COHEN	PETER DAVID	117101	POLITICAL SCIENCE I	UP	(57)	1	156581X
~~155082F~~	~~COURAD~~	~~INDRAN~~	~~105105~~	~~LATIN ELEMENTARY~~	~~ABS~~		~~1~~	~~155082F~~
157855G	DE KOCK	RODNEY JAMES	105105	LATIN ELEMENTARY	UP	(56)	1	157855G
~~154395W~~	~~DREYER~~	~~NADINE~~	~~117101~~	~~POLITICAL SCIENCE I~~	~~UP~~	~~(59)~~	~~1~~	~~154395W~~
155823Y	FISHER	MICHAEL ALEX	102101	AFRIKAANS	F		1	155823Y
~~150196G~~	~~GINWALA~~	~~DEREEKA~~	~~117101~~	~~POLITICAL SCIENCE I~~	~~UP~~	~~(56)~~	~~1~~	~~150196G~~
158314F	GORDON	STEPHEN MICHAEL	105104	LATIN I	F	(31)	1	158314F
~~158503L~~	~~HARDCASTLE~~	~~JUSTIN FRANK~~	~~105105~~	~~LATIN ELEMENTARY~~	~~UP~~	~~(50)~~	~~1~~	~~158503L~~
038176W	HARRIES	ROGER EZRA PAUL	107101	ENGLISH I (PRE-1980)	2-	(64)	1	038176W
~~115449N~~	~~HENDRICKS~~	~~ROBIN ARTHUR JUSTIN~~	~~105105~~	~~LATIN ELEMENTARY~~	~~ABS~~		~~1~~	~~115449N~~
159727K	KANE-BERMAN	DIANA LOUISE STUART	117101	POLITICAL SCIENCE I	UP	(55)	1	159727K
		~~EDWARD WALLACE~~	~~117101~~	~~POLITICAL SCIENCE I~~	~~F~~	~~(47)~~	~~7~~	~~162529M~~
		MERVYN BERNARD CHARLES	105105	LATIN ELEMENTARY	ABS		1	161080M
		~~NAZEER~~	~~105105~~	~~LATIN ELEMENTARY~~	~~UP~~	~~(51)~~	~~1~~	~~157638W~~
		STEPHEN	105105	LATIN ELEMENTARY	ABS		1	155155X
		~~WAYNE BRADLEY~~	~~102101~~	~~AFRIKAANS~~	~~F~~		~~1~~	~~156583Z~~
		WAYNE MILES LUTHER	102101	AFRIKAANS	UP	(50)	1	153752X
		~~ILSE~~	~~603202~~	~~ROMAN LAW & JURISPRUDENCE IF~~		~~(49)~~	~~1~~	~~156337F~~
		MOHAMED FAIQ	105104	LATIN I	F	(34)	1	154745U
		~~JONATHAN GRANT~~	~~102101~~	~~AFRIKAANS~~	~~UP~~	~~(50)~~	~~1~~	~~156056D~~
		EDWARD BADOR PETER	105104	LATIN I	UP	(50)	1	154272M
		~~LAUREN RENEE~~	~~105104~~	~~LATIN I~~	~~UP~~	~~(50)~~	~~1~~	~~154933E~~

Opec tightens the well-head tap

(55) RDM 18/3/80

LONDON. — Member states of the Organisation of Petroleum Exporting Countries have begun to make forecast production cuts, signalling that the modest glut of oil will not last long and that prices cannot be expected to ease, say oil-industry analysts.

Production of the 13 Opec members was down more than a million barrels a day in January, and indications from Iran alone show it must have been even lower in February.

Opec output may fall drastically next month if Saudi Arabia stops producing the extra million barrels a day it now exports. The Saudis increased production to 9 500 000 barrels from 8 500 000 last year to ease a worldwide shortage after Iran's revolution.

The Saudi Oil Minister, Sheikh Ahmed Zaki Yamani, says his Government will soon decide whether to maintain this output after April 1.

Kuwait plans to cut output by 500 000 barrels daily from April 1. Venezuela and the United Arab Emirates plan smaller cuts.

Saudi Arabia has, however, said it will do nothing to disrupt world oil supplies, not that any imminent shortage threatens because industrial countries' stocks are at record levels.

Sheikh Yamani estimates them at around 5 000-million barrels, stored in tanks, tankers, caverns and salt domes.

But if no supply crisis is in sight, the balance between supply and demand will be a tight one and by mid-1980 price pressures will be building up again, says London broker Grieveson, Grant & Co.

It foresees 1980 average daily Opec production turning out to be 1 600 000 to 2-million barrels down on the 1979 figure of around 30 500 000 barrels.

Demand for Opec oil, the US Department of Energy predicts, is likely to be around 29-million barrels daily. Uncertainties exist, however.

Iran, for instance, aims to produce 3-million to 3 500 000 barrels daily. But official figures say production has dropped to 2 700 000 and diplomats have put it as low as 2-million.

The Oil Minister, Mr Ali Akber Moinfar, confirms that in the past Iranian month, it exported only 1 700 000 barrels a day.

Diplomats in Teheran believe that lack of spare parts has contributed to lower Iranian output and that it will be difficult to increase production if the Government wishes to.

Most spares needed for the oil sector are subject to a US embargo because of the hostage crisis.

Besides curbing output, Opec states are tending to contract to sell less of their crude oil to the major companies. In a radical change in the pattern of world oil trading they are selling more crude to smaller independent companies and to state oil corporations and in government-to-government deals than to the majors.

They are also selling more on the spot market.

A recent report made iternally by one of the majors said that four years ago they bought 17-million to 18 -million barrels daily direct from Opec. This year the majors expect to buy only about 12-million — less than two-thirds of their needs.

Kuwait, for instance, is expected to make Royal Dutch-/Shell, Gulf Oil and British Petroleum bear the brunt of its 25% production cut. According to Sheikh Yamani the Saudi State corporation, Petromin, exported 1 400 000 barrels daily last year and has concluded 15 government-to-government deals.

Gulf Oil expects its total foreign crude supply after April 1 to be less than half what it had available in 1979.

Executives of the major companies argue that diminished access to contract crude fo their global, integrated operations, through which supplies can be switched around the world, will make managing any future supply crisis less easy.

Opec states seek a greater say in the distribution of their oil and role in downstream refining, shipping and petrochemical activities.

"I believe that one way of contributing to the stability of the market would be through involvement of the producers in the integrated system, by allowing a more equitable sharing in the ownership and control of downstream operations," says Opec's secretary-general, Mr Rene Ortiz.

Using 1978 figures, he says Opec had only a 6,7% share in world refining capacity.

Indicative of deals intended to change this was one last month between Mobil and Petromin, part of which was an entitlement to Saudi crude measured according to the scale of Mobil investment in the Yanbo refinery and petrochemical complex on the Red Sea.

* * *

FREE-WORLD energy demand will grow at only about 2,5% a year over the next two decades, compared with economic growth of 3,5%, says Exxon Corporation in its world energy outlook

energy use growth was 5,5% a year from 1965 to 1973 when the free world economy grew 5% a year. It gives no later figures.

Exxon projects that free-world energy demand will reach nearly 130-million barrels a day oil equivalent by 1990 and exceed 160-million barrels a day by 2000 — an increase of about 33% over 1978 levels by 1990 and about 66% by 2000. — Reuter.

Farmers told not to become too hopeful over maize fuel

RDM 14/3/80.

By JEREMY BROOKS

IT WAS clear the Government would not allow fuel alcohols derived from agricultural products to compete freely with petrol, says the chairman of the South African Maize Producers Institute, Mr S Ferreira.

In a statement issued from Bothaville, Mr Ferreira said the time when maize was regarded merely as a staple food, rather than as a valuable resource, was past.

"Recent Press reports following an announcement by the Minister of Energy Affairs concerning fuel alcohols created the wrong impression in that they said the way was now open for the large-scale production of fuel from agricultural products," he said.

"Close study of the full text of the Minister's statement shows that this is in fact not the case."

Mr Ferreira said the emphasis in the statement fell on alcohols derived from coal, while the fermentation of agricultural crops was seen only as a side-line.

"The statement makes it clear that alcohols will not be allowed to compete freely with petroleum. It is also clear that agricultural products, as a source of alcohol, will have to play second fiddle to coal and other sources in the already restricted area which has been set aside for alcohols.

"It is unreasonable and unacceptable that the Government should protect petrol and coal interests in this manner at the cost of agriculture."

Mr Ferreira said this policy differed widely with that of the US, where the producers of alcohol from grain were being subsidised.

"The Government, at the very least, should guarantee that all taxes derived from the production of grain alcohols will be ploughed back into the industry," he said.

RAND DAILY MAIL, Friday, March 14, 1980 7

Paraffin price is open to abuse

55 RDM 14/3/80.

By VITA PALESTRANT

PRICE control was introduced on illuminating paraffin five years ago to protect consumers — but the very people it is meant to protect are unlikely to be any the wiser whether they have been overcharged or not.

Paraffin, a major source of energy in black households, was reduced by 5c a litre at the end of last month to alleviate the burden on black consumers.

However its pricing structure is such that even now it costs almost as much as petrol — and sometimes considerably more.

A major supplier last week estimated the average consumption of township households at 80 litres of paraffin a month.

This represents — on the recent reduction — a hefty R43,20 a month — more than many white homes pay for electricity.

Consumer leaders have described the pricing structure of paraffin "a mess".

It is so complicated that it is virtually impossible for the average consumer to know whether he or she has been overcharged or not.

It could also lead to widescale abuse.

Basically, the maximum retail controlled price of paraffin is based on the oil companies' wholesale list price plus 50%.

But this is where simplicity ends and problems begin.

The following variables — within the same distribution areas — give rise to different retail prices:

- Not all oil companies have the same wholesale price. The wholesale price of paraffin is not price controlled.
- The wholesale price is determined by the size and type of container paraffin is sold in.
- Traders are allowed to resell paraffin from any size container and recoup the cost of the container.

This means that the end price to the consumer varies — making it difficult for the consumer to know what the correct price should be.

If, for example a trader sells a litre of paraffin from a bulk supply of 200 litres or more, he can charge a maximum of 52c, or 54c with GST — the oil companies' wholesale price of 34,43c plus 50%.

This is straightforward and simple enough since all oil companies have the same bulk prices.

However, if the trader sells paraffin from smaller 20 litre containers — and there are two different types — his customer is likely to pay considerably more for paraffin than for petrol:

- If the trader sells paraffin to his customers from a 20 litre square tin, he can charge his customer a maximum of 63c or 66c — depending on the oil companies' price, plus 50%.

Most oil companies charge between R8,41 and R8,78 for this type and size of container.

- But, if a trader sells from a 20 litre round drum, costing him R8,95 or R9,19 (depending on the oil company) — he can charge 68c to 69c.

The above do not include GST.

Thus the consumer could be asked to pay anything between 54c and 72c with GST, and be none the wiser whether he was charged the correct amount or not.

A trader could claim to have decanted paraffin from the more expensive 20 litre round drum (while decanting from a bulk container in reality) and charge the higher price making himself a quick 18c over and above his 50% mark-up.

Only by referring to the trader's invoices and seeing the container could the consumer tell what he should be charged.

This is clearly impossible. Only inspectors from the Department of Commerce and Consumers Affairs are able to do this on their spot checks.

One uniform maximum price could be achieved by changing the regulations controlling the price of paraffin.

There is also another aspect in the paraffin story that consumers resent.

Even if the trader sells his paraffin at the lower bulk price, this basic commodity costs 54c — almost the same as that of petrol on the Reef (54,3c).

Consumer Ombudsman Eugene Roelofse, who was instrumental in the battle to get paraffin price-controlled, said he was disappointed in the way it had been applied.

"This is a typical egg dance by the authorities to give a veneer of consumer protection while at the same time allowing the trader to make as much money as he wishes."

Mrs Yvonne Forshaw, vice-president of the Housewives League, said she was horrified that the mark-up on paraffin was as high as 50%.

Stores	750ml price	Price per litre
Pat's Cash Store, Soweto	34c	45c
Sizanani Fish & Chips, Soweto	[illegible]	[illegible]
Andries Cash Store, Soweto	[illegible]	[illegible]
Langatsha General Dealer, Soweto	35c	[illegible]
Bakwena General Dealer, Soweto	41c	51c
Makhurong Trading Store, Soweto	42c	[illegible]
Phirwa Cash Store, Soweto	37c	49c
Serutla Enterprises, Soweto	35c	44c
Renes Fresh Produce, Soweto	47c	[illegible]
Uncle Joes General Dealer, Soweto	49c	61c
Sea Fresh Fish & Chips, Soweto	—	[illegible]
Willies Trading, Soweto	[illegible]	61c
Dolly Dairy, Soweto	[illegible]	[illegible]
Vera's Bazaar, Soweto	35c	[illegible]
Busy Bay Trading Store, Soweto	[illegible]	[illegible]
[illegible] Fresh Produce, Soweto	—	[illegible]
[illegible] Cash Store, Soweto	—	[illegible]
[illegible] General Dealer, Soweto	[illegible]	[illegible]
Ethel General Dealer, Soweto	[illegible]	[illegible]
[illegible] Boutique, Soweto	[illegible]	[illegible]
Thandabantu Supermarket, Katlehong	[illegible]	[illegible]
[illegible] Supermarket, Katlehong	[illegible]	[illegible]
Katlehong General Dealer, Katlehong	[illegible]	[illegible]
[illegible] Stores, Katlehong	[illegible]	[illegible]
[illegible] Store, Katlehong	[illegible]	[illegible]
Vukuzenzele, Katlehong	[illegible]	[illegible]
Shylock, Katlehong	32c	[illegible]
Aubrey & Cobbler, Mamelodi	—	[illegible]
Sibiya Cash Store, Mamelodi	[illegible]	[illegible]
[illegible] Eating House, Mamelodi	—	[illegible]
[illegible], Mamelodi	[illegible]	[illegible]
The Lizard, Mamelodi	[illegible]	[illegible]
[illegible], Mamelodi	[illegible]	[illegible]
[illegible] & Son, Mamelodi	[illegible]	[illegible]
[illegible], Mamelodi	[illegible]	[illegible]

However a spokesman for the Price Control office explained the high mark-up as follows:

"The main reason is the difference in distribution methods and costs. While petrol is delivered in bulk to service stations and sold in fairly large quantities, paraffin is normally supplied in small quantities to resellers and usually sold by the latter in quantities of 1 litre or 750ml at a time. Due to their higher distribution costs, the gross profit margin to the reseller of paraffin is higher than that of petrol".

The spokesman also maintained the complicated pricing structure presented no obstacles to inspectors from Trade inspections checking on traders.

(Offenders face fines not exceeding R2 000 or imprisonment not exceeding two years or both).

Prior to the introduction of price control, both the Co-ordinating Consumer Council and Consumer Mail conducted surveys showing traders were profiteering and charging their customers twice as much as the going rate for petrol with mark-ups of up to 150%.

When control was introduced five years ago, the Price Controller, Mr E G de Beer, said retailers were making mark-ups of between 70% to 330%.

This week Consumer Mail, in co-operation with the Ombudsman Office, surveyed 35 traders in Soweto, Mamelodi and Katlehong.

The survey showed that consumers are asked to pay between 31c to 61c a litre for paraffin.

This means that township dwellers can cut their energy bills by nearly 100% by shopping around.

Eight — or 23% — of the stores surveyed charged more than 54c a litre.

In announcing the recent reduction, the Minister of Commerce and Consumer Affairs, Dr Schalk van der Merwe, said a market research survey had shown that the price of paraffin was placing a heavy burden on blacks.

The cost of paraffin required by a household of seven people for the use of 2 paraffin stoves, 2 paraffin lamps and one paraffin heater during winter represented 18% and 27% of its average monthly income during the summer and winter months respectively.

The tabulation shows the shops surveyed; price for 750ml of paraffin and the price for one litre of paraffin.

FOOTNOTE: Consumers who have been charged 41c for 750ml or 54c per litre (including GST) for paraffin are advised to contact the Trade Inspections service of the Department of Commerce and Consumer Affairs [illegible]

(55)

ETHANOL PROSPECTUS

Vague prospects

FM 14/3/80

What may be South Africa's first "ethanol prospectus" has been published. But if it goes down in history at all, it is likely to be for other reasons.

Basically, it offers 250 000 ordinary shares at par value of R1 each in South African Ethanol Fuels (SAEF), of Pinetown, with a 20-share minimum subscription. Apart from the spelling, this document has some strange features. The offer opened "as from 9 am on January 30, 1980" but the prospectus was only registered, according to the cover, on February 1.

More seriously, it contains information which is outdated and therefore misleading to investors who might wish to subscribe before the closing date of March 31. Negotiations with CG Smith Sugar for the Melville Mill have long since fallen through, and even the suggested alternative site at Isithebe has been replaced by plans to set up in the old Masonite plant at Canelands. Even this scheme has fallen through as Tongaat terminated negotiations with MD Robert Ottignon this week and the contemplated sale of the property has fallen away.

Curious guarantee

Then there is the curious matter of SA Ethanol Products (SAEP), a subsidiary bought from Ottignon's wife, herself a director of SAEF, for R250 000 on deferred terms. SAEP was formed last October for the unusual purpose of "selling raw material supply quotas to farmers", an occupation said to yield an unspecified "profitable income" and guarantee a supply of raw materials.

SAEP "also owns the biomass conversion process technology and design layout." Whether these "intangible assets of vital importance" are worth R250 000 is another matter. Equally extraordinary is the contract for a fixed price of R1,15m awarded to Pinewood Contractors to supply and erect the plant. More than half the payment is to be made in shares at SAEF's option. The number of shares is incorrectly stated as 509 570 instead of 590 970 as appears in subsequent paragraphs of the prospectus.

How much of their own money do the promoters have in the venture? It appears that of the 2m ordinary shares they have 9 030, the public is to subscribe for 1,4m and the balance is to part pay the contractors. What this boils down to is that the promoters propose to spend over R2m and they actually have R9 000, which has already been used on preliminary expenses.

On the subject of marketing, "it is envisaged that a major national oil company will take over the marketing of our branded product with our own registered trade mark but negotiations are not finalised to date."

Pre-tax gross profit during the first year from the sale of 21m litres of ethanol at 25c/ℓ and 1 000 t of livestock feed at R100/t is estimated to be R1.68m, which will allow an "after tax dividend of 30c per share payable within 18-24 months."

There is nothing wrong in principle with producing ethanol from timber and cane wastes as SAEF proposes, but the present scheme can hardly be regarded as a serious investment exercise and should be given a wide berth.

Whether the prospectus conforms to the Companies Act's requirements of fair presentation of the company's state of affairs could be a matter of some debate. Ottignon tells the *FM* that a new prospectus will be issued shortly bringing things up to date — but that hardly suits investors expected to form a judgment on the present document.

Among its many surprising features is that the problem of excise tax, which has bothered other prospective ethanol producers, is not even mentioned. Michael Brown

(55) FM 14/3/80

ENERGY

Intoxicating prospects

A scenario in which SA's dependence on imported oil is reduced to zero within 20 years is spelt out in *Energy 1980* a "discussion document" produced by Cape Town University's Energy Research Institute.

The game plan calls for an immediate commitment to alcohol fuels — primarily methanol but also ethanol "wherever it proves economical." With methanol capable of delivering 43% more vehicle kilometres per unit mass of coal than Sasol fuel, the institute envisages a mix of motor fuels in use by the year 2000.

Methanol would supply something like 55% of the total requirement, Sasol 25%, ethanol about 10%, and some 10% of vehicles would be battery powered. The institute, headed by Professor Richard Dutkiewicz, emphasises that the exact balance finally arrived at would be flexible, depending on technology and cost trends in the future.

Dependence on petroleum would be reduced to 64% by 1985, 30% by 1990, and 6% by 1995, as alternative fuels are brought into use, a slow trend towards public transport takes place, and the efficiency of energy use is improved.

The following assumptions are made:

- Methanol is cheaper than Sasol fuels, and will soon also be cheaper than imported crude;
- Despite its high capital cost, Sasol fuel is competitive when combined with a chemical and gas plant. Sasol expansion is thus governed by the need for these by-products.

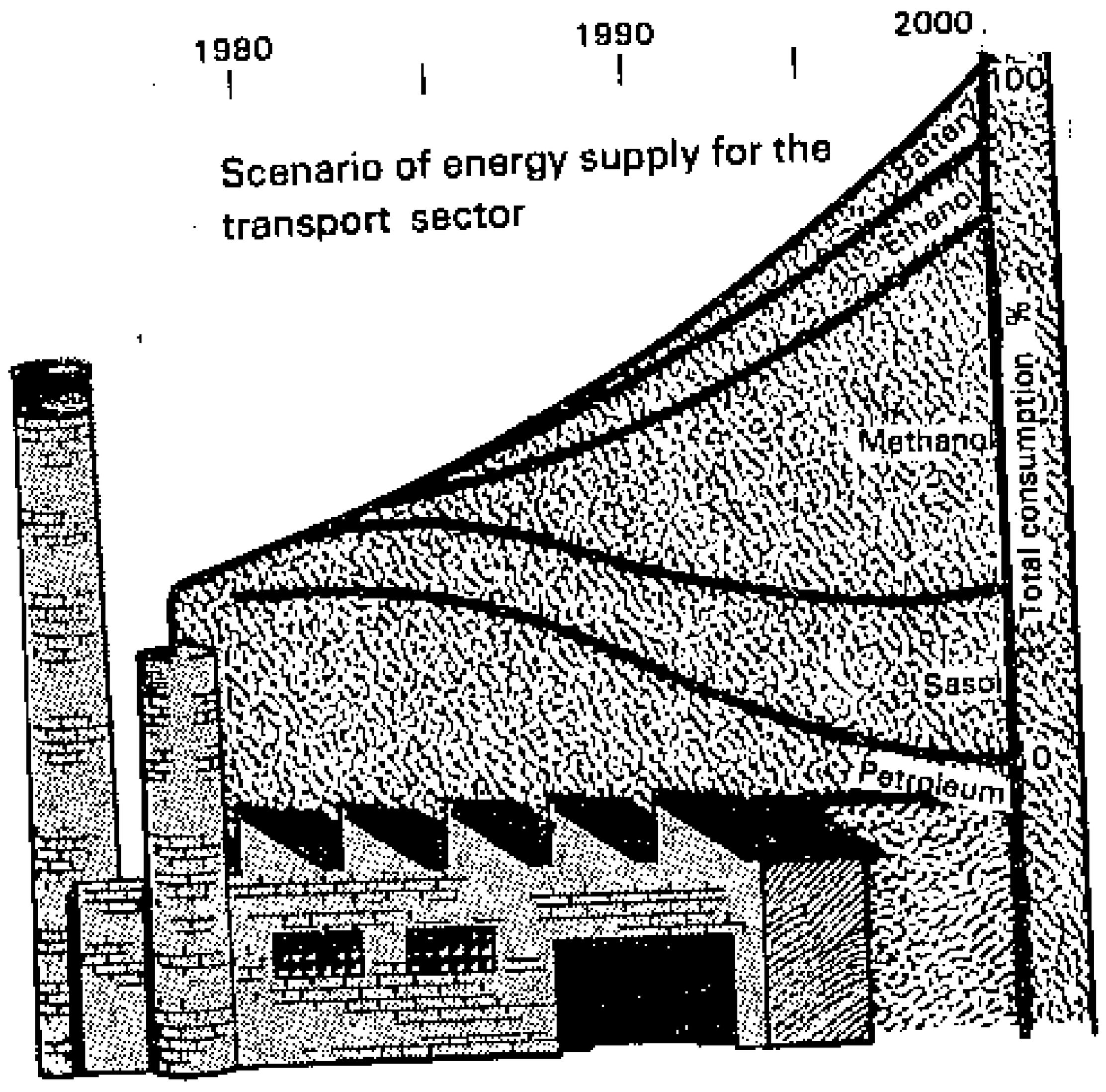
The introduction of alternative fuels must avoid disruption of existing infrastructure — present petrol and diesel engines and distribution systems. The plan thus calls for existing private vehicles to remain on petrol. The alternative fuels will first be used to supplement diesel fuels of large users. They will be used in truck engines in dual fuel configurations to redress the imbalance between diesel and petrol.

Thereafter the alcohols would be used in 100% alcohol engines in commercial vehicles and for fleet operation, and finally in new private vehicles.

Sasol fuels and imported crude will provide energy for most of the existing vehicles until they are scrapped.

Petrol and diesel will continue to be preferred fuels for certain applications: diesel for marine use, underground mining and tractors, petrol for some private motoring, lawnmowers, small pleasure craft.

A FOIL TO OIL



Even at $35 a barrel, says the report, oil-based petrol is cheaper than alternative fuels. At $45 a barrel it would be on a par with local methanol.

"However, since methanol in a high compression engine uses energy approximately 25% more efficiently than petrol in a conventional internal combustion engine, the break-even point is around $34 a barrel."

Ethanol would be 36% more expensive than methanol on the Reef, but comparable in Durban, close to the main producing areas.

The main advantages of methanol over ethanol, the report says, are that it is considerably cheaper to produce, production (from coal or natural gas) would not be subject to climatic variables as would ethanol from maize or sugar cane, and it has a good efficiency of resource utilisation.

Arguments for ethanol are that it uses a renewable resource, production is labour intensive, and it can form part of an ecosystem complex. Both can be blended with petrol, but seen purely as a fuel, methanol seems to have the edge.

Methanol has a lower calorific value than petrol, so fuel tanks would have to be nearly double the size for an equivalent vehicle range. Distribution costs would also rise because of this. But it has a higher octane number than petrol, so can be used in an engine with a higher compression ratio and higher efficiency.

Work carried out in Germany has shown that the output of a given engine is 25% greater using methanol than petrol.

Additionally, the efficiency of energy conversion from coal to methanol (56%) is higher than that for a Sasol plant (40% when, as at Sasol 2, gas has to be recycled to produce motor fuel because there is no market for the gas.)

Taking all factors into account, a methanol plant will use 70% of the coal used by Sasol for the same vehicle kilometres. Put in another way, the methanol coal-to-wheels route gives 43% more kilometres per unit mass of coal than the Sasol route. The capital cost of an equivalent plant is also lower.

An important factor in weighing the advantages of the two alcohol fuels is that the capacity for expanded production is much greater with methanol. For example, if all the 1975 exports of maize and sugar were diverted to ethanol production, it would have met 12% of total fuel requirements. By 1990 it is estimated this amount would be 4% of consumption.

It would, in any event, be unwise to switch all food exports to fuel production as food has become a political weapon.

Concludes the institute: "The main characteristic of the scenario is its flexibility in making provision for the relative quantities of the fuels to be dictated by price factors."

COMPARATIVE FUEL PRODUCTION COSTS

Cents per litre of petrol equivalent

	Production	Reef	Natal
Petrol (Ave)*	19,0	22,5	19,0
Petrol (Spot)†	28,0	31,5	28,0
Sasol	45,5	45,5	49,0
Methanol	32,7	36,7	41,8
Ethanol	43,1	50,0	43,1

* Ave — typical price for long term contracts.
† Spot — spot market price of $35/barrel.

NAFCOC'S 5-YEAR PLAN

By WILLIE BOKALA

THE NATIONAL African Federated Chamber of Commerce (Nafcoc), will investigate the possibility of establishing a building society.

(55)

This is one of Nafcoc's major targets contained in its 1980 to 1985 five-year plan which was revealed at the chamber's third general meeting of associate members held at the Jan Smuts branch of the Holiday Inn yesterday.

The plan includes:

- Working at establishing a milling company for the benefit of the chamber's members.
- All the chambers' branches will be constantly urged to devote attention to the provision of suitable training facilities for members.
- Attention will be focused on the development of industries, commerce and agriculture in the black areas with blacks as entrepreneurs, and
- The chamber intends to continue contact and negotiation with the Government to promote the fullest participation by all sections of the South African society.

Nafcoc says stimulation of black industry is a matter of great priority. The Nafcoc Industrial Development Corporation has now been formed and in order to do its work effectively it will need the financial support of the black business community and public.

Post 14/3/80

Paraffin can be sold at old price

55

DDD

14/3/80

EAST LONDON — The price of paraffin dropped more than two weeks ago — but retailers may still charge the old price until their old stock is exhausted.

To sell paraffin at the old price, however, retailers must be able to produce proof of when their stock was purchased.

Retailers are allowed a 50 per cent mark up on the cost price of the commodity, but according to a spokesman for an oil company here, few shopkeepers utilised the complete mark up due to keen competition.

When buying in bulk (200 litre drums), retailers in the East London area can acquire paraffin at a net price of 30,63 cents a litre.

Retailers who do not have facilities to transport or store such bulk quantities, buy 20 litre tins of paraffin at 38,25 cents a litre.

Consumers who feel they are being overcharged for paraffin may lodge complaints with the price control section of the local office of the Department of Commerce and Consumer Affairs. — DDR

GENERAL NEWS

Bid to enforce international oil embargo on SA

STAR 14/3/80 (55) ~~280~~

Own Correspondent

THE HAGUE—A three-day seminar opens in The Hague today seeking an international embargo on oil exports to South Africa — but with little prospect of success.

A trader on the oil spot market in Rotterdam said: "South Africa will always manage to get oil.

"They will come to the bargaining table with a heavy weapon in their hands — gold. By withholding gold, they could go a long way towards destroying the world economy, a fact that has hardly gone unnoticed by Western governments."

The seminar, organised by the Holland Committee on South Africa and the Work Group Kairos, will attempt to persuade delegates to urge their governments to impose the UN resolution calling for the embargo.

Holland's coalition government — Christian Democrats and Liberals — is determined to bring about an embargo.

A motion presented to the second chamber of Parliament in December resulted in a majority vote in favour of cutting off oil supplies to the Republic, and Foreign Minister Mr Chris van der Kloew is tentatively scheduled to discuss the matter with his EEC counterparts in Brussels in June.

The world's spot is based in Rotterdam, where 132-million tons of crude oil was discharged last year.

During the seminar delegates from 20 Western countries and a variety of organisations will hear addresses from a number of prominent speakers, including former Dutch Prime Minister Mr Joop den Uyl.

Among those expected to attend are Mr Sam Nujoma, president of Swapo, representatives of southern African liberation movements, the Organisation of African Unity, and the All Africa Conference of Churches.

Bulging figures for the oil giants

(SS) STAR 14/3/80

ly John Cavill,
ıcial Correspondent

ON — Blushing but med the last of the Sisters revealed her l figures yesterday.

Seven Sisters are world's biggest oil nies which, over the x weeks, have pa- record 1979 profits ormous as to embar- management and in- consumers as they out the latest wave flation induced by rganisation of Pet- n Exporting Coun-

ish Petroleum (51 t controlled by the a Government) com- the tally yesterday. 1979 net earnings of -million were nearly imes the 1978 figure rought the total pro- r the Seven Sisters 17 477-million last , a thumping 115 t up.

sheer obesity of figures and the ines- e impression that sters and other oil nies are growing fat he misfortunes of customers has gener- outrage among indi- s and governments. ble to take action t Opec, which vir- doubled its prices rude during 1979, fury has turned on lue-eyed Arabs," the oats with their uarters in London, Hague, Houston and ngeles.

Acutely sensitive to accusations that Opec price increases simply leave the major Western oil companies crying all the way to the bank, the London chapter of the Seven has been at pains to explain the profits — but not apologise for them.

The Seven do not use the same methods of accounting.

In Britain companies have to use the first-in-first-out (FIFO) system by which stocks are charged on the basis of what they actually cost.

In the United States, however, the last-in-first-out (LIFO) method applies under which the costs of the most recently bought stocks are applied to sales.

Hence the profits of BP and the Royal Dutch Shell group have revealed "increases" which put their American sisters, Exxon, Mobil, Texaco, Gulf and Socal, in the shade.

Highlighted by Royal Dutch Shell's world record corporate profits of R5 492-million, the British Fifo pair lifted earnings by 200 percent last year.

By contrast the American five, ranging from Exxon's 55 percent gain to Texaco's 106 percent jump, recorded an aggregate increase of 69 percent to R9 067-million.

Recording its profits BP stated flatly: "Much of the increase is a 'paper profit' caused by inflation. Much of the increase came from the effects of rising OPEC crude oil prices, which more or less doubled last year."

BP quantified this "paper profit" as R1 834-million which reduced its "real profit" to R1 084-million — a mere 175 percent up on the comparable 1978 figures.

And of the "real" increase a substantial chunk came from the first-time incorporation of more profits from BP's Alaskan oilfields where production was up.

Royal Dutch Shell puts its "paper profit" at R2 016-million and says "the effect of the inventory accounting method used . . . should be disregarded."

"That profit is not available to us. It has to be used immediately to finance costlier stocks and the only possible way we could use it would be to go into liquidation," said a Royal Dutch Shell spokesman.

And all the oil companies are quick to point out that if their earnings figures are impressive, they are dwarfed by the "take" which accrues to the exchequers of governments around the world.

Exxon, reacting to comments on its R3 486-million profits, testily emphasised that its total tax bill worldwide was five times that figure — R18 563-million.

Royal Dutch Shell's contribution via excise and customs duties and tax on profits totted up to R17 000-million or treble its own share of the loot.

And BP's global payments amounted to R12 110-million.

None of this detracts from the fact that the Sisters — ignoring the FIFO vs LIFO factor — have had a much more profitable year.

But as none of them discloses the profits split between "upstream" activities from production of their oil — and "downstream" operations — refining the marketing of products — it is not possible to identify just how much better they are faring and how much derives from the straight application of Opec prices to crude.

Margins have improved but the companies argue this has been a recovery to reasonable levels.

The senior managing director of Royal Dutch Shell, Mr Dirk de Bruyne, claimed recently: "Over the five years up to and including 1978, the industry margin as a percentage of the retail price was never higher than 1,5 percent — and at times this margin has been negative — compared with fairly constant government revenues of 78 to 80 percent and costs of about 20 percent."

Thus all governments — with producer states taking 55 percent and consumer governments 45 percent — accounted for the biggest element in the price of a litre of petrol at the pumps. If anyone has soaked the motorist it has been the treasuries of the world.

As one oil analyst in London said: "You can argue that the oil companies are too damned rich and big but any real gripe about prices should really be directed at politicians."

In the US, for example, the oil companies derived the bulk of their profit increases last year from foreign markets. Exxon's US domestic earnings rose three percent, its foreign profits by 70 percent. At the other end of the scale Texaco's 67 percent gain at home was outstripped by a leap of 146 percent overseas in markets ranging from South Africa to Britain.

Returns on capital (at historic not replacement cost) bounded up: from 14 percent to 20 percent in Exxon's case and from 11,2 percent to 24,9 percent for BP (although BP argue that the "real" return is still only 9,7 percent against 6,5 percent in 1978).

Margins on sales for the US five ranged up to 5,6 percent for Socal (from 4,4 percent in 1978) but this compared with an average of 5,8 percent for the whole American manufacturing sector. On this basis it was not excessive.

What are the Sisters doing with their higher cash flows?

The straight answer is: spending like crazy on investment, most of which is in producing and hunting for more oil.

Mr de Bruyne reckons the oil industry invests R1,50 for every 81 cents profit.

His own group was a net borrower last year — with new loans of R3 028-million — and invested R7 291-million, up 72 percent on 1978 with 87 percent of the total going on oil.

Exxon plans to spend R6 100-million this year.

And BP which invested R3 060-million in 1979 estimates it will spend R11 700-million on capital projects between 1979 and 1983.

These figures are infinitely more than the oil companies' shareholders can expect to receive in dividends, and ultimately the consumer will benefit.

Whether the Sisters will be showing the same fattening of figures in 12 months is doubtful.

The slackening in the world economy, with oil consumption likely to fall, means they will again be competing for sales in a weak market.

"Book profits" resulting from further Opec price increases are likely to be less embarrassing, after the near-100 percent jump last year Opec is expected to realise that the lemon has been squeezed fairly dry for the time being.

BP strikes cash

By John Cavill,
Financial Correspondent

LONDON — Soaring world oil prices sent British Petroleum's 1979 profits up by 265 percent to R2 918-million.

But the giant oil group said yesterday much of the increase was a "paper profit" caused by inflation arising from price increases imposed by the Organisation of Petroleum Exporting Countries (Opec) — which "more or less doubled" the cost of crude.

BP puts this "paper profit" at R1 834-million and says that when inflation is taken into account, its net earnings actually rose by 175 percent to R1 084-million.

Sales hit a record R40 871-million, of which R8 030-million was in customs duties and sales taxes.

Pre-tax profits were 96 percent higher at R7 853-million, on which tax of R4 079-million was paid.

BP is matching its "true" profits increase by lifting its total dividends by 184 percent to R492,5-million.

US oil-tax Bill

WASHINGTON — The House of Representatives yesterday approved President Carter's proposed tax on excess oil company profits by a vote of 302 to107, sending the Bill to the Senate for final action.

The legislation is expected to raise 227 300-million dollars over 10 years in taxes on windfall profits of US oil companies resulting from the phasing out of Government price controls on domestic oil.

Senate action will not begin before March 19 and could take several days. Last

It calls for 60 percent of the revenues, about 136 000-million dollars, to be used for individual and business tax cuts, which will require separate legislation. The remainder would be used to develop alternative energy sources and transport systems, and to help lower-income families pay fuel bills. — Sapa-Reuter.

STAR 15/3/80

Oil men attacked for sales to SA

Own Correspondent

AMSTERDAM — Oil companies, especially Shell, came under attack in Amsterdam yesterday when a three-day seminar on an oil embargo against South Africa began.

The seminar, organised by the Holland Committee on Southern Africa and the Work Group Kairos, is being attended by delegates from 20 countries, including several African ones.

Mr Akporode Clark, chairman of the UN Special Committee against Apartheid, accused oil companies of "scheming with the racist regime to defeat existing oil embargoes against South Africa."

He added that with the co-operation of other multinationals they had been "constructing the Sasol project with a view to converting oil from coal."

He said the illegal regime in Rhodesia was "dead, buried, unsung and unlamented," but the oil companies which did so much to prolong its agony "continued to aid and comfort its protector — the racist Pretoria regime."

The multinational companies had to be told in no uncertain terms that oil exporting countries would not tolerate the supply of their oil through open port spot markets such as Rotterdam to "the enemies of Africa and humanity."

He referred to the "shameful decision" of the United Kingdom Government last year, when it authorised a swap deal with North Sea oil with South Africa, and attacked the manoeuvres of the British Petroleum oil group in continuing supplies to South Africa.

"These decisions, so cynical and unethical, so recklessly affronted the people of Nigeria that they had no alternative but to take over the assets of British Petroleum."

Electricity costs may be reduced on Border

DD 15/3/80 55

THE ASSEMBLY — The electrification of the railway line between East London and Springfontein in the Free State could lead to a reduction in electricity rates in the Border area.

The tariff is one of the highest in the country and has often been cited as one of the reasons restricting additional investment by industries in the region.

The Minister of Transport, Mr Chris Heunis, said the current for the new electrification of the East London-Springfontein line would be supplied by Escom who would determine the price of electric energy sold to the Railways.

"It is, however, possible that the electrification of the line can lead to lower prices to other consumers," Mr Heunis said.

The Minister said this after the MP for East London North, Mr John Malcomess, asked him whether the electric power usage by the Railways would visibly affect Escom's Border area undertaking.

"This is important because what we need in the Border area, electricity-wise, is greater usage to spread the costs among a greater number of people and thus reduce the overall tariff rate.

"Will the fact that the Railways are using electricity in the Border area hep to reduce tariff rates generally?" Mr Malcomess asked.

Mr Malcomess also wanted to know if the electrification of the line would speed up the passenger service in the area and reduce travelling times.

He believed if people could reduce their travelling times on trains, passenger services would be used more frequently.

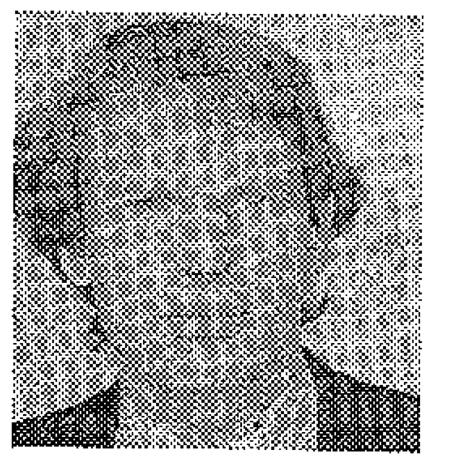
For example, the average motorist travelling between Stutterheim and East London took an hour but by train it took three hours.

If trains were faster it would aid the country because people would use their cars less.

However, Mr Heunis said he did not think there would be a substantial improvement in travelling times because of the many curves on the line, but he added the travelling times of trains after electrification had not been finalised. — PC.

KOEBERG

Just how safe is South Africa's nuclear plant?



By MARTIN WELZ

HOW safe is Koeberg power station?

Spokesmen for the Atomic Energy Board and Escom say that the nuclear industry developed in the shadow of The Bomb, and is, therefore, the "most safety-conscious in the world".

But fears persist — largely, according to a retired nuclear engineer, Mr W J Vogt, because of the laws that ban publication of any information about the use of nuclear energy without the written permission of the AEB.

Mr Vogt, who drew up specifications for the first German nuclear power station built at Kahl in 1958, has written an open letter to the Minister of Mines and Energy Resources calling for the repeal of the secrecy laws.

Public fears

There are no more secrets regarding nuclear power stations, Mr Vogt says. Detailed descriptions of the Koeberg plant have already been published overseas.

So far, the stringent secrecy laws remain, but the AEB has lifted the veil from the Koeberg scheme somewhat to answer public fears about safety — fears that were highlighted recently with reports of a major accident at a nuclear power station at Crystal River in Florida, America.

This exacerbated the concern caused by the accident a year earlier at Three Mile Island where workers are still not able to enter the reactor building to effect repairs and authorities are now obliged to authorise potentially harmful "venting" from the plant to prevent more serious consequences.

In defence of the procedures followed in licensing the Koeberg station, spokesmen for the AEB and Escom emphasised that despite the serious nature of several of the accidents reported at nuclear power stations, all of them had been effectively contained without endangering the public.

The public appeared to be unaware that they were exposed to far greater real risks by other industries — such as a possible major accident in an insecticide factory — where the high standards required by the nuclear industry did not apply, they said.

Before the start of the Koeberg project the AEB established a special licensing branch — which today has a staff of 50, including 35 scientists and engineers — to set safety standards, evaluate Escom's proposals in terms of those standards, and to monitor and inspect the construction and operation of the plant.

The AEB's standards demand that radioactive emissions from Koeberg, whether in the course of normal operation or as a result of any conceivable accident, will add no more than 25 millirems to the annual radiation exposure of anybody on the site boundary.

Radiation

Average exposure from natural sources of radiation in the Cape area is 100 millirems, while on the Witwatersrand it is 125 millirems because of its higher altitude and mineral deposits. A single chest X-ray adds 60 millirems to a patient's radiation exposure.

Escom has set its own standards even higher to ensure that annual exposure on the site boundary will not exceed 10 millirems. For people outside the Koeberg boundary exposure levels will be substantially lower: probably less than one millirem.

The vast outer concrete and steel shell of the nuclear reactor has been designed to withstand a major earthquake and contain all conceivable accidents.

The statement that it is physically impossible for a nuclear power station to explode like an atomic bomb has, however, been unable to quash fears that an accident at Koeberg might turn the Cape into a nuclear wasteland, with the entire population encamped in tents north of the Hex River Mountains.

Evacuation

These fears found expression in questions put to Escom by the Cape Town City Council in July last year following the Three Mile Island accident in America.

At the head of a long list of questions, the council suggested that in the event of a radiation leak from Koeberg it might be necessary to evacuate the population of Cape Town and surrounding areas within a radius of 100 to 200 km.

"Bearing in mind that the routes to the north would presumably be contaminated, how does Escom propose to evacuate the population through eastward routes and how long will it take?" the council asked.

Escom replied that in the case of a "worst possible accident" only the population living on the Koeberg boundary, extending possibly to a radius of 10 km from the station, would have to be evacuated. It would "certainly" not be necessary to evacuate Cape Town or Atlantis.

Farther afield the only possible way that harmful concentrations of radioactive material might reach humans following an accident is in milk produced in the area.

"We cannot pretend that anything as complex as a nuclear power plant can be made absolutely safe," the AEB spokesmen told the Sunday Times. However, the safety standards applied in the design and construction of the plant meant that the chances of a single fatality resulting from a nuclear accident were one in 100-million per year.

Exactly what a "worst possible" accident would mean, nobody really knows, since no accident has yet occurred which plant safety measures have not been able to contain.

Meltdown

One such possibility which AEB scientists have postulated is what they describe as "total meltdown". The AEB spokesmen were reluctant to disclose the amount of nuclear material in Koeberg compared with that in an atomic bomb "as the two are not comparable".

However, the reactor will create enough heat to power a 1 000-megawatt generator. Eighty tons of sea water will be heated by 10 C every second in the cooling system, creating a warm enclave on the cold Atlantic Ocean coast.

In case of an accident or breakdown in the cooling system, the nuclear reactor can be stopped within seconds by means of a procedure called "scramming". The temperature in the reactor core is so great, however, that it may take weeks to cool down. Without any cooling system, the nuclear fuel elements would melt into a "puddle" on the containment floor.

Research

Should the containment floor rupture for any unknown reason, Escom and AEB scientists postulate that at worst a "cloud" of radioactive gas would escape. There would be ample warning of such an event to allow for the evacuation of the population within a 10 km radius of the plant.

No buildings would be damaged, but those in the pathway of the cloud, up to 15 km from the plant, would have to be decontaminated by washing them down with water to which chemicals had been added.

The topsoil of land in the pathway would have to be ploughed in or removed.

The isotopes and radiation division of the AEB is conducting further research into the wind patterns on the site and the consequences of a "worst possible" accident. While the AEB has no control over development of the surrounding area, it is represented on a commission of the Department of the Environment which is presently drawing up a guide plan for the region.

An AEB spokesman said that if development was allowed in the region which could make evacuation difficult, Escom's licence could be withdrawn. Even before the accident at Three Mile Island, the AEB had told Escom that a satisfactory evacuation programme would be one of the conditions of its licence to operate Koeberg.

Danger

"The onus remains on Escom to satisfy the Atomic Energy Board that it is constructing, operating and maintaining Koeberg in a manner that will not endanger the safety of the public in any way.

"We can withdraw their licence to operate the power station at any time," the spokesman said. "It remains conditional." He emphasised that statistically a disaster from a meteorite hit on Cape Town was "500 000 times more likely to occur" than a fatality resulting from a "worst possible" nuclear accident.

The AEB is still working on a programme for the licensing of nuclear power station operators. All Escom staff involved in operating the plant will have to pass an AEB licensing examination requiring experience and a high level of practical and theoretical knowledge of all the components of the plant.

Following the Three Mile Island accident in which operators aggravated the situation because of wrong decisions taken under stress, the AEB is also studying personality factors that might influence the operators' ability to act under stress.

Nuclear waste

The AEB will only be called upon to license the site in 1981 to enable Escom to bring nuclear material on to the site. An extension to the licence will be required when Escom is ready to bring the plant into operation a year later.

More than 100 Escom staff members have already undergone training at similar stations in France and Escom's contract with the French suppliers stipulates that qualified French operators will be made available to Escom for several years after the plant goes into operation.

Neither the AEB nor Escom was able to say where the estimated one ton of highly radioactive nuclear waste which the plant will produce annually might be stored. They confirmed, however, that any storage site would have to be licensed by the AEB and that the local authority concerned will be consulted.

Enriched uranium blockade on India

17/1/80 (65)

(Argus Bureau

NEW YORK. — The United States is blocking shipments of enriched uranium to India until Prime Minister Indira Gandhi answers American questions about the fuel being used for military bombs.

The issue of the United States living up to a 15-year-old commitment to supply enriched uranium for India's Tarapur nuclear power plant has become a major problem for the two governments.

Mrs Gandhi insists that India has the right to conduct nuclear explosions for peaceful purposes, as she claims it did with an underground test in 1974.

The United States wants to stop the spread of nuclear weapons and sees no distinction between a peaceful explosion and a military test.

PAKISTAN SNAG

However, because of Soviet actions in Afghanistan, The United States wants to give economic and perhaps military assistance to Pakistan in spite of that country's nuclear programme.

This makes it more difficult to break a commitment to supply India with 20 tons of enriched uranium a year for 15 years.

An official said the United States would rather supply the fuel than risk a quarrel with Mrs Gandhi's new government. However, the US requires that India undertake not to use the American fuel or the American-built facility at Tarapur to conduct another explosion.

The 1974 Indian test was detonated with the assistance of a Canadian-built facility.

COMPLICATION

The issue is further complicated by a new US law — the Nuclear Non-proliferation Act — which bars shipment of enriched uranium to countries like India, which neither sign the nuclear nonproliferation treaty nor open their nuclear plants to outside inspection.

RDM 17/3/80

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UN backs new move to stop SA oil supplies

AMSTERDAM. — A United Nations-sponsored symposium on an oil embargo against South Africa ended in Amsterdam yesterday with the unanimous adoption of an eight-point resolution calling for strict measures to cut off the country's oil supply.

According to Mr Akborode Clark, Nigeria's UN Ambassador and chairman of the UN's Special Committee Against Apartheid, the resolution could be an important stimulant towards a UN oil embargo and tighter Opec measures to prevent oil reaching South Africa.

The three-day seminar was attended by almost 150 delegates from countries, organisations and trade unions throughout Africa, the Middle East and Western Europe.

The resolution urges independent steps by all countries to introduce national embargoes on the export of oil, oil products and oil technology to South Africa.

Oil exporting countries should ensure the adoption of "end-user" clauses in all sale contracts to prohibit their oil from eventually ending up in South Africa.

The resolution urges governments to prevent swap deals, spot market sales and deliveries by tankers, under their national flags, that help South Africa to obtain oil.

Trade unions, student movements and other pressure groups should campaign to ensure that no country is able freely to co-operate in the supply of oil to South Africa, the resolution says.

"An oil embargo is the most sensitive measure that can be used against South Africa," Mr Clark said after the seminar had ended.

The seminar was organized by the Holland Southern Africa Committee with support and financial assistance from the Special Committee Against Apartheid. — UPI.

UCT

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 2

14149 B.A./B.SC. YEAR : 4

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION
102531	[illegible]	ROSEMARY KATHERINE	102101	AFRIKAANS

* TOTAL NUMBER OF STUDENTS 1

DEAN

(55)

Uranium: a decade of fuel for Taiwan

RDM 17/3/80.

TAIPEI. — Taiwan's uranium deal with South Africa would meet her nuclear fuel needs up to 1990, officials of the state-owned Taiwan power company, Taipower, said at the weekend.

Taiwan signed a contract to buy 4 000 tons of South African uranium ore in Johannesburg on Friday during the visit by the country's Prime Minister, Mr Sun Yun-Suan.

The officials said that with the purchase of the ore, the company's nuclear power plants would have no worry about the supply of fuel till the end of the decade.

At present, Taipower has one nuclear power plant in operation. Its uranium fuel is supplied by the United States.

Taipower is expected to have four nuclear power plants operating by 1990.

Meanwhile Mr Sun visited the Sasol Secunda works in the Eastern Transvaal over the weekend. He said afterwards that the success of the oil from coal project was important, not only for South Africa, but for the world.

In a television interview, Mr Sun said he had been very impressed with what he had seen. The Sasol visit was one of the highlights of his visit to South Africa.

Today, Mr Sun will begin a three-day visit to Malawi, the Malawi Foreign Ministry announced at the weekend. — Sapa-Reuter.

DD 17/3/80

336

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Seminar demands oil embargo against SA

AMSTERDAM — An international seminar yesterday called for an oil embargo against South Africa as part of international action to break apartheid.

In a unanimous declaration, delegates to the three-day seminar asked governments, organisations and individuals to work to secure a mandatory oil embargo decision by the United Nations Security Council.

The declaration encouraged countries "to enact effective legislation and other measures to implement an oil embargo," and called for a stop to the "continued collaboration by multinational companies with the racist regime in South Africa in obtaining crude oil and refined oil products."

The seminar, organised by two Dutch committees on Southern Africa with the UN Special Committee against Apartheid, was attended by delegates from 29 countries.

Its final declaration noted that oil sanctions against South Africa were imperative because of "the country's growing threat to international peace and security."

An oil embargo was a key element of international sanctions against South Africa and would reinforce the mandatory arms embargo imposed by the UN Security Council in 1977, it added.

Mr B. A. Clark, the Nigerian ambassador to the UN and chairman of the UN Special Committee against Apartheid, told a press conference an oil embargo was "one of the most sensitive instruments we can use against South Africa. If we achieved an effective embargo for just a month the economy of South Africa would collapse."

The seminar's declaration supported the UN General Assembly resolution of December 12 calling for an oil embargo against South Africa, but condemned those countries — naming the United States, France and Britain — which, it said, continued to prevent the imposition of a mandatory oil embargo.

There was a need "for co-ordinated and active efforts to persuade these governments to chance their attitudes and co-operate in international action," it said.

The seminar emphasised that, pending a mandatory decision by the Security Council, all governments should take unilateral measures to implement the embargo.

The embargo should cover the supply of crude oil, refined oil products, the transfer of technology and know-how, equipment, capital and personnel, it said.

The seminar urged all governments and organisations opposed to apartheid to observe May 20 as an international day for an oil embargo against South Africa. — SAPA-AP

Amcoal to examine possibility of methanol from coal

18/3/80 C.T. 232 56 74 24 275

By ADAM PAYNE

JOHANNESBURG. — Amcoal, Anglo American Corporation' coal holding and managing company, looks forward to a sucessful year in 1980, with major capital projects being considered in builing up for higher exports.

This is said by the chairman, Mr W G Boustred, in his annual review. He adds that Amcoal, in co-operation with major South African interests, will be examining the possibility of manufacturing methanol from coal and it welcomes the government's encouragement of developments in this process.

Highlights from Mr Boustred's review are:

- Both the coal ming division and the industrial division — Vereeniging Refractories — of Amcoal expect growth in turnover during 1979.
- The rapidly-escalating price of oil and realization of the political instability of oil-producing regions has resulted in coal being substituted for oil on a wide scale, together with plans to build new coal- burning capacity.
- The new investment opportunities made available by the group's participation in the Richards Bay phase 3 export programme — up to 44-million tons a year — and the detailed planning of the New Denmark and New Vaal Collieries to supply Escom will ensure a growth in Amcoal's earnings in the future.
- Conditions in the export market for steaming coal are expected to firm and pricing headway will be made under medium to long-term contracts with established consumers.
- Metallurgical coal prices, which have been on a plateau, are now being exposed to the pressure of the rising level of world steam coal prices and some price advance can be expected.

One of the impressive sections o Mr Boustred's impressive review concerns Amcoal's tremendous reserves of coal and steps to increase these.

He says the company's strong coal reserve position was underlined during the year when tenders for coal supplies to new Escom power stations were successful at New Denmark and New Vaal.

Between them, these two power stations will consume 551-million tons of coal and a further 215-million tons will be dedicated at New Denmark if Escom execises the option to double the capcity of that power station.

Proven reserves owned and available for exploitation were increased during 1979 by 995-million tons to 7 700-million run-of-mine tons.

Additional options over 13 000 ha were acquired and it is expected that the target of Anglo American Corporation and its associates in this programme of securing more than 9 000-million run-of-mine tons of proven coal reserves in consolidated coal fields will be met by the end of 1982.

This year it is expected that coal rights to a further 500-million tons will be bought. These reserves are calculated on 1975 methods of mining and would be greatly increased with present and planned mining methods.

New schemes to further increase Amcoal's ability to supply coal competitively on a wide georgrahical bais by improving the strategic siting of reserves will be inroduced in 1980.

Other points from the review are:

- At the end of the year Amcoal's collieries had capital spending programmes estimated at R371-million in 1979 money compared with R124-million at the end of 1978.
- Escom and Amcoal have agreed that Amcoal will now fund the entire capital cost of completing Kriel colliey, estimated at R101 500 000. Amcoal will thus invest a further R28 900 000 in the colliery in 1980.
- Anglo's exporting collieries railed 6 700 000 tons of steaming and metallurgical coal to Richards Bay in 1979. Kleinkopje export colliery will produce steam coal at a rate of 2 500 000 tons a year in the first stage of its development compared with the original planned 2 200 000 tons.
- Although steaming coal export prices have improved it is clear that further real advances in pricing will be necessary to enable new mines to be brought into production worldwide to meet the increasing deand for internationally-traded steam coal.
- Amcoal remains confident that its participation in the phase 3 export programme will make a valuable contributoon to its future earnings.

Japan to announce anti-inflation package

TOKYO. — Prime Minister Masayoshi Ohira said the government will introduce a package of price-curbing measures within 10 days to combat inflation.

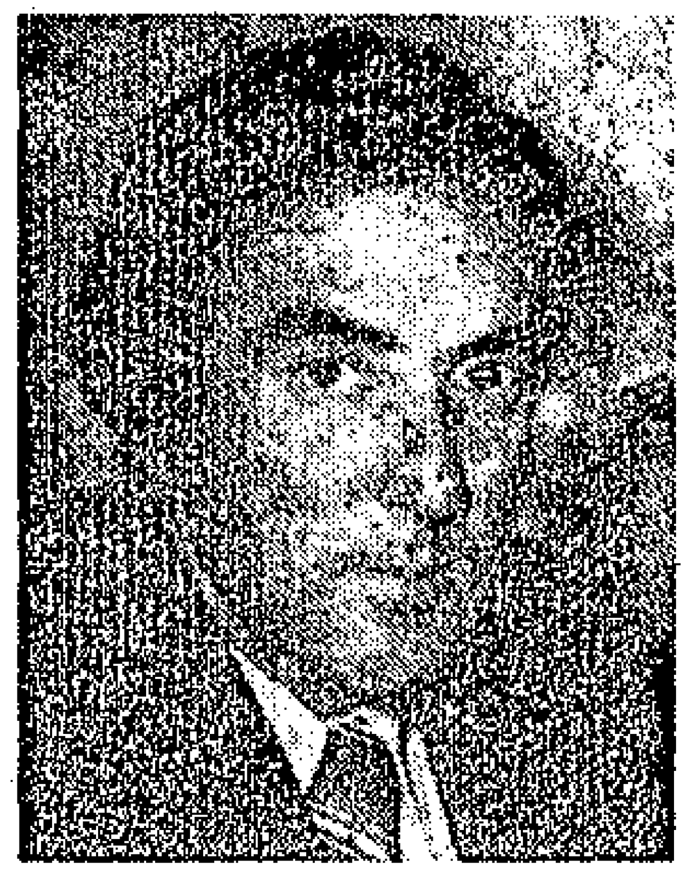
Mr Ohira also told the upper house of Parliament that the government will do its best to restrict a rise in the consumer price index in fiscal 1980, starting next month on its 6,4 percent target. He did not give any indications of measures that may be introduced.

Exports slash deficit

TOKYO. — A big increase in Japanese exports sharply reduced this country's world trade deficit in February from the previous month, the Finance Ministry said yesterday.

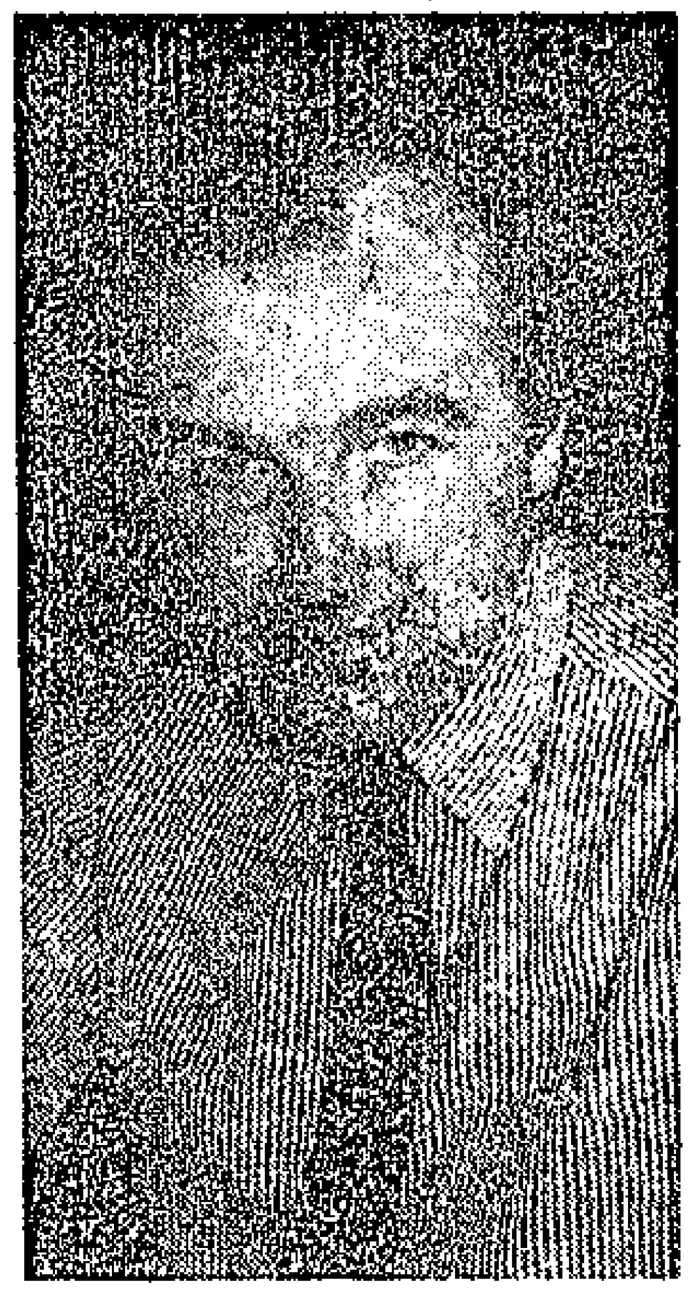
The value of Japanese exports last month rose by 23 percent over the corresponding month of last year, the biggest year-on-year increase in 17 months, it said.

However, February imports, boosted by higher crude oil and other fuel prices, showed a 46 percent increase.



Mr A J Badenhorst, left, manager of Hur (Engineering) has been appointed a director of manager of Murray and Roberts (Engineerin appointed an alternative director of the con manager mechanical and electrical, for Mur appointed an alternative di

busin and pe



Mr John Allison has been appointed chief executives of the bearings and services division of Hubert Davies Engineering Supply Co, a Blue Circle company

A South Africar H Havenga, has pointed directo struction, Middl the Otis Elevato

Mr Ken Mourant has been appointed managing director of Lectrolite (Pty) ltd, a company in the Saficon group. He succeeds Mr Herbert Muller who becomes deputy chairman.

Mr Piet Vivier ha pointed manag George branch National Ba

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 5

13010 BACHELOR OF ARTS YEAR : 1 13010

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL			
159454V	MCCARTHY	MELISSA JANE	911102	MATHEMATICS IA	3	(50)	1	159454V
152965R	MEHL	ANNETTE ELISABETH INGRID	108102	GERMAN INTENSIVE	ABS		7	152965R
			905102	CHEMISTRY IB	F	(27)		
			916103	ANIMAL BIOLOGY (HALF COURSE	F	(39)		
157093D	MERCURIO	GIANCARLO	110101	HISTORY I	ABS		1	157093D
155747Q	MICHAELS	KAREN	003101	SOCIOLOGY I	ABS		1	155747Q
			~~004101~~	~~PSYCHOLOGY I~~	~~UP~~	~~(50)~~		
			107101	ENGLISH I (PRE-1980)	3NX			
158469Z	MITCHELL	JANE	116101	CULTURAL HISTORY OF W.E. I	UP	(50)	1	158469Z
157815N	MORRIS	CATHERINE MARIA	004101	PSYCHOLOGY I	UP	(59)	1	157815N
			107101	ENGLISH I (PRE-1980)	3NX			
			115103	ITALIAN INTENSIVE	F	(43)		
150180P	MORT	MELISSA RUTH PRINCE	114101	RELIGIOUS STUDIES I	UP	(62)	1	150180P
150783V	MULLER	SUSAN FLORENCE	110101	HISTORY I	UP	(50)	1	150783V
157521U	MURRAY	ESTELLE	116120	DRAMA I	ABS		1	157521U
137983G	NAKIDIEN	MOGAMAT TOYER	107101	ENGLISH I (PRE-1980)	3NX		7	137983G
157560L	NASH	JENNIFER ANNE	004101	PSYCHOLOGY I	2-	(61)	1	157560L
			115102	FRENCH INTENSIVE	F	(47)		
~~155924H~~	~~NEWMAN~~	~~JENNIFER ANN~~	~~911101~~	~~MATHEMATICS I M102~~	~~UP~~	~~(55)~~	~~1~~	~~155924H~~
157913V	NORMANN	HANSJURG	117101	POLITICAL SCIENCE I	UP	(52)	1	157913V
~~155878H~~	~~O'CONNOR~~	~~SHIRLEY ANNE~~	~~114101~~	~~RELIGIOUS STUDIES I~~	~~UP~~	~~(57)~~	~~1~~	~~155878H~~
162116N	PAM	JONATHAN RICHARD	004101	PSYCHOLOGY I	3	(52)	7	162116N
~~154187V~~	~~PATERSON~~	~~IAN JAMES STEWART~~	~~107101~~	~~ENGLISH I (PRE-1980)~~	~~3NX~~		~~1~~	~~154187V~~
			110101	HISTORY I	F	(40)		
154286C	PETERSEN	DESIRE SHIRLEY	102103	AFRIKAANS EN NEDERLANDS I	UP	(50)	1	154286C
			~~116120~~	~~DRAMA I~~	~~UP~~	~~(50)~~		
156134L	PHEIFFER		104	CHEMISTRY IM	F	(49)	1	156134L
			~~101~~	~~ENGLISH I (PRE-1980)~~	~~3NX~~		~~1~~	~~150154L~~
			101	HISTORY I	UP	(50)		
			102	FRENCH INTENSIVE	F	(40)	1	133406G
			~~103~~	~~ITALIAN INTENSIVE~~	~~UP~~	~~(54)~~		

UCT

Argus 18/3/80

Watch on Koeberg urged

260 55 56

Municipal Reporter

THE Environmental Advisory Board wants "the larger municipalities" to have representatives on the monitoring board which will keep watch on radiation levels from Koeberg nuclear power station.

The City Council's executive committee considered this recommendation today.

DISPOSAL

In a letter to the committee the advisory board said it was 'an added cause for concern' that spent fuel from the power station, which would be sent to France for reprocessing, would be returned to South Africa for disposal.

It is believed local authorities should be represented on the monitoring board "to assure the public that the highest standards are being complied with."

Motors from Atlantis

2013/8015

By BRIAN GROBBLER, Motoring Editor

SOUTH AFRICA needs about 50 000 diesel engines in trucks and tractors a year to keep its transportation and agricultural systems operating.

Without these engines most vital road services would grind to a halt and there are also strategic reasons why there should always be a ready and plentiful supply of big diesel engines.

Till now almost all diesel engines were imported into the country, but, like the motor industry, the government has decided to embark on a local content diesel engine manufacturing plant which should make South Africa self-sufficient during the 1980s.

The Western Cape was chosen for this massive, more than R300-million project which will be sited at the new city of Atlantis, provide thousands of new jobs — mostly for coloured workers — and save the country millions of rands a year in foreign exchange. By 1983 the plant should have a turnover of R300-million and this should rise to R440-million by 1985 by which time foreign exchange savings should be R260-million annually.

Rising from the sands

Last week I visited the site, 50 km north of Cape Town, where the Atlantis Diesel Engines (ADE), as it is called, is rising out of the sands formerly covered by the Atlantic Ocean. And I met some of the top officials like Mr Bob Malcomess, chief executive logistics, and Mr Koos de Wet, marketing manager, who are putting it all together well ahead of schedule and hope to produce their first locally-made diesel engine by April next year.

The history of the ADE project goes back to 1964 when the Industrial Development Corporation first mooted a local content programme of at least 66 percent by mass for passenger cars — Phase V of the LCP came into operation on January 1 this year. The IDC did not, at that stage, recommend an investment in tractor or truck engines. So while motor manufacturers had to establish engine, component and metal stamping plants to make the parts that go into their cars, they could freely import diesel engines to go in their trucks and/or tractors.

It was only in April, 1978, that the then Minister of Economic Affairs, Mr Chris Heunis, approached the IDC to establish a diesel engine manufacturing plant as a matter of extreme urgency. The minister cited the need for rationalization as being the greatest concern to him in an industry which until then had attempted no rationalization programme at all after 60 years of marketing diesel engines in South Africa.

The scheme was approved by the Cabinet in November, 1978, and in the official announcement, July 1981 was given as the on-stream deadline — ADE officials now say they will produce the first engine by next April.

Such a scheme needs a vast amount of assests and ADE has them totalling R308-million. When it came into being, invitations were sent to the motor industry for proposals for the founding of the project. There were many takers and one major motor company is reputed to have offered to put in R200-million — if their chairman could be on the board and they held the controlling interest. So far ADE has resisted the offer of capital and is using its own South African financial resources.

Two partners, Perkins, of Britain, and Daimler-Benz, of West Germany, were chosen to assist in the manufacture of the diesel engines. Perkins is particularly strong in the tractor engine market and DB, which makes the world famous Mercedes-Benz cars and trucks, is a leader in the heavy truck field and South Africa's No 1 supplier by far.

Both Perkins and DB will have facilities at ADE and about 50-60 experts will come from England and West Germany to assist in the Anglo-German co-operation and supervise the local workers, some of whom are already being trained overseas.

STO13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

15016 B.A./LL.B. YEAR : 1 15016

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL			
~~154230R~~	~~ADR~~	~~HANS-[illegible]~~	~~105105~~	~~LATIN ELEMENTARY~~			~~1~~	~~154230R~~
157795R	BARRETT	MICHAEL CONRAD	117101	POLITICAL SCIENCE I	UP	(59)	1	157795R
~~153562Q~~	~~BUCHINSKY~~	~~GLENN [illegible]~~	~~[illegible]~~	~~AFRIKAANS~~	~~UP~~	~~(50)~~	~~1~~	~~153562Q~~
156591X	COHEN	PETER DAVID	117101	POLITICAL SCIENCE I	UP	(57)	1	156581X
~~155002E~~	~~[illegible]~~	~~[illegible]~~	~~105105~~	~~LATIN ELEMENTARY~~	~~ABS~~		~~1~~	~~155002E~~
157655G	DE KOCK	RODNEY JAMES	105105	LATIN ELEMENTARY	UP	(56)	1	157655G
~~154345[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~117101~~	~~POLITICAL SCIENCE I~~	~~UP~~	~~(59)~~	~~1~~	~~154[illegible]~~
155823Y	FISHER	MICHAEL ALEX	[illegible]		F			

engines and all SA-made trucks will be powered by ADE engines.

But this is no real problem, according to Mr Koos de Wet. He says the plant will produce two, three, four, five, six, eight and 12-cylinder engines with cubic capacities ranging from 2,5 ℓ to 22 ℓ and with horsepower ratings from 36 kW to a massive 386 kW. They will be able to power all types of trucks and tractors and some will be for stationary use in agriculture.

One of the engines will be an advanced version of a turbo-charged, six in-line Mercedes-Benz Model OM 407 which should be ideal for long-haul operators. It delivers 236 kW.

The cost of producing local content diesel engines will push the price up by about 10 percent but the availability of spares and service will improve, according to ADE.

More important, as far as the country is concerned, is that it will save an estimated R260-million in foreign exchange by 1985.

Jobs — mostly for coloured workers in the Western Cape — will be created with an initial 1 650 needed to run ADE itself and another 2 500 in the allied component industry.

Another criticism that has been levelled at the Atlantis Diesel Engines is that the models chosen are 20 years old and thus "obsolete."

This is nonsense, according to Mr de Wet, who says the basic concept of internal engines has not changed in the past 50 years. The diesel engines to be made are the most modern available with the latest developments.

The only thing ADE will not be able to produce at this stage is the fuel injection systems which will have to be made overseas until such time as the volume will make it financially feasible to establish such a plant locally.

Much comment from motor industry

Much comment has already come from the motor industry about ADE. Mr Brian O'Connor Wegner, marketing director of Datsun-Nissan SA one of the country's leading truck suppliers, says the competitiveness in the local commercial market will disappear.

The new product will be an "Atlantis" engine rather than a Mercedes or Perkins.

"There will be rationalization throughout the trucking industry. The only difference between trucks will be in the non-engine areas such as chassis and gearboxes.

"Of greater significance is the dealer network, the availability of parts and the quality of serivce all of which will be a prime consideration when the buyer makes his choice."

Fuel price too high

(55) 20/3/80

From Dr C J ROUX (Caledon):

"OIL costs in South Africa are actually the lowest in the world until it comes to distillates, when, thanks to government tax, they are the most expensive in the world."

I quote from the Cape Times (March 1). It cannot be disputed that the price of fuel is the biggest single factor affecting the cost of living and therefore of a rampant inflation. A rise in transport costs is unavoidably reflected throughout the entire economy.

If it is the honest intention of the minister of finance to allow ALL our people to share in the benefits of the gold bonanza, reduction in the cost of transport is, I believe, the most realistic way of achieving this. Any fear of an increase in fuel consumption can surely be overcome by the introduction of rationing to replace the present system, which is discriminatory anyway as it affects the masses far more than it does the more affluent.

'Full tanks'

"There are full tanks everywhere, consumption has declined, and even the Arabs are concerned by the falling demand for their products. This should lead to a reduction in costs." Again I quote from the same article.

Unfortunately the golden rule of supply and demand applies no longer in South Africa. In fact the very reverse holds as our government attempts to dispose of surpluses by price increases to be borne by the long-suffering consumer.

It is to me incomprehensible that the price of fertilizer (controlled by the government) should be raised by a further 17 percent when one fertilizer company alone *increased* its profits by 760 percent in one year. Something has to be amiss somewhere.

Instead of squandering vast amounts of money on unattainable ideological pipe-dreams attention to the everyday needs of our people is long overdue. To entertain any hopes of this happening under Nationalist rule is probably an indulgence in pipe-dreams on my part.

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

17000 BACHELOR OF ARTS (HONOURS) YEAR : N/A 17000

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL		
~~101795X~~	~~[illegible]~~	~~SHEILA JOSEPHINE HOWARD~~	~~105703~~	~~LATIN HONOURS~~	~~2+~~	~~(70)~~	~~4~~ ~~101795X~~
1207760	RUBIN	VIVIENNE	109701	HEBREW HONOURS	3		4 1207760

* TOTAL NUMBER OF STUDENTS 2

DEAN

REGISTRAR (ACADEMIC)

UCT

supply and demand." And Venezuelan President Luis Herrera Campino claims that his country, in consultation with other Opec members, will shortly announce further measures to defend oil prices.

Petroleum Intelligence Weekly notes that spot prices for key Opec crudes have already fallen this year by $3-$4 per barrel, while some African crudes, which commanded premiums of $15 a barrel at the end of last year, now bring less than $3 premiums over listed prices.

Spot market turnover has shown a concurrent decline — from some 3m barrels a day in the last nine months of 1979 — to only 700 000 barrels a day in the first quarter of 1980. Heavy Middle East crudes have been a particular soft spot. (It's possible that this feature is connected with a particularly mild winter in the US, which has softened demand for heating oil very markedly.)

A major factor that prevents a further decline in spot prices, observes *Petroleum Intelligence Weekly*, is that crude oil supplies are being distributed unevenly, because companies in possession of oil supplies are not willing to share them with competitors. But, cautions the *Weekly*, a complete price collapse on the spot market is not likely in the immediate future.

A much more pessimistic view is expressed by other oil industry sources, though. They hold that Opec members will prove able to cut production sufficiently to ensure that the present modest glut of oil will not last long and that listed prices will not ease. According to these sources, total production by the 13 Opec members declined in January by more than 1m barrels a day, while indications from Iran alone show that there must have been a further drop in February.

The threat still exists, moreover, that Saudi Arabia could decide to stop producing the extra 1m barrels a day (taking total output to 9,5m) which have been forthcoming since last year purely as a favour to the US. Saudi Oil Minister Ahmed Zaki Yamani said last week that his government would soon decide whether to maintain this additional output after April 1.

London brokers Grieveson, Grant & Co consider that the current balance between supply and demand is a tight one, and that by mid-1980 price pressures will be building up again. They foresee average Opec production for 1980 at 1,6m-2m barrels a day down on the 1979 figure of around 30,5m barrels, while (according to the US Department of Energy) demand for Opec oil is likely to be around 29m barrels a day.

There are, however, uncertainties clouding all these forecasts, with particular obscurity surrounding Iranian production statistics. Iran has said it aims to produce 3m-3,5m barrels a day, whereas official figures have recently set output at only 2,7m. Diplomats, on the other hand, have put the figure as low as 2m, and Oil Minister Ali Akber Moinfar has acknowledged that, in the last Iranian month, exports were only 1,7m.

Significant comment on the current world financial situation, as it particularly affects Opec, came from Kuwaiti Finance Minister Abdel-Rahman Al-Atiqi. He said recently that oil producers and consumers would both benefit from President Carter's anti-inflation package if the measures were aimed at limiting oil consumption. This comment indicates continued Opec concern about the stability of its foreign investments, a key consideration in the current drive to cut output (*FM* December 14 1979). And the continued financial ability of discretionary producers, like Saudi Arabia, to meet any plausible drop in oil demand with drastic cuts in output, should not be doubted.

WORLD OIL

Unkindest cuts

FM 21/3/80 55

A steadily declining demand in the oil-importing countries is challenging Opec's capability to sustain prices through matching cuts in output (*FM* February 29). But prospects for world oil prices nevertheless remain extremely uncertain.

The authoritative *Petroleum Intelligence Weekly* contends, for example, that spot oil prices are expected to continue their slide despite production cutbacks planned by Libya and Kuwait. The total cut of 850 000 barrels a day intended by these two Opec members will (according to industry sources) not halt the price decline, because of heavy inventories in consuming countries.

In support of this line, the Venezuelan Mines and Energy Ministry predicts a world oil surplus of as much as 3m barrels a day during the second quarter of 1980. Demand will fall by 5m barrels a day because of conservation measures and the slowing down of economic growth in the industrialised countries. To aggravate matters, say the Venezuelans, oil inventories in the principal consuming areas now exceed 5 000m barrels. And non-Opec oil producers will contribute an additional 300 000 barrels a day. These countries include such expanding producers as Mexico and the UK.

Venezuela has already announced a cut in its own output of close to 10% — from 2,2m barrels a day to around 2m, "in order to create a closer balance between

Koeberg loss for M&R

56

RDM 21/3/86.

Financial Reporter

LOSSES sustained on work for the Koeberg Power Station held back profit growth by Murray & Roberts, the building group, for the six months to December last.

Net attributable profit was up, however, from R7 316 000 in the 1978 equivalent to R8 451 000.

An unchanged interim dividend of 8c has been declared. Earnings a share rose from 35c to 41c.

The directors say the results for the full year will show a satisfactory growth and they plan to increase the total dividend by about 15%.

Last year a 21,5c final was paid for a total of 29,5c, so a final of 26c for a total of 34c seems likely for the year to June 30.

The directors say: "The results for the interim period have been adversely affected by a loss sustained on the contract for the supply and erection of structural steel at the Koeberg nuclear power station."

They say further that, as anticipated in the annual report, the effective tax rate will be higher this year because of a rundown in investment allowances.

But they are confident that the overall results for the year will show a satisfactory growth.

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

13010 BACHELOR OF ARTS YEAR : 1

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL			
~~1620048~~	~~BURNE~~	~~SUZANNE ELIZABETH~~	~~106103~~	~~ECONOMICS IA~~	~~F~~	~~(43)~~		
158955C	CARO	SALLY-ANN	107101	ENGLISH I (PRE-1980)	F	(40)		
			115120	DRAMA I	2-	(60)		
			~~114101~~	~~CULTURAL HISTORY OF W.E. I~~	~~3~~	~~(56)~~		
162195Z	CHAIT	CHERYL	102101	AFRIKAANS	UP	(50)		
~~153945D~~	~~CLARKE~~	~~PENELOPE JILL~~	~~103202~~	~~SOCIAL ANTHROPOLOGY I(PRE~~	~~1UP~~	~~(50)~~		
157789K	COHEN	DAVID	104101	ARCHAEOLOGY I	2-	(62)		
			110101	HISTORY I	F	(23)		
156503M	COLLIER	LINDSEY JEANNE	911101	MATHEMATICS I M102	UP	(69)		
			915103	ANIMAL BIOLOGY (HALF COURSE	UP	(54)		
~~153999D~~	~~COLLINS~~	~~BEVERLEY RUYNON~~	~~115120~~	~~DRAMA I~~	~~F~~			
153621E	COUCHER	ROBERT GEORGE RENESON	004101	PSYCHOLOGY I	UP	(56)		
~~138572X~~	~~COURTENAY~~	~~COLETTE~~	~~107101~~	~~ENGLISH I (PRE-1980)~~	~~3++~~			
153796V	DAVIS	CASSANDRA ELAINE	107101	ENGLISH I (PRE-19				
~~140457W~~	~~DELAHUNTY~~	~~ANNA TERESA~~	~~904101~~	~~GEOGRAPHY I~~				
162384E	DOMAN	MICHAEL EDWARD	105102	ECONOMIC HISTORY				
~~155931D~~	~~DU PLESSIS~~	~~MARCIA ELIZABETH~~	~~107101~~	~~ENGLISH I (PRE-19~~				
156919N	DUNCAN	ANDREW SYMON	003101	SOCIOLOGY I				
			004101	PSYCHOLOGY I				
156415R	ERASMUS	ARNO JACQUES ERASMUS	601101	COMMERCIAL LAW A				
			910105	STATISTICS IC(HAL				
~~162310Z~~	~~EVANS~~	~~GAVIN MARK READ~~	~~101103~~	~~AFR LANG INTENSI~~				
161480X	FAFAK	GIULIETTA	107101	ENGLISH I (PRE-1'				
~~153363T~~	~~FARQUHAR~~	~~GILLIAN DEBORAH~~	~~115101~~	~~FRENCH I~~				
152866J	FARRELL	MICHAEL BRUCE	004101	PSYCHOLOGY I	UP	(55)	1	
~~157359T~~	~~FINLAY~~	~~PAMELA JOAN~~	~~106104~~	~~ECONOMICS I~~	~~UP~~	~~(52)~~	1	~~157359T~~
			115102	FRENCH INTENSIVE	UP	(58)		
			115103	ITALIAN INTENSIVE	UP	(54)		
~~159744K~~	~~FIORAVANTI~~	~~LUIGINA~~	~~914102~~	~~PHYSICS I~~	~~UP~~	~~(53)~~	1	~~159744K~~

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80

13010 BACHELOR OF ARTS YEAR : 1

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION				
~~162004R~~	~~BURNE~~	~~SUZANNE ELIZABETH~~	~~106103~~	~~ECONOMICS IA~~				
158955C	CARO	SALLY-ANN	107101	ENGLISH I (PRE-1980)				
			116120	DRAMA I				
			~~114101~~	~~CULTURAL HISTORY OF W.E.~~				
162195Z	CHAIT	CHERYL	102101	AFRIKAANS				
~~153965D~~	~~CLARKE~~	~~PENELOPE JILL~~	~~103202~~	~~SOCIAL ANTHROPOLOGY I(PRE~~				
157789K	COHEN	DAVID	104101	ARCHAEOLOGY I				
			110101	HISTORY I				
156503M	COLLIER	LINDSEY JEANNE	911101	MATHEMATICS I M102				
			916103	ANIMAL BIOLOGY (HALF COURS				
~~153999D~~	~~COLLINS~~	~~BEVERLEY RUYNON~~	~~116120~~	~~DRAMA I~~				
153621E	COUCHER	ROBERT GEORGE RENESON	004101	PSYCHOLOGY I				
~~138572X~~	~~COURTENAY~~	~~COLETTE~~	~~107101~~	~~ENGLISH I (PRE-1980)~~				
153796V	DAVIS	CASSANDRA ELAINE	107101	ENGLISH I (PRE-1980)				
~~140457N~~	~~DELAHUNTY~~	~~ANNA TERESE~~	~~904101~~	~~GEOGRAPHY I~~				
162364E	DOMAN	MICHAEL EDWARD	106102	ECONOMIC HISTORY I				
~~155931D~~	~~DU PLESSIS~~	~~MARCIA ELIZABETH~~	~~107101~~	~~ENGLISH I (PRE-1980)~~	~~3~~	~~(57)~~	~~1~~	~~155931D~~
158919N	DUNCAN	ANDREW SYMON	003101	SOCIOLOGY I	F	(49)	7	158919N
			004101	PSYCHOLOGY I	F	(49)		
156415R	ERASMUS	ARNO JACQUES ERASMUS	601101	COMMERCIAL LAW A	F	(35)	1	156415R
			910106	STATISTICS IC(HALF CRSE)	F	(48)		
~~162310Z~~	~~EVANS~~	~~GAVIN MARK READ~~	~~101103~~	~~AFR LANG INTENSIVE (XHOSA)~~	~~3~~	~~(57)~~	~~1~~	~~162310Z~~
161480X	FAFAK	GIULIETTA	107101	ENGLISH I (PRE-1980)	3NX		1	161480X
~~153863T~~	~~FARQUHAR~~	~~GILLIAN DEBORAH~~	~~115101~~	~~FRENCH I~~	~~UP~~	~~(57)~~	~~1~~	~~153863T~~
152866J	FARRELL	MICHAEL BRUCE	004101	PSYCHOLOGY I	UP	(55)	1	152866J
~~157359T~~	~~FINLAY~~	~~PAMELA JOAN~~	~~106104~~	~~ECONOMICS IB~~	~~UP~~	~~(52)~~	~~1~~	~~157359T~~
			115102	FRENCH INTENSIVE	UP	(58)		
			115103	ITALIAN INTENSIVE	UP	(54)		
~~159744K~~	~~FIORAVANTI~~	~~LUIGINA~~	~~214102~~	~~PHYSICS IB~~	~~UP~~	~~(58)~~	~~1~~	~~159744K~~

UCT

Alcohol goes well with petrol — AA

55

RDM 22/3/80

By JEREMY BROOKS

THE Automobile Association, after a series of comprehensive tests, has given petrol/alcohol mixtures the thumbs up.

The tests, carried out under the direction of the AA's technical services executive, Mr Fred Bothma, showed that fuel consumption increased by only 1,7% in cars tuned to optimum efficiency.

The consumption in cars which were not tuned to optimum efficiency, with carbon monoxide levels of 8% or 9% — and this category includes more than half the vehicles on the Reef — actually showed a marginal improvement.

Mr Bothma said: "There was a slight difference in power output in vehicles tuned to optimum economy."

Mr Bothma said the results of the AA's tests should reassure motorists who were concerned that the lower energy value of the alcohol blend would increase consumption and harm performance.

Consumers face 15 pc power cost rise

By Lynda Lexter,
Municipal Reporter

In what appears to be a desperate bid to balance its June budget, the Johannesburg City Council is set to increase electricity tariffs by an average of 15 percent in July.

The housing and utilities committee held an emergency meeting late yesterday to consider the average 10 percent increase for domestic consumers and 18 percent for industry.

APPROVE

The chairman, Mr Wouter du Toit, said today the management committee still had to approve the increase before it went to council on Thursday.

But it is widely believed that the management committee has already approved the increases and that they are being rushed through because of serious problems in balancing the 1980/81 budget.

The new increases will mean that the average householder using 100 units of electricity a month will pay an extra R1,98 on a bill of R19,05.

○ Page 3: Cost of water to rise.

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

14149 B.A./?.80 YEAR : 4 14149

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL			
102531	BURROW	ROSEMARY KATHERINE	10210	AFRIKAANS	UP	(50)	4	102531X

DEAN

REGISTRAR (ACADEMIC)

* TOTAL NUMBER OF STUDENTS 1

UCT

CT. 24/3/80

Townships electricity: R1 m plan

55 77

By YAZEED FAKIER

THE CITY COUNCIL is to launch a R1 million electricity scheme later this year which will increase the supply of electricity to houses in Cape Flats townships and prevent the installation of illegal electrical connections.

The areas which will benefit are Factreton, parts of Bonteheuwel, Heideveld, Manenberg and Kalksteenfontein.

Mrs Eulalie Stott, chairman of the council's Housing Committee, told the Cape Times of the project at the weekend, although she added that it depended on whether or not the government allocated sufficient funds.

"But I am happy to say I have learnt unofficially that there is a very good chance that the necessary money will be forthcoming to begin work later this year," she said.

Mrs Stott said that in several housing estates the rental included an electricity and water charge because the houses when built were not separately metered. This was done to keep costs as low as possible.

"For the same reason, only electric lights were provided. But it very soon became evident that people wanted plugs in their houses and so thousands of illegal connections for stoves, fridges, irons, record-players and television sets were installed."

'Undesirable'

Mrs Stott said the council had realized how "undesirable" the situation was and some time ago asked officials to report on the cost of installing meters for each dwelling.

However, the officials recommended that not only meters, but also plugs should be provided in each house for the convenience of tenants and to avoid illegal connections.

The estimate for this undertaking was just under R1 m, Mrs Stott said.

"The work will begin later this year, provided the government allocates us sufficient funds."

Asked what the City Council intended doing about toilets and taps being situated outside houses, Mrs Stott said she was very conscious of how "undesirable" this was.

She was also aware of the inconvenience of sharing the facilities with up to three other families.

"Unfortunately, to alter the situation could cost a great deal of money and it is unlikely that the tenants with low incomes would be able to afford to pay rent adequate to cover the necessary improvement," Mrs Stott said.

UCT

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

12010 LOWER DIPLOMA IN LIBRARIANSHIP YEAR : 1 12010

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL	
~~140980P~~	~~HURING-UHLE~~	~~URSEL~~	~~118101~~	~~CULTURAL HISTORY OF W.E. I UP (50)~~	1	~~140980P~~
159075H	ELEERS	CHARLES PETER	118101	CULTURAL HISTORY OF W.E. I UP (50)	3	159075H

* TOTAL NUMBER OF STUDENTS 2

DEAN

REGISTRAR (ACADEMIC)

STAR 24/3/80

Sparks fly over R32-m Escom plan

While Escom plans to spend R32-million on expanding its multi-million-rand headquarters in Megawatt Park, consumers of its electricity are bracing themselves for further tariff increases in the next few months.

Escom's expansion programme has been roundly criticised by opposition politicians, consumer spokesmen and the public.

Mr C J "Boet" Uys, Escom's public relations officer, today denied the new building was an extravagance.

"It is a vital necessity. It is a utility building," he said.

The R32-million accounted for only 0,88 percent of Escom's total planned expenditure of R3 700-million in the next two years.

Asked why Escom was planning to spend millions in inflationary times and increasing electricity tariffs, Mr Uys said in reply:

- Tariffs had been increased 18 months ago and the average increase was 4,1 percent.
- Escom had kept its promise to keep tariff increases down.
- Relatively low increases were expected in the next few months. These would not be double-figure increases. (There had been double-figure increases in 1976, 1977 and 1978).
- Escom planned a massive development programme over the next 10 years, spending an estimated R11 000-million.

Mr Uys denied Escom's planning methods were not generally understood.

"A large number of people understand our longterm planning," he said.

In the past few years, Escom has been strongly criticised for building its prestige headquarters at a cost of R24-million and for increasing electricity tariffs.

Escom was last year attacked by the Board of Trade and Industries for making too much profit and seriously lacking effective planning and control structures in its management.

Escom has denied this.

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS

17000 BACHELOR OF ARTS (HONOURS) YEAR : N/A AS AT 29 02 80 PAGE 1 17000

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL	
~~1017950X~~	~~PERAIER~~	~~SHEILA JOSEPHINE HOWARD~~	~~105703~~	~~LATIN HONOURS~~	~~2+ (70) 4~~	~~1017950X~~
1207760	RUBIN	VIVIENNE	109701	HEBREW HONOURS	3 4	1207760

Economic Hist. Hons 1 80%

REGISTRAR (ACADEMIC)

UCT

A people mover that works

(55) RDM 25/3/80.

...the computer-operated Personal Rapid Transit system that is now ... a day between the University of West Virginia's two campuses

With the rising cost of fossil fuels, the search is on for alternative modes of transport. CHUCK DEBEVEC of UPI reports on the solution the University of West Virginia in Morgantown settled on.

THE Personal Rapid Transit system now carries 18 000 passengers a day to, around and between the University of West Virginia's two campuses.

The PRT cars look like small driverless vans with large windows and rubber tires. Operated by a computer at a control center, they move automatically along 14 km of elevated concrete guideway at about 32 km an hour.

The only noise is a loud hum from the cars electric engines. They shimmy slightly because they are not on a "fixed rail" system.

People do get involved in the operation of Personal Rapid Transit. Technicians monitor the cars by display board on which each car is represented by a light. If a car malfunctions, riders can contact the control center on an intercom.

The cars carry eight passengers seated and some standing. A sensor in the floor prevents the car from starting and a buzzer sounds if the number of riders exceeds a pre-set weight limit. Doors open and close automatically for boarding and departure.

There are five terminals, one in downtown Morgantown with the rest located around the WVU campuses.

Since July 1 when the system reopened after an expansion, more than a million kilometres have been logged by PRT.

"We all consider it a viable transportation system," says PRT Director Robert Bates. "We want to get away from the idea it is experimental."

When the R67-million system first started, Bates said, "it got bad publicity and that hurt us.

"But I feel this is one of the things in this state that is advanced technology. I think it is something people could be proud of.

"It will probably be the most advanced system for some years. When it was being planned it was thought it would be outdated in two or three years.

"Still, here we are five or seven years since they started and I think we are still the most advanced system in the world."

Bates said the computerized system was more reliable during the fall but "we are still having a few more problems than we would like".

The system averages about 10 breakdowns a week, each about seven minutes. Once in a while there is a 30-40 minute delay. The longest was 90 minutes when the system's computer jammed.

"When you tell someone caught out there for about 40 minutes that you are running 96% availability, he'll tell you the hell you are," Bates said. "As far as he is concerned, you are running zero."

The PRT fleet consists of 71 cars, approximately 50 of them in service at any one time, with the remainder undergoing maintenance.

"At first I thought that was high, but I understand that in bus fleets this runs about the same," Bates said.

The PRT is cheap to use — 20 cents a ride or R16,20 a term – but not to operate. The budget for 1979 was approximately R1,78-million. That will increase by about R150 000 for next year as schedules are extended.

The PRT was constructed almost entirely by federal funds, except for matching funds from the university in the form of land acquisition and rights-of-way.

However, the operating budget comes about equally from revenue — each WVU student pays a PRT fee — the state and federal sources.

Funding may be harder to come by in fiscal 1980. Both federal and state aid are in question.

Bates said the system makes for better utilization of classrooms on the two WVU campuses by giving the university the capability of shuffling students back and forth conveniently.

That alone could possibly save the university the cost of erecting another classroom building during the life of the system, he said.

Another benefit is the systems use as an academic tool. Although no classes are structured around the PRT, some two dozen graduate students have based their theses on it and classes take tours of it periodically.

Bates said there have been no serious accidents involving moving cars. Only a few riders have been slightly injured by closing doors and falling down steps in the stations. He said it is a much safer mode of transportation than the automobile.

The rising cost of oil also will make the system more economical. While some petroleum is used to melt snow from the guideways, the PRT's primary fuel source is electricity.

"The cost of operating an automobile a year ago was about 25 cents a mile. Now that figure is closer to 35 cents and it will go up," he said. "That, of course, puts us in a better light."

Dr Samy E G Elias, professor in the WVU School of Engineering and Benedum professor of transportation, started working on the PRT in the mid-1960s.

Ground was broken in 1971. After three years of testing, passenger service started in 1975.

Following an expansion completed last year, the system is now complete with the exception of a spur to the WVU Coliseum and engineering department buildings which has been blocked by environmentalists because it would have meant disturbing the University's arboretum.

JOHANNESBURG CITY COUNCIL

Sparks fly as council passes electricity rise

STAR 20/3/80

(53)

By Lynda Loxton, Municipal Reporter

Irresponsibility, ageing power plants and the next municipal elections were just some of the things blamed yesterday for the "shocking" 15 percent increase in electricity tariffs in Johannesburg from July.

Although roundly condemned by the Opposition, the increase which works out at 10 percent for householders and 18 percent for everyone else — was accepted by the NP/Independent coalition.

Mr Alan Gadd (PFP, Yeoville) said it was the highest single increase that citizens had had to bear in the history of Johannesburg. He accused the council of financial mismanagement in "suddenly" realising that it would need R19-million more to run the Electricity Department in 1980/81.

He doubted claims that the money would be needed to spend R5-million buying extra power from Escom, R3,5-million to place in reserve and R10,5-million to meet maintenance and salary bills.

Mr Winston Herzenberg (PFP, Braamfontein) accused the management committee of trying to create an "election fund" with which to subsidise rates over the next two years so that they would not have to be increased before the next municipal election.

Mr Max Neppe (PFP, Berea) said that while he agreed with the principle of subsidising the rate fund from electricity tariffs, increasing tariffs was not the only way to get more revenue for the department.

EMERGENCIES

Mr Wouter du Toit (NP), in his first speech in council as acting chairman of the housing and utilities committee, said the average age of equipment in Johannesburg's powerstations was 22 years and funds had to be kept in hand to meet with emergencies.

He said the increase in tariffs was necessary because of inflation, Escom increases, coal price and railway tariff increases, and salary increases for staff.

STU13-9

13110 PERFORMERS DIPLOMA IN SPEECH & DRAMA YEAR : 1

EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL		
135656C	~~BANTJES~~	~~EDUARD STEPHANUS~~	~~116120~~	~~DRAMA I~~	F	3	135656C
154249M	COMPION	MATTHYS CHRISTOFFEL	116120	DRAMA I	F	1	154249M
156762U	KRUSKAL	MEGAN	116120	DRAMA I	UP		
162343K	MILLER						

Opec to regulate output to price

(55)

RDM 26/3/80

LONDON. — The Organistion of Petroleum Exporting Countries has agreed in principle on a system whereby price levels will be maintained by production cuts during periods of temporary glut on the market.

This emerges from the text of a report by the Opec committee on long-term strategy which was completed in London last month. The recommendations, contained in it the nearest that the oil producers have come to adopting a production programme since an abortive experiment in the mid-1960s.

In the past Saudi Arabia has always opposed the principle of a production programme. It now apparently accepts the idea that some kind of coordinated measures should be taken to support prices at a basic minimum level decided on by members.

Proposals made by the committee over which Sheikh Ahmed Zaki Yamani, the Saudi Minister of Oil, presided will not be implemented before next year. They include regular price increases to take account of inflation, exchange rate fluctuations, and — to raise them in real terms — the growth rates of industrialised countries.

The strategy committee's report is to be submitted to an extraordinary Opec conference involving ministers of finance and foreign affairs, as well as chief delegates, provisionally scheduled to be held in Taif, Saudi Arabia, on May 5. Subsequently they are expected to be ratified by an Opec summit in Baghdad next October, marking the 20th anniversary of the oil producers' association.

The report recognises that an increasing imbalance between supply and demand will ensure a steady rise in prices in the future, but foresees periods of surplus when there will be downward pressure on prices. At such times it recommends that members respond by delaying production.

No system of apportioning cuts has been evolved. However, the committee believes that countries suffering from any shortfall should be assisted through a special arrangement of funds to provide compensatory financing.

It is suggested that this may take the form of oil-indexed bonds allowing the countries in financial need to get the revenue and defer production.

At the same time Opec says that production should be adjusted at times of shortage to prevent prices from going too high — with the risk of a consequent fall.

The basic strategy spelt out in the report is that prices should never fall below a basic floor and that in the long term they should be administered to rise gradually to approximate the cost of other sources of energy. No precise time frame for attaining the objective is given.

The best method towards fulfilling the aim is to relate increases in real terms to the growth in gross national product of members of the Organisation for Economic Cooperation and Development because the rate indicates their ability to absorb price increase and the tendency towards greater consumption.

It is proposed that the inflation index should take account of services as well as merchandise imports, and the domestic rates of inflation in Opec member countries. The exchange rate adjustments would be made on the basis of the 11 currencies included in the basket used in 1973 for a short period plus the dollar. — Financial Times.

No plan for Saudi oil cut

(55)

ADM 26/3/80.

LONDON. — Saudi Arabia's Petroleum Minister, Sheikh Ahmed Zaki Yamani, said yesterday his country planned no cutback in oil production for at least the next quarter.

But he warned that world oil resources were being depleted "at an alarming rate" and said only a worldwide programme of conservation and discovery of new energy resources could save it "from the edge of the abyss".

Sheik Yamani addressed 3 000 delegates at the annual convention of the Institute of Directors.

His statement coincided with a report in a Kuwaiti newspaper that Kuwait was cutting oil supplies to British Petroleum by two-thirds.

Sheik Yamani did not comment on this report. But he said nothing had happened to confirm persistent rumors that Saudi Arabia planned a drastic cutback in its own production.

"We shall continue, for the next quarter, our production of 9,5-million barrels," he said.

"But we can guarantee to continue this indefinitely only if we are satisfied we are getting a fair return on our investments abroad and help in developing our own alternative sources."

"It should be recognised," Sheik Yamani warned, "that oil, which is the most preferred source of energy in the world, is depleting at an alarming rate."

He said in the not very distant future world oil reserves might be exhausted entirely.

"Saudi Arabia," he said, "has so far been able to delay this abysmal prospect by using its own abundant production as a palliative to thwart shortages in world supplies."

Most observers believed this would not go on indefinitely.

Sheik Yamani called for "an elaborate program by world energy experts".

He said this should include a joint scheme "for a just and equitable distribution of world energy consumption and production for an extended period of time", and an immediate intensification by industrialised countries of searches for alternative energy sources.— UPI.

55

BBC joins in N-flash hunt

Arg 27/3/80.

London Bureau

LONDON. — The BBC is producing a television investigation into whether the flash of light recorded by a spy satellite on the night of September 22 last year was an atomic test — and if it was, if South Africa exploded it.

Reporter Tom Mangold and producer John Penycate are investigating what the BBC claims is "becoming one of the scientific mysteries of the year."

Discussing the programme, Mr Mangold said that at 10 o'clock on the night of September 22, an American spy satellite, wobbling slightly off course, recorded two flashes of light on its sensors.

"Within seconds, the information was transmitted to a United States Air Force base on earth.

"Within hours the President himself was told the news that there might have been a secret nuclear explosion during the night somewhere in the South Atlantic."

He said that for days the US suspected South Africa might have developed and detonated a low-yield nuclear bomb.

"But corroborative evidence was slow in coming in — until some radio astronomers in the eastern Carribean sifted idly through a computer print-out of what their telescopes had been looking at."

Questions posed by producer Penycate, include: "Just what did that spy satellite really see? Was it a bomb and if it was, whose was it? And why won't they admit it?

"And why, six month later, is there still no official word from President Carter's specially-created White House panel investigating the event?"

The programme, which describes this as a "strange scientific detective story", has been following the threads of evidence from South Africa, New Mexico, Washington and the Caribbean.

STU13-9 EXAMINATION RESULTS IN FACULTY ARTS AS AT 29 02 80 PAGE 1

17000 BACHELOR OF ARTS (HONOURS) YEAR : N/A 17000

STUD NO	SURNAME	FIRST NAMES	COURSE	DESCRIPTION	SYMBOL		
~~101795X~~	~~PERAIER~~	~~SHEILA JOSEPHINE HOWARD~~	~~105703~~	~~LATIN HONOURS~~	~~2+ (70)~~	~~4~~	~~101795X~~
120776D	RUBIN	VIVIENNE	109701	HEBREW HONOURS	3	4	120776D

* TOTAL NUMBER OF STUDENTS 2

DEAN

REGISTRAR (ACADEMIC)

(1) BRADFORD, H J ECONOMIC HIST. HONS 1 80%

UCT

The Star
Monday March 31 1980 55
CLASSIFIED ADVERTISEMENTS INSIDE

BRIEFING

The nuclear 'naughty boy

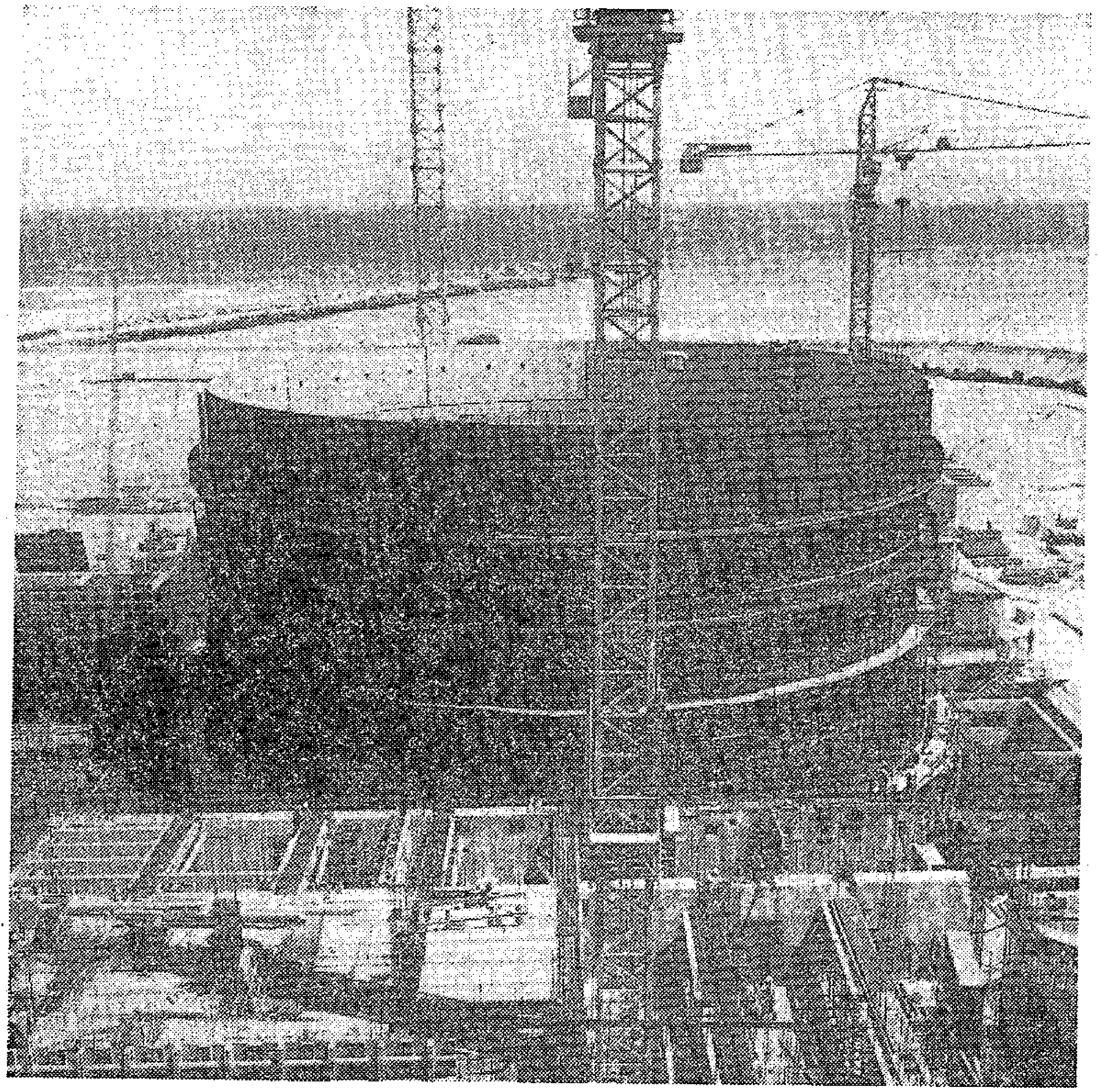
During the next two years, that formerly academic question — of whether South Africa should sign the Nuclear Non-proliferation Treaty — could become an issue that might reduce the Koeberg nuclear power station to a giant R2 000-million white elephant.

As the completion date of Koeberg comes nearer, South Africa — like India before her — will be under increasing pressure from the United States to put its signature to the treaty documents.

And when Pretoria refuses to, the punishment may come in the same form as it did in India: by America witholding enriched uranium supplies for Koeberg, so breaking an existing contract for such fuels.

Theoretically at least, this means that the vast structure of Koeberg will sit idly on the sands of Duynefontein, without fuel to burn.

South Africa is one of a number of countries unwilling to join such non-proliferation signatories as West Germany and Japan, but not for the same reasons.


KOEBERG ... could it become South Africa's most expensive, fuelless white elephant?

If South Africa does not openly renounce the making of atomic bombs by signing the Non-Proliferation Treaty it is likely to receive naughty-boy "punishment" from America. JAAP BOEKKOOI analyses the chances of the country's nuclear policy landing in heavy water.

Futile

India and Pakistan, for instance, regard the treaty as a Western-oriented club that aims to keep the supply of nuclear arms down — among themselves.

South Africa's main reason for not signing the treaty, despite the results to nuclear fuels supply, is not centred around the making of the atom bombs which, despite double flashes in the South Atlantic and strange structures in the Kalahari, is regarded as a fairly futile exercise.

The planners of Pelindaba, the Atomic Energy Board's HQ near Hartbeespoort Dam, are more concerned with another provision of the non-proliferation lobby: the regular inspections of a signatory country's nuclear installations.

Laudable

This in our case would mean the possibility one day of International Atomic Energy Agency inspectors nosing around Valindaba, the nuclear enrichment pilot plant, thereby increasing the possibility of leakage of process details to other countries.

A recent AEB publication, Chain Reaction, suggests clearly that South Africa is not ready to join the non-proliferationers on this point.

The book praises the NP Treaty as a "laudable move which all sane countries support in principle, but which regrettably embodies the possibility of the infringement of sovereignty and the retardation and inhibition of essential nuclear development."

Due to the strictures of the various Atomic Energy Acts, which virtually forbid discussion of the country's vital nuclear matters, the public thinks of the non-proliferation Treaty as posing a simple choice to this country — to be, or not to be, a nuclear power.

There is obviously more to it than that, in fact a network of ramifications. But at the same time any poll would probably show a national consensus on keeping the country's nuclear option open. And the only meaningful way, as any junior Pelindaba scientist can tell you, is to do this by continuously extending it.

Thrust

By not signing the treaty South Africa will avoid some of the pitfalls and international confusion which have marked the entire non-proliferation scene.

The whole thrust of the original American, and to a lesser degree, the Russian, non-proliferation policy was:

(a) To get every have-not country to enter into an irrevocable international commitment never to develop or obtain nuclear arms.

(b) To agree to the denial of facilities, also to NPT signatories, that would even allow them to build a potential for acquiring an atomic arsenal any time in the future.

The American Nuclear Non-Proliferation Act (NNPA) of 1978 passed after the Treaty, had these objects in mind, but some of the non-nuclear industrial countries of Europe who signed the NPT have already come to regret that they did not stay out of it like South Africa.

For the Act has underlined their fears by seeking to burden signatories with new curbs, on acquiring fast breeder reactors and reprocessing facilities for power production, for example.

Blind

The Act blissfully ignores the fact also that some signatories, such as West Germany and Japan, have all the knowledge and materials to build atom bombs without testing them, and that non-signatories such as Israel, and lately India and Pakistan, could do so as well.

The Americans themselves, as in human rights matters, take a great interest in the nuclear affairs of some countries, such as India and South Africa (where an ambassadorial aircraft was accused of taking aerial pictures of our nuclear enrichment facilities), but turn a blind eye to others, such as the proposed sale of a US-designed nuclear power plant by France to China.

That America intends to use its virtual monopoly of commercially-enriched uranium supplies as a punishment, or reward, is both clear and relevant to South Africa's Koeberg plans.

Stubborn

Germany and Japan, both non-proliferation signatories, are given the carrot: their US-built nuclear power plants have been given enough enriched uranium to last for five or seven years at a time.

India, a stubborn non-signatory, is punished. Its Tarapur power complex has only been getting its yearly uranium requirements after long delays and even direct consultations between its leaders and President Carter have produced only foot-dragging on the issue.

South Africa's answer to the treat of US nuclear punishment — breaking off the enriched uranium contract and cutting supplies — is twofold: to push our own uranium enrichment and to demonstrate that this country is in a different league from India, for instance.

The first part is already being pursued, for the Valindaba pilot plant is now being extended. Its primary object is to be able to meet South Africa's own requirements in the future.

The second point may be well taken in negotiations.

Washington is worried about a future Indian-Pakistani nuclear confrontation, for they are nations with 35 years of hostilities between them.

Switch

There could be no similar fears for South Africa which could find little practical use for an atom bomb if it had one, because of its conventional power and the type of bush warfare it is engaged in.

Instead of a nuc[...] bomb, this country, [...] a single turn of a swi[...] could plunge Mapu[...] whose only power co[...] from here, into darkn[...] And so it is with mos[...] Africa south of [...] Equator.

South Africa [...] therefore in a do[...] bargaining position [...] resist that pressure [...] sign on the dotted lin[...]

ENERGY

1 MAY 1980 ⟶ 31 AUGUST. 1980

Call for SA to refine oil for Africa

CT 1/5/80 55

By GORDON KLING
Industrial Reporter

THE chairman of Sasol, Mr D P de Villiers, yesterday urged the government and industry to co-operate in developing a role for South Africa as a refiner of crude oils for black Africa.

The appeal came amidst growing concern in local subsidiaries of the major oil companies, whose traditional role will be further eroded by substitutes for crude oil-based fuel from next year when Sasol II comes into full production.

Addressing the South African Institute of Civil Engineers in the city yesterday, Mr De Villiers said that the capacity of the country's crude oil refineries had been in excess of product demand even before the decision had been taken to build Sasol II. This capacity was sufficient to meet 55 percent of the present needs of the rest of Africa, excluding the Mediterranean countries and Nigeria.

"It stands to reason that the spare capacity in these South African refineries will increase with the growth of indigenous fuel production. If we add to this the fact that oil prices anywhere in the world are still made up of the starting price in the Persian Gulf, plus sea freight around Africa, it must be realized that these refineries in the years to come will be able to refine crude oil which any consumer country might wish to bring into South Africa on a most competitive basis."

Mr De Villiers suggested that the owners of South African refineries and various government departments should co-operate for the purpose of reviewing import duties, harbour and transport charges to create an "unassailable position" for the country as a refiner of crude oils for smaller African countries.

RDM 1/5/80

55 (185)

Soweto electricity work gathers pace

By SIMON WILLSON
Industrial Reporter

THE R153-million programme to electrify Soweto will gain further impetus this month with the passing of the closing dates for two more tenders for projects in the programme.

The first tender, for 101 panels of 11 KV switchgear, will close on May 14. Tender documents will be issued today for another contract to supply 132 KV switchgear, 132 KV substation buildings, earthworks for the substation sites, civil work on substation structures, KW/hour meters and 11 KV switchgear, with a May 30 deadline.

Officials of the Ecoplan consortium, the umbrella organisation designing and supervising the programme, say the work is on schedule and power lines and substations should be complete by the end of 1981.

The Ecoplan consortium comprises four companies: G H Marais & Partners Incorporated, which is handling the electrical engineering; Walter Roux & Partners and De Leuw, Cather & Associates Incorporated, which are doing the civil engineering; and Abramowitz, Sachs, Moss, Sack, Feldman & Associates Incorporated, the town planners and architects.

A spokesman for Ecoplan says the consortium is, where possible, exceeding by a big margin the minimum statutory tendering time of 14 days, and in the case of the tenders issued today is allowing potential contractors a full month.

He said contractors had not raised queries about the required completion dates, most of them set for the end of next year. He said if any contractors did anticipate delays, the extra time would be incorporated into the contracts.

"Another method we propose to use to keep the programme as speedy as possible is to share contracts among the lowest bidders if one contractor cannot meet the required deadline alone."

Contractors had encountered no problems with the tenders allocated in the programme since last year, he said.

The cost of the cable-laying and substation construction is estimated at between R20-million and R30-million.

Contractors are expanding the capacity of the existing power supply system, which frequently suffers from overloading.

The capacity expansion is designed initially to supply 20 000 homes with electricity at a cost of R2 500 000.

The electrification programme is part of a larger R605-million master plan intended to give Soweto new housing, recreational and business areas.

'Peace energy' has potential

55

RDM 1/5/80.

CAPE TOWN. — The most fruitful energy co-operation between African states could be in oil refining, the chairman of Sasol and Soekor, Dr D P de Villiers, said in Cape Town last night.

He told a meeting of the Western Cape branch of the SA Institute of Civil Engineers that in the African economic scene there was room for "energy for peace".

"As engineers, you would know . . . to what extent electrical transmission systems are already crossing African borders."

The cost of oil refineries had escalated beyond reason since 1975, he said, and with the uncertainty of future oil supplies, the building of a new refinery was a risky decision.

Even before the Sasol II decision was taken, the capacity of oil refineries in South Africa had been in excess of demand.

The total capacities of the South African crude oil refineries was 55% of the present needs of the rest of Africa, excluding Mediterranean countries and Nigeria.

It stood to reason that the spare capacity of the refineries would increase with the growth of indigenous fuel production.

"If we add to this that oil prices anywhere in the world are still made up of the starting price in the Persian Gulf, plus sea freight round Africa, it must be realised that in the years to come these refineries will be able to refine crude oil which any consumer country might wish to bring into South Africa, on a most competitive basis.

"I would suggest that co-operation between owners of South African refineries and various Government departments, for the purpose of reviewing import duties, harbour and transport charges, could develop for South Africa an unassailable position as a refiner of crude oils for smaller African countries.

"The new department in charge of energy matters — a laudable development — could well tackle this task as a matter of priority," said Dr De Villiers. — Sapa.

BORLAND*LIST

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767:S VOCABULARY PHONETIC
768:A VAN SPAANDONCK, MARCEL
769:D 1967
770:T MORFOTONOLOGISCHE ANALYSE IN BANTUTALEN. IDENTIFICATIE V
771: BESCHRIJVING VAN HUN TONOLOGISCHE REPRESENTATIES.
772:P AKADEMISCH PROEFSCHRIFT RIJKSUNIVERSITEIT DE GENT. (WITH
773: 204P.
774:C K-M CT 7/1971 331 : DESCRIPTIVE COMPARATIVE ANALYSIS OF
775: F VARIOUS BANTU LANGUAGES FROM THE WESTERN AND EASTERN Z
776: ER ALIS. EXAMPLES FROM SHONA AND XHOSA.
777:L 1000
778:S TONOLOGY
779:A VON WINKELMANN, FRANZ
780:D 1788-9

STAR 1/8/80

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260

183

'Energy is for peace'

CAPE TOWN — The most fruitful future co-operation of energy between African states could well be in the field of oil refining, the chairman of Sasol and Soekor, Dr D P de Villiers, said in a speech here.

He told a meeting of the Western Cape branch of the SA Institute of Civil Engineers that in the African economic scene there was room for "energy for peace."

"As engineers you would know better than I do to what extent electrical transmission systems are already crossing the borders of African states."

Dr de Villiers said the capital cost of oil refineries had escalated "beyond all reason" since 1975, and with the uncertainty of future oil supplies the erection of a new refinery called for a "very risky" decision.

The capacity of oil refineries in South Africa was in excess of demand even before the Sasol Two decision had been taken.

The relatively small petroleum consumption of various African countries would also make it well nigh impossible to embark on the building of new refineries. At the same time, increase in petroleum consumpion was a sine qua non for those under-developed countries.

The total capacities of the South African crude-oil refineries was 55 percent of the present needs of the rest of Africa, excluding the Mediterranean countries and Nigeria.

It stood to reason that the spare capacity in those South African refineries would increase with the growth of indigenous fuel production.

"If we add to this the fact that oil prices anywhere in the world are still made up of the starting price in the Persian Gulf plus sea freight around Africa, it must be realised that these refineries in the years to come will be able to refine crude-oil which any consumer country might wish to bring into South Africa on a most competitive basis.

"I would suggest that co-operation between owners of South African refineries and various Government departments for the purpose of reviewing import duties, harbour and transport charges could develop for South Africa an unassailable position as a refiner of crude-oils for smaller African countries.

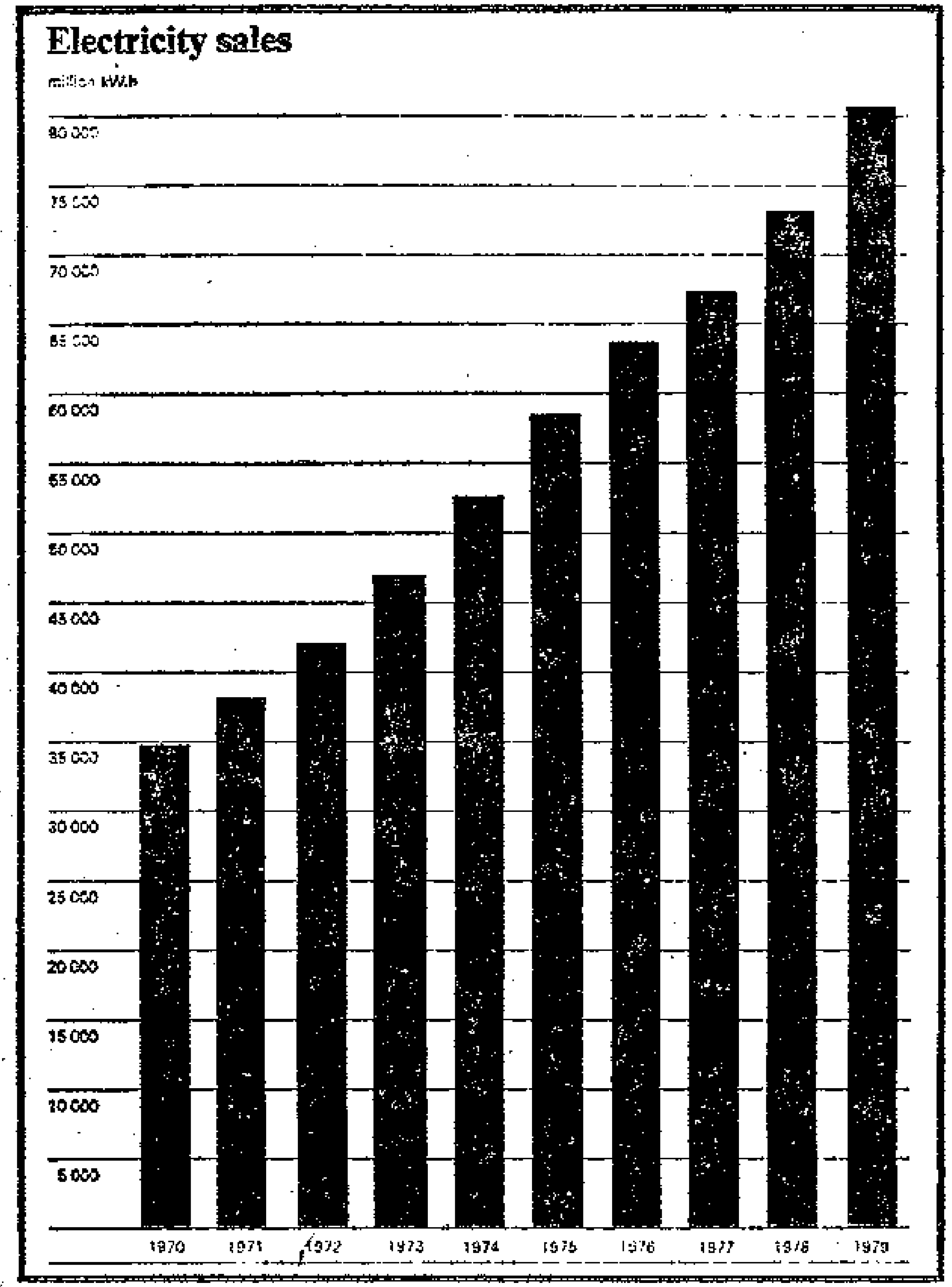
"The new department in charge of energy matters — a very laudable development — could well tackle this task as a matter of priority," Dr de Villiers said. — Sapa.

80s challenge to Escom

STAR 7/5/80 (55) (~~260~~)

By Stephen Suckley

One of the highest growth rates in electricity sales in 30 years was recorded by Escom in 1979, aided by the upswing in the economy. Escom has been able to cope with higher-than-expected demand for electricity but the 1980s will pose even greater demands. Escom is confident it will be able to meet the challenge without burdening the consumer.



A broader-based demand for electricity last year pushed kilowatt-hours of electricity sold to 80 583m kWh, reflecting an increase of 10,7 percent over the 72 780 kWh achieved in 1978.

According to Escom's chairman, Dr R L Straszacker, commenting in the annual report, the increase in demand is a clear indication that the economy has expanded and that the upswing has not been restricted to any one area.

CHANGES

But, despite the impressive sales increase which has only been bettered five times in the past 30 years, revenue received by Escom last year was down on the 1978 figure.

There is no doubt that Escom has realised that it has to make great strides if it is to supply the growing demand for electricity in the current decade.

Perhaps this did take some nudging by the Board of Trade and Industries' investigation into tariff and structure policies, but the Commission has already acted on some of the proposals and more complex changes should be completed by early 1981.

CAPACITY

The Commission's ability to cope during 1978 and 1979 when electricity demand was higher than expected, meant that the then infant and mild upswing in the economy was not suppressed.

But what of the 1980s?

Certainly, demand for electricity will accelerate as a wider cross-section of the economy moves away from oil-based power. It is not a period when Escom can afford to rest on its laurels.

To double its present capacity by the end of this decade, about R11 000m will have to be spent. Reassuring words from Dr Straszacker are that he does not foresee extra burdens being placed on the consumer.

This stems from the Commission's efforts to become financially more independent of short-term economic and political influences.

HIGHLIGHTS

Gaining financial independence meant that the consumer was subjected to a series of tariff increases in past years that were higher than the rate of inflation.

Tariff adjustments for 1980 have been an average 7,3 percent which is well below the rate of inflation.

Some highlights of 1979:

- The Commission supplied 93,3 percent of electricity sent out in South Africa;
- Total coal burnt in Escom power stations amounted to 43,3m tons;
- Overhead cable of direct and alternating nature stretched 110 860 km — more than twice round the world.

UCT

DD 1/5/80 (55)

SA role in oil refining

CAPE TOWN — Sasol's chairman, Mr D. P. de Villiers, yesterday urged the government and industry to co-operate in developing a role for South Africa as a refiner of crude oils for black Africa.

Addressing the South African Institute of Civil Engineers here yesterday, Mr De Villiers said the capacity of the country's crude oil refineries was in excess of product demand even before the decision had been taken to build Sasol Two.

This capacity was sufficient to meet 55 per cent of the present needs of the rest of Africa, excluding the Mediterranean countries and Nigeria, he said.

Mr De Villiers suggested that the owners of South African refineries and various government departments should co-operate to create an "unasailable position" for the country as a refiner of crude oils for smaller African countries. — DDC.

ARGUS 1/5/80

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Fifth worker killed at Koeberg

A BUILDING worker was killed when he fell 30 m at Koeberg nuclear power station yesterday — the fifth accidental death on the site in the past 12 months.

He was Mr F H Swart, 28, of Blouberg Heights Flats, Bloubergstrand.

A police spokesman said Mr Swart slipped and fell while walking on the ridge of the nuclear reactor.

He is survived by his wife, Esther and a three-year-old daughter, Eve.

SHAFT

On March 27, Mr Mustapha Arendse, 28, of Reform Street, Cape Town, was killed when he fell down a shaft.

On May 22, Mr Norman Mpongo, of the Koeberg labour compound, and Mr A Fortuin of Ribbok Street, New Orleans, Paarl, fell 40 m to their deaths. Mr M H Simonile, 27, of the Koeberg labour compound, died when a scaffolding jack fell on his head.

ALTERNATIVE FUEL 1

Vat 93

FM 2/5/80 (36)

Purchasers of high-octane petrol on the Witwatersrand will soon be getting a blend containing a significant percentage of ethyl alcohol (ethanol).

The alcohol will be supplied by Sasol, as a by-product of its synthetic process, and will probably be blended into all brands of high-octane petrol.

Possibly up to 12% by volume of ethanol will be added.

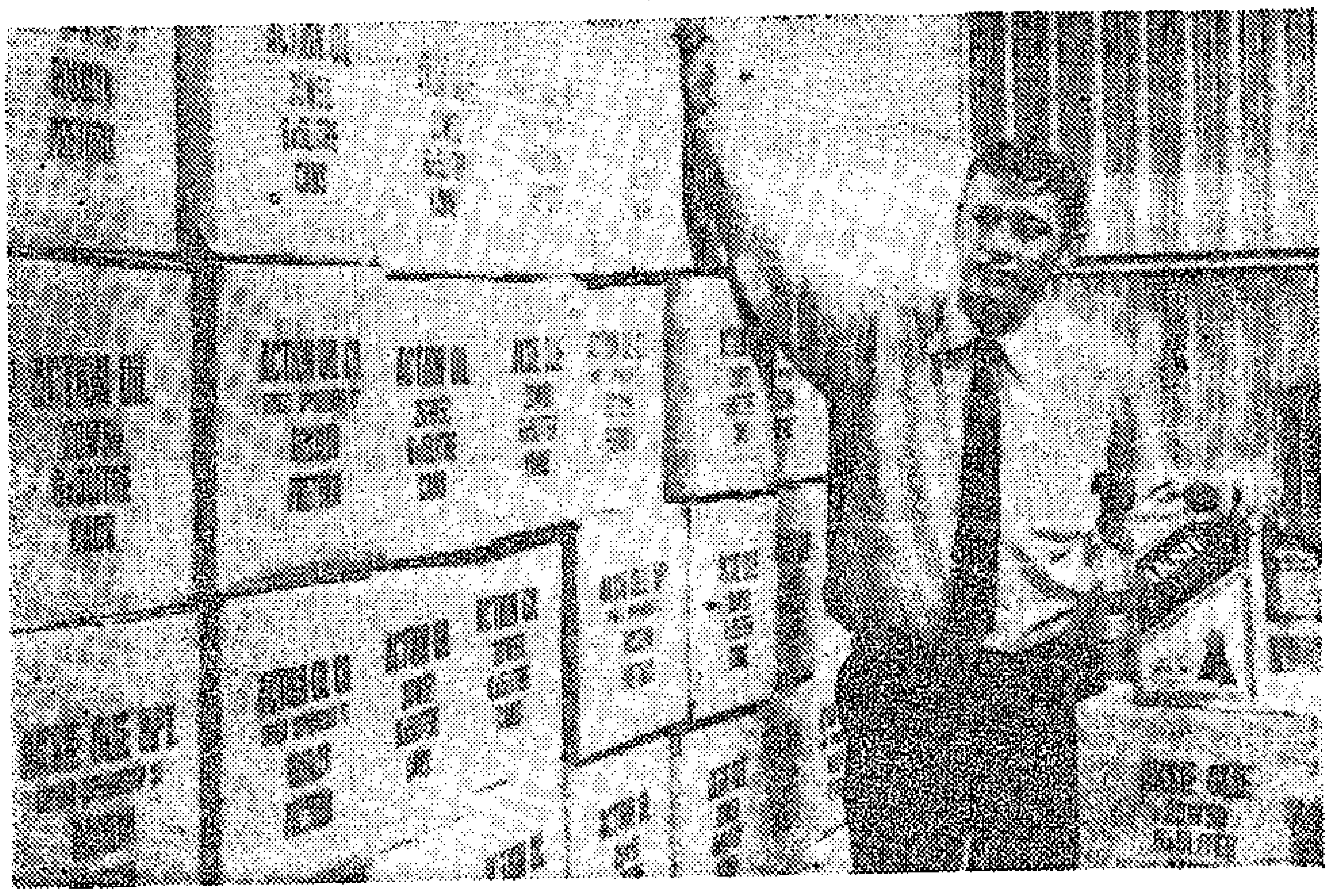
Sasol's petrol synthesis produces substantial quantities of ethyl alcohol, which is also of importance as a chemical feedstock. The trouble at the moment is that local chemical industry simply cannot absorb the greatly expanded ethyl alcohol production from Sasol II, so something else has to be done with the surplus.

There are a few implications of blending significant quantities of ethanol with petrol. Firstly, the effect on octane rating is good, because ethanol itself has a high octane rating. So, the addition of significant quantities of ethanol will permit a reduction in the amount of lead-containing anti-knock compounds presently incorporated into high octane petrol, without any change in octane rating.

Although ethanol carries less energy per litre than does the group of substances normally constituting petrol, a recent series of tests by the AA has shown that the effects of ethanol blending (10% by volume) on fuel economy are variable. Fred Bothma, AA Technical Services Director, explains that the state of tuning of an engine determines whether the addition of ethanol is beneficial or detrimental to fuel consumption. This result follows from the fact that ethanol, an oxygen-containing substance, has a "leaning" effect — it slows down the rate of flame propagation. In the case of the majority of engines (say 80% to 90%) running "too rich" (that is, with a badly tuned carburettor and too much petrol per unit of air), the effect is to bring about a better balance between fuel and oxygen, so that consumption improves by up to 1,5%. But, if an engine is well tuned, the mixture becomes too lean, and consumption will decline by 1,5% to 1,7%.

From the viewpoint of oil saving, the move has encouraging features. It suggests that it will not be difficult, in marketing and technical terms, to blend into petrol reasonable quantities of ethanol derived from crops like sugar cane or (eventually) cassava. Only if the amount of ethanol goes significantly higher than 12% will engine adjustments or modifications be required.

 (55)



Five-litre cans of Action oil ready to be distributed from the company's refinery at Rosslyn, Pretoria.

Used oil will help Defence Force fund

JOHANNESBURG — A national hypermarket chain has started a campaign to help the Government in its bid to save and recycle as much of South Africa's used lubricating oil as possible.

The campaign will also provide the Defence Force with an unusual fund-raising method.

The campaign will involve two distinct phases:

1. Setting up facilities to collect used oil at hypermarkets in Johannesburg, Bloemfontein, Cape Town, Port Elizabeth and Durban. For the first time the public will be paid to dump their used oil at these collection points. The payment will be 3c a litre.

2. One cent on every litre sold of a new brand of oil, Action Oil, to be reprocessed from the used oil, will be donated to the South African Army Fund, in that way giving the public the opportunity to provide a continuous source of income to the fund.

Mr I. Ferreria, marketing director of the hypermarket chain and co-founder of the concept, said: "Of the hundreds of millions of litres of lubricating oil sold in South Africa every year, only 12 per cent is currently being recycled. There is no reason why we should not emulate Germany, which recycles about 40 per cent of its used oil.

"With our new Action Oil concept, we are trying to tap South Africa's own oil well and save the country millions of rands in foreign currency."

He said that even allowing for the donation to the Army Fund, his chain would be marketing the new oil at a considerably lower price than many oils sold in South Africa.

One of the major removal organisations in South Africa, Elliot Afrovan in Pretoria, is successfully using the "new" Action Oil.

Mr Tom Ansley, managing director of Elliot-Afrovan, says the performance of the oil since using it in his R0,5 million fleet of heavy vehicles has been completely satisfactory.

Mr Ansley, whose company is involved in household removals throughout South Africa said the fact the SABS had approved the new oil and that he would be making a contribution to the Army Fund had prompted his decision to use it in his fleet of vehicles.

Another company using Action Oil is Brits Crushers. Most of their operations are at Thabazimbi where the temperature can rise to over 50C and plunge to below zero.

The company decided to use Action Oil exclusively a few months ago and expect to use about 60 000 litres at their Thabazimbi stone quarry during the first year of use.

A company spokesman said the oil had given excellent results in compressors, loaders, dumpers, drill rigs and machinery and no hydraulic problems had been encountered.

Action Oil had to undertake lubrication surveys to establish the requirements of Brits Crushers and the company is now using different grades of oil during winter and summer. A special kind of hydraulic oil was developed by Action for the quarry's front-end loaders.

The chairman of the Army Fund and Inspector-General of the Army, Gen R. F. Holtzhausen, said he welcomed the move to assist the army and the vast majority of South Africans who had relatives in the army.

"We have already acquired a large tract of land on the Buffelspoort Dam in the Magaliesberg range where we will build a rest and rehabilitation centre for our soldiers and their families," he said. "The funds derived from the long-term sales of Action Oil will be totally earmarked for this project".

The Army Fund was established in 1956 to help the State provide services and facilities to all Army members, irrespective of rank or place of service. — DDC

Using recycled Action Oil in an Elliot-Afrovan vehicle.

Oil will be recycled in Pretoria

JOHANNESBURG — Mr Dennis van Genderingen, chief executive of Action Oil, is confident his company has the capacity to handle the manufacturing of base oils and top quality lubricants from the thousands of litres of used oil expected to be collected at hypermarkets throughout South Africa.

He said his Rosslyn-based refinery had years of experience and technology in producing lubricants from used oil. "We can handle any volume that might come. The plant — one of the most modern refineries of its kind in the world — is ready to work 24 hours a day all week if necessary," he said.

He added that although Action Oil was only now being launched in five-litre containers, for some months it had already been successfully marketed in 210-litre and 20-litre format. "The five-litre containers are now bringing the SABS-approved product to the do-it-yourself motorist."

Action also has a full range of industrial and automotive lubricants already on the market. Mr Van Genderingen said South Africans were showing strong support for quality lubricants made from used oil as it was of strategic importance to South Africa's balance of payments.

In the past it was common practice for this oil to be discarded or burned off, but due to the present shortage of crude it had been proved that once this raw material had been processed through the refinery it could be considered as good if not better than imported virgin stock.

He said that although additives might wear out, only a small fraction of oil broke down or was burned in the engine. "The reason for an oil change is caused through its having accumulated contaminants such as fuel, carbon, metal, varnish and corrosive combustion products containing sulphur.

"After treatment, the additives and various other contaminants are separated from the base stock. This is then vacuum distilled to remove any traces of diesel, petrol or kerosene fuel and the result is base oils of exceptional high quality to which specified additive packs are added to formulate various kinds of quality lubricants," he said. — DDC.

5-5

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ALTERNATIVE FUEL 2

GM 2/5/80

Modifying methanol

AECI's research into additives that would enable the use of methanol in unmodified diesel engines is part of a long-term programme, says technical director Doug Wood. He emphasises that success in this endeavour is not assured and could take time and effort.

The problem with methanol is that it has a very low cetane number. This means that, unlike diesel fuel, it will not easily ignite in a high-compression engine. AECI hopes that reasonably cheap additives will be found to improve the undesirable combustion characteristics of methanol, so that this coal-derived fuel can be used to overcome the diesel fuel shortage.

Professor Richard Dutkiewicz of the Energy Research Institute of UCT has a different solution to the problem. He proposes the modification of existing diesel engines by the installation of spark plugs. Spark ignition makes it possible for diesel engines to burn pure methanol very effectively.

The limitations of this idea are the cost and man-hours required to modify the large existing stock of diesel engines, although the cost of newly-manufactured spark ignition "diesels" would compare reasonably with the cost of conventional diesels.

The prize to AECI for being first in the field with a successful methanol modifier would consequently be a big one. So its current reticence over the precise lines of research being pursued is easily understandable.

Oil: SA won't be caught napping again

55 RDM 2/5/80

THE ASSEMBLY. — South Africa would continue to adapt its energy policies to meet future demands and would not be caught napping as it had in 1973, the Minister of Industries, Commerce and Consumer Affairs, Dr Schalk Van der Merwe, said yesterday.

Introducing the Second Reading Debate on the State Oil Fund Amendment Bill — which was taken through all its stages with the support of all parties — Dr Van der Merwe said he was optimistic about South Africa's energy position towards the end of the decade.

"In this rapidly changing world and especially in the realm of energy, it is impossible to lay down blueprint measures and regulations and expect them to be absolutely effective for any length of time. This is why it has become necessary again to look at the provisions of the State Oil Fund.

"I want to give the assurance that the measure is not being introduced with the aim of possibly increasing the price of petroleum products," he said.

In terms of the Act, a levy can be placed on a specific petroleum product. But it cannot be varied according to the purpose for which the product is used.

For instance, a lower levy can now be placed on aviation fuel for overseas flights and for the use of paraffin for domestic purposes.

Provision is also made for oil companies to export refined petroleum products without being subject to the Equalisation Fund levy.

"This amendment has become necessary as Sasol II has already begun marketing its finished products.

"As Sasol II and later Sasol III products systematically enter the local market, the market share of the oil companies will steadily decrease with a corresponding unused local refining capacity as a result.

"If the oil companies are not allowed to neutralise this unused capacity by refining petroleum products for export purposes, the unit cost of their production for the local market will rise.

"Such a development will not be in the interests of the country."

The Minister pointed out that apart from the optimum use of their refining capacities, the export of completed products would be a valuable source of foreign exchange. — Sapa.

BORLAND*LIST

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1215:P UNIV. CC ... I. OF AFRICAN LANGUAGES,
1216:L SHONA
1217:S GRAMMAR
1218:W 496.375
1219:A FORTUNE,
1220:D 1969
1221:T SHONA GR ... .
1222:P DEPT. OF ... V. COLLEGE OF RHODESIA,
1223:C PART I : ... OPHONEMICS, 3. SUBSTANT
1224:L SHONA
1225:S GRAMMAR
1226:W NOT SAL
1227:A FORTUNE,
1228:D 1970
1229:T SOME SPEE
1230:P ALS 11 :
1231:L SHONA
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1234:D 197
1235:T SOM ... PHONIC CONSTRUCTIONS
1236:P AS
1237:L SHO
1238:S GRAM
1239:A HANN
1240:D 1959
1241:T STAN ... DICTIONARY,
1242:P LONDON, MACMILLAN, 825P,
1243:C CONTAINS A VERY BRIEF GRAMMATICAL SKETCH,
1244:L SHONA
1245:S GRAMMAR, DICTIONARY
1246:W A 496.3412-3 RHO
1247:A HANNAN, M.
1248:D 1965
1249:T LEARNING SHONA IN THE COMPUTER AGE.
1250:P NADA 9 : 2 : 3-5.
1251:L SHONA
1252:S GRAMMAR
1253:A HENY, FRANK
1254:D 1972
1255:T BANTU LEXICAL CLASSES AND SEMANTIC UNIVERSALS.
1256:P STUDIES IN AFRICAN LINGUISTICS 3 : 207-59,
1257:L SHONA
1258:S GRAMMAR
1259:A JACKSON, S.K.
1260:D 1955

Energy: SA won't be caught napping

THE ASSEMBLY — South Africa would continue to adapt its energy policies to meet future demands and would not be caught napping in respect of its energy requirements, as it had in 1973, the Minister of Industries, of Commerce and of Consumer Affairs, Dr van der Merwe, said here today.

He was introducing the second reading debate on the State Oil Fund Amendment Bill, a measure which was taken through all its stages with the support of all parties.

Dr van der Merwe said he was optimistic about South Africa's energy position towards the end of the decade.

"In this rapidly changing world and especially in the realm of energy, it is impossible to lay down blueprint measures and regulations, and expect them to be absolutely effective for any length of time. This is why it has become necessary again to look at the provisions of the State Oil Fund.

"I want to give the assurance that the measure is not being introduced with the aim of possibly increasing the price of petroleum products.

In terms of the Act, a levy can be placed on a specific petroleum product, but cannot be varied according to the purpose for which the product is used.

The Bill makes it possible to do this. For instance, a lower levy can now be placed on aviation fuel for overseas flights and for the use of paraffin for the home.—Sapa.

STAR 2/5/80

SA has exported ethanol vehicle

55

2/5/80

Own Correspondent

PORT ELIZABETH. — Volkswagen of Uitenhage has completed the first ethanol-powered car.

It is the first to be built by a South African manufacturer. The car, a Passat, has been exported to an undisclosed buyer.

The manufacture of the car comes only a month after the announcement that Volkswagen is involved in AECI's R[illegible]-million methanol research programme for which it has built methanol-powered Golfs.

The company's managing director, Mr Peter Searle, said yesterday that more ethanol-powered Passats were nearing completion for use in the company's own research programme.

The engine used in the Passat was imported from Brazil and modified for local conditions by Volkswagen's technicians in Uitenhage. The 1 500cc engine is equipped with high compression pistons — which increases the compression ratio to 10.5:1 — and a special carburettor and distributor.

"Now that the large-scale production of alcohol fuels in South Africa is becoming a reality, the effects of the world oil situation become less significant for the economic wellbeing of the country. We already have the technology to produce vehicles that are able to operate on pure alcohol fuels," Mr Searle said.

13

Escom report says demand is soaring

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THE Electricity Supply Commission (Escom) received R1 529 000 000 in revenue last year as against R1 301 200 000 in 1978, according to the commission's annual report for 1979 tabled in Parliament yesterday. Total charges against revenue were R1 511 700 000, compared to R1 234 500 000 the previous year.

"The growth of 10,7% in kilowatt hours of electricity sold in 1979 is a clear indication that the South African economy has firmly entered a period of economic expansion, the early phases of which were evident in 1978 when a growth rate of 3,4% was recorded over electricity sold in 1977," the report said. It added that the proposed July, 1980 tariff increases — averaging 7,3% — are necessary if major increases in 1981 are to be avoided.

Springbok sponsorship costs you 0,0008c per ℓ

55 CDM 3/5/80

THE ASSEMBLY. — The cost of the Milk Board's R65 000 sponsorship of the Springbok rugby team worked out to 0,0008c per litre of milk sold, the Minister of Agriculture, Mr Hendrik Schoeman, said yesterday.

Speaking during discussion of his vote, he said it had been said that the board should not be able to afford this while the price of milk was increasing, but he regarded it as an exceptionally good promotion.

Mr Schoeman also said he would welcome private initiatives to produce ethanol fuel from other surplus crops.

The manufacture of ethanol would also yield valuable by-products for use in stock feed, Mr Schoeman said during discussion of his department's vote.

South Africa had sustained negligible losses in maize exports when viewed against the R101-million profits in the four years up to 1977. The R34-million losses on maize exports in 1978 and 1979 were largely the result of huge maize surpluses in the United States which had flooded the world market.

Mr Schoeman said private corporations' would have his blessing to manufacture ethyl alcohol from surplus maize, depending on how much they were prepared to pay per ton.

Other points made during the discussion:

- Mr Bill Sutton (NRP Mooi River) said the Government should consider ways of decreasing the input costs to farmers as the only means of bringing down food prices. "I suggest that the Minister should consider the appointment of a joint committee of his own Department and the Departments of Customs and Excise and Finance to look at ways and means of bringing down input costs to farmers," he said.
- Mr Fanie Herman (NP Potgietersrus) made a plea for greater expediency in land purchases for consolidation. "In the past the amount set aside by Parliament for land purchases was R30-million. This year it has gone up to nearly R74-million ... If possible, more valuations of land to be purchased should be made this year," he said.
- Dr W D Kotze (NP Parys) appealed to the Minister to stop the export of maize. Instead, he said, the surplus mealie harvest should be used for the production of ethanol fuel.
- Mr John Malcomess (PFP East London North) urged the Minister to permit farmers in all rural areas to set up co-operatives for the electrification of their farms.

Escom must grow

11.5.40 (55) S. Times (?) Business

SOME R11 000-million will need to be spent by the Electricity Supply Commission (Escom) in the eighties to keep pace with current growth in demand for electricity.

This will mean a doubling of the organisation's capacity from 15 974 MW to more than 30 000. Generating plant with a capacity of more than 9 441 MW is currently under construction or on order.

This is revealed in Escom's latest annual report, tabled this weekend.

Dr R L Straszacker, who was chairman in the year under review, says that the growth of 10,7% in kilowatt-hours of electricity sold in 1979 is "a clear indication that the South African economy has firmly entered a period of economic expansion.

By STEPHEN ORPEN

"The early phases were evident in 1978 when a growth of 8,4% was recorded.

"On only five occasions in the past 30 years (1950, 1954, 1955, 1973 and 1974) has Escom recorded a higher annual growth rate in power sales.

"This is all the more remarkable as it represents a dramatic recovery in sales from the modest 5,9% growth in 1977 . . ."

Total revenue for the year amounted to R1 529,5-million as opposed to R1 301,8-million in 1978.

Total charges against revenue were R1 511,7-million compared to R1 234,5 million the previous year.

In both 1978 and 1979 actual growth in sales outstripped anticipated growth, so that a surplus was achieved (R61,8-million and R17,8 million respectively).

Arafat threatens to blow up all Arab oil wells

55

RDM 5/5/80

KUWAIT. — The Palestinian Liberation Organisation's leader, Mr Yasser Arafat, has promised to blow up the Arab world's oil wells to prevent the United States from taking control of the Middle East.

In a strong attack on the United States and its allies at the weekend, Mr Arafat also declared that the Palestinians would continue to fight for total victory over Israel, despite the expulsion of three Palestinian leaders from the occupied West Bank on Saturday.

The expulsions followed a Palestinian commando raid on the West Bank town of Hebron in which five Israelis were killed and 16 wounded.

"We will blow up the oil in the Arab world if the US tries to gain control of the region, because the oil is Arab and will stay Arab," Mr Arafat told a meeting of Palestinian groups in Kuwait.

"The Palestinian people will resist any action the US may take against the Arab world in an attempt to guarantee its oil supplies," he added.

Mr Arafat promised that Israel's expulsion of the Arab mayors of Hebron and Halhoul and a local Muslim religious leader would not stop the Palestinians fighting.

"We are a torrent of blood, we will continue to fight and we will not stop until we achieve total victory over the Zionist enemy."

Meanwhile, the Israeli Government met in Jerusalem yesterday to decide its response to the Hebron attack.

The cabinet, meeting in its regular Sunday session, was to hear a report from Defence Minister Ezer Weizman on the attack and discuss measures to combat the rising tide of disturbance in the region.

Settlers from Kiryat Arba have called for Weizman's resignation saying he was incapable of controlling the region.

The military occupation authority has closed off Hebron to all traffic and a total curfew was in force for the second day in the town of 70 000 Arabs.

A West Bank military official said the intensive house-to-house hunt for the raiders in Hebron had so far been fruitless.

The Army barred residents of the nearby Jewish settlement of Kiryat Arba from entering Hebron after vigilante settlers fired shots into a house in the Arab city and smashed the windows of five cars in retaliation for the attack.

Fire brigades extinguished burning tyres on the Jerusalem-Ramallah road outside the Kalendia Refugee Camp set by Arab youths.

Students at a girls school in Ramallah set up a roadblock and burned tyres outside the facility.

Another group of Arab girls broke schools windows in Tubas near Jenin, officials said.

And, it is reported from Cairo that Israeli opposition leader, Shimon Peres, has called for new negotiations between Israel and Jordan's King Hussein to reach an "interim agreement" on the future of the Israeli-occupied Jordan West Bank, which the Amman Government administered before 1967.

In an interview published yesterday by the newspaper Al Ahram, Peres said the Israeli-Jordanian negotiations could be based on the UN Security Council Resolution 242 and not on the Palestinian autonomy scheme included in the Camp David framework.

King Hussein accepts Resolution 242 but has rejected the autonomy plan.

Interviewed in Washington, Peres said: "My idea is to bring Jordan into the negotiations, but the big question is whether King Hussein is ready to act.

Peres recalled that Hussein had accepted resolution 242 as the basis of an overall Middle East settlement and said the monarch has a special responsibility to the Palestinians of the West Bank, since many of them have Jordanian passports.

Asked if Israeli troops should maintain a presence in the West Bank as part of a negotiated agreement, Peres said: "No, I think we must find solutions that do not require the presence of foreign troops. — Sapa-Reuter and UPI.

Paper No ....

(to be copied from the heading on the Examination Paper)

Initials

NOTE CAREFULLY

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Unicorn in fuel drive

RDM 5/5/80.

232

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UNICORN Lines has withdrawn from service and is converting the main engine and fuel treatment system of the 4 600 dwt Sezela to enable the vessel to operate on a lower grade of heavy fuel oil.

This is part of a fuel conservation programme to offset the continuing increases in the cost of marine fuels.

The company's naval architect, Captain Gilbert Calver, said the substantial capital outlay for the purchase and installation of a steam generator, tank heating coils, pumps, purifiers and other essential equipment would be recovered from lower-priced heavy fuel.

Unicorn set up a fuel conservation committee last year to investigate ways of reducing the fleet's fuel account. The first stage was to examine the blending of fuels.

"By research and study of optimum combustion and engine operating and maintenance performance, we are now able to run the larger vessels in the fleet on more economical blends of marine diesel and heavy fuel oil," Captain Calver said.

"The second stage is the conversion of ships' engines. Apart from the Sezela, we are considering converting the trampco vessels, Ridge and Verge."

Captain Calver said that the South African oil refineries had introduced refining techniques to obtain the maximum quantity of diesel fuel from each ton of crude. This was because of large demand for high-grade dieseline for land transport and agriculture.

"However, the quality of the residual oil or heavy fuel oil supplied to the marine industry could not be maintained in the new cracking process — hence our efforts to find alternative fuel blends."

Unicorn's expertise in the marine field had led to requests for technical consultation from trawling companies.

"Our advice to such inquiries has been largely based on experience and practical results achieved aboard our own vessels," he said.

Opec plan nears finality

55

1/5/80

TAIF. — Opec Ministers meet here today for an extraordinary conference, confident they are within sight of agreement on a plan which would both stabilise oil prices and protect the oil exporters' long-term interests, say Opec sources.

A committee of experts which worked out the plan under the Saudi Minister of Oil, Sheikh Ahmed Zaki Yamani, met briefly tin Taif, Saudi Arabia, yesterday to put final touches to its proposals which would index oil prices to currency fluctuations and inflation, and be revised regularly every quarter.

Iran, Algeria and Libya have expressed reservations about the committee's proposal to link the price of oil to prices in the industrialised world.

However, Opec sources said there was little likelihood that the proposals would be changed significantly.

Opec officials stress that today's conference is not due to discuss prices, an issue to be taken up at the regular Opec price conference in Algiers next month.

The Ministers hope to reach agreement then on a return to a single base price for their oil, abandoned in the scramble to benefit from last year's shortages after the Iranian revolution.

But the Opec sources said persisting world fears of new oil shortages did not encourage the belief that the Algiers conference would produce an agreement on prices, essential before the long-term strategy could be agreed to at an Opec summit in Baghdad in November to mark the organisation's 20th anniversary. — Reuter.

Soweto job for GEC SA, Siemens

3237 RDM 8/5/80 655 185

TWO OF South Africa's biggest electrical groups, GEC South Africa and Siemens, have received letters of appointment from the Deep Meadow, Dobsonville and City of Soweto community councils for the R100-million greater Soweto electrification project.

The announcement follows the statement in Parliament by the Minister of Cooperation and Development, Dr Koornhof, that his department would go ahead with the R153-million electrification programme.

The contract will be handled by TESACON, a consortium formed on a 50-50 basis by GEC Power Distribution, a GEC S A company, and Siemens.

A spokesman for TESACON (Township Electrification South Africa Consortium) said work would start immediately. The contract called for the supply and installation of the 11 000-volt and low voltage networks for Deep Meadow, Dobsonville and the City of Soweto.

Job opportunities for several thousand black workers would be created and on-the-job training would be undertaken. Local content of the products and services to be supplied would be close to 100%. Sub-contractors would be widely used, especially for installation work.

The large installation portion of the contract would be carried out by a sub-consortium lead by Industrial Electrical Company (Pty).

One of the first tasks for the project coordinators would be to make final a project timetable in collaboration with the consulting engineers, G H Marais & Partners Incorporated, acting for the councils.

Both partners in the consortium had executed projects in Soweto. GEC Power Distribution supplied about 50 mini substations and Siemens installed five containerised telephone exchanges.

GEC Power Distribution, through its Power Projects Division, and Siemens were the only companies to tender on all the inquiries issued for the project.

"With the completion of the contract many of the blacks trained while in the employ of the consortium will become available for employment by the electricity undertakings in the area to create the infrastructure that will be necessary for the maintenance of the electrical networks."

77 + 30 = 107

(3)

UNIVERSITY OF CAPE TOWN
EXAMINATION ANSWER BOOK

EVERY CANDIDATE MUST enter in column (1) the number of each question answered (in the order in which it has been answered); leave columns (2) and (3) blank.

Sasol's output will soon exceed others — claim

(55) NDM 8/5/80

PORT ELIZABETH. — By the mid-80's Sasol's fuel production would exceed the combined output of all other oil companies in the country, the managing director of Sasol, Mr J A Stegmann, told the sectoral motor conference of the Afrikaanse Handelsinstituut in Port Elizabeth yesterday.

But Mr Stegmann warned that South Africa would still have to import considerable amounts of crude oil if domestic production was not increased.

He said that although the supply of crude oil would become increasingly uncertain, oil would remain an important source of energy well into the next century.

A good deal more could be done to expand domestic fuel production and he welcomed the intentions of other companies to enter this field.

He added that Sasol was not contemplating the erection of further plants at the moment.

One important development was South Africa's increasing coal exports. He said the country would soon be a net energy exporter and this could clear the way for a trade in energy.

A number of local undertakings were examining the possibility of manufacturing methanol from coal and exporting it as an electricity-generating fuel, Mr Stegmann said. This would give South Africa the benefit of exporting an enriched product rather than a raw material.

He said the use of diesel had grown out of proportion to the use of petrol since 1974. This made it important that local production concentrated on fuel for heavy diesel vehicles. If this was not done, the country would not lower its dependence on imported crude oil.

In this regard various possibilities were being investigated and good progress was being made, Mr Stegmann said. The use of alcohol as a diesel addition still required considerable research.

He predicted that in the years ahead, the outside world would come to South Africa to learn how to achieve energy independence, Mr Stegmann said. — Sapa.

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Examiners' Initials		

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B. 4b

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(55)

OIL REFINERIES FM 7/5/80

Awaiting the crunch

Government will soon have to face awkward policy decisions on the future of the country's major crude oil refineries at Durban and Cape Town.

The refineries, currently operating at not much more than 45% of capacity because of stringent conservation measures, will suffer even more serious problems of under-utilisation as increasing volumes of synthetic fuels and alternative fuels (methanol and ethanol) come on to the home market.

Enactment of the State Oil Fund Amendment Bill, which was taken through all its stages in Parliament this week, is the first indication that government is trying to get to grips with the problem.

In addition to making provision for differentiated levies to be imposed on petroleum products for purposes of contributions to the Equalisation Account of the State Oil Fund (SOF), the Bill exempts petroleum products manufactured from crude oil from SOF levies, if the products are exported.

The first amendment is intended to bring relief to international airlines operating on the SA route. Massive SOF levies on aviation kerosene lifted at Jan Smuts played havoc with their operating costs, and one airline suspended its service to SA. Similarly, a reduction of the levy on illuminating paraffin was intended to bring relief to hard-pressed households in the low income groups.

While the oil multi-nationals welcome the levy rebate on products for export (17,5c/ℓ on 93 octane petrol), they warn that there are clear limits to their ability to export their way out of trouble.

Although small parcels of motorgas (petrol) have been sold on international spot markets in the past (during periods of sharp local under-consumption) the high cost of crude oil acquisition makes SA-made petroleum products uncompetitive on international markets, including African markets with their high cost structure.

An obvious immediate candidate for the surplus production of the oil majors is Zimbabwe, but there must be doubts about the long-term future of this market, since it has a refinery of its own.

Sustained by oil supplies from SA during the long years of UDI, Zimbabwe will doubtless continue to rely on supplies from the Republic for as long as it takes to bring Umtali's Feruka refinery back to production. According to the best information in the oil industry, it may take up to two years to recommission Feruka, which has a capacity of about 20 000 barrels a day (1 barrel = 200 litres).

A complicating factor is that Lonrho, which owns the crude oil pipeline between Beira and Umtali, has instituted damages against Shell and BP, two of the seven owners of Feruka, arising from allegations in the Bingham Report that the British oil majors committed breaches of the British government's sanctions order against the UDI regime.

Another factor which may deprive SA refiners of the Zimbabwe market in the medium-term would be a decision by the Salisbury government to take its oil products from Mozambique's Sonarep refinery in Maputo (capacity: 900 000 t a year), although this might not be a serious option, because oil consumption in Zimbabwe is almost certain to rise far above Sonarep's ability to furnish all its needs.

Apart from Zimbabwe in the short-term, there are no export options in Africa. The oil majors say it is laughable, as Sasol chairman David de Villiers said in Cape Town last week, to suggest that black African states will commit themselves to contractual arrangements with refineries located in SA — at least not in the present political climate.

Meanwhile the oil majors' pips are squeaking. Refineries facing the crunch of ever-reducing returns are Sapref in Durban, jointly owned by Shell and BP, with a capacity of 200 000 barrels a day; the Caltex refinery in Cape Town with a capacity of 100 000 barrels a day; the Mobil refinery in Durban (capacity: 100 000 barrels a day) and the Sasol-controlled Natref crude oil plant at Sasolburg with a capacity of about 75 000 barrels a day.

While total capacity is about 475 000 barrels a day, actual output, now that some of the modules at Sasol 2 are beginning to produce liquid fuels, may be less than 200 000 barrels a day.

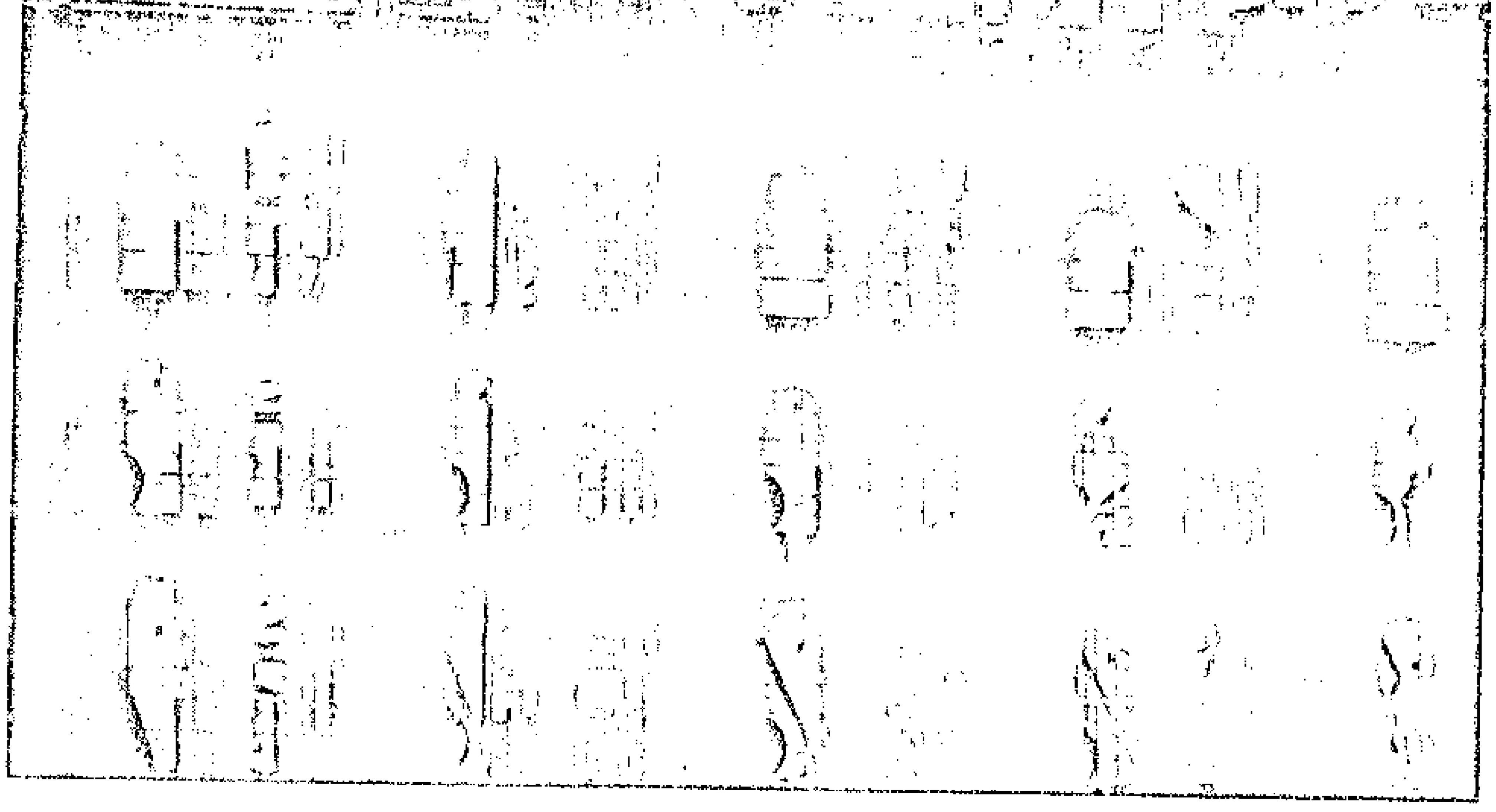
The depreciated book value of the three coastal refineries is a closely guarded secret, but it is no secret that Caltex, Shell/BP and Mobil recently completed capex programmes running in excess of R200m to install secondary processing equipment designed to raise yields of petrol and diesel from available crude.

In terms of a contractual arrangement between government and the refinery operators the latter are permitted a fixed return on capital employed. If for reasons of higher offshore prices of crude, or for reasons of lower volume throughputs, the profit/loss balance is disturbed then the oil companies are entitled to call for an adjustment to the "margin."

Government has stated that the three Sasols will eventually (by 1982) produce something like 47% of the country's demand for liquid fuels (at 1978 levels of demand). Incorporation of methanol/ethanol in fuel mixes of the future will reduce even further the country's reliance on products derived from imported crude oil.

The oil majors clearly feel government is under moral obligation to remedy the situation.

Whatever "relief" formula is arrived at, it will be watched with intense interest by governments the world over since they, too, will face a similar dilemma when they decide to switch to alternative sources of energy.



Sasol . . . upsetting the balance?

US to supply India with nuclear fuel

55

237

9/6/80

By ANTHONY RIDER
Washington Bureau

WASHINGTON. — In a move likely to worsen existing poor official relations with South Africa, the United States is to sell nuclear fuel to India.

The State Department is recommending that the nuclear regulatory commission approve the sale of 38 tons of uranium reactor fuel to India.

This is in spite of the fact that India — like South Africa — has not signed the Nuclear Non-Proliferation Treaty.

Nor has the government of Mrs Indira Gandhi modified India's refusal to give Washington any assurance that it will halt nuclear tests.

In Johannesburg last night the president of the Atomic Energy Board, Dr J W L de Villiers, said it was possible for America to supply nuclear fuel to India despite the fact it had not signed the non-proliferation treaty.

As far as he knew, the president of the United States could recommend to Congress that a country be supplied with uranium enriched fuel — even if it was not a treaty signatory.

Asked if South Africa would now push ahead as fast as possible with its own production of nuclear fuel, Dr De Villiers referred to a speech made last month by Dr Ampie Roux, the chairman of the Uranium Enrichment Corporation of South Africa, in which he said South Africa was continuing at maximum tempo with expansion of its own pilot plant for the enrichment of uranium into a production plant.

GEC, Siemens get Soweto project

~~61~~ ~~63~~ STAR 9/5/80 55 ~~343~~ ~~189~~

Two of South Africa's biggest electrical groups, GEC South Africa and Siemens, have received letters of appointment from the Diepmeadow, Dobsonville and Soweto councils for the R100m Greater Soweto electrification project.

This announcement comes in the wake of the statement in Parliament by the Minister of Co-operation and Development, Dr P G Koornhof, that his department will proceed with the R153m Greater Soweto electrification programme.

The contract is to be handled by Tesacon a consortium formed on a 50-50 basis by GEC Power Distribution, a GEC SA company, and Siemens.

A spokesman for Tesacon (Township Electrification South Africa Consortium) said work on the project was to start immediately. The contract called for the supply and installation of the 11 000 volt and low voltage networks for Diepmeadow, Dobsonville and Soweto.

He said job opportunities for several thousand black workers would be created by the project, and on-the-job training would be undertaken. Local content of the products and services to be supplied would be close to 100 percent, and subcontractors would be widely used, especially for installation work. The large installation portion of the contract would be carried out by a sub-consortium led by Industrial Electrical.

A spokesman said one of the first tasks for the project co-ordinators would be to finalise a project timetable in collaboration with the consulting engineers, G H Marais and Partners Incorporated, acting for the councils.

Both partners in the consortium have already executed projects in Soweto. GEC Power Distribution has supplied about 50 mini sub-stations and Siemens has installed five containerised telephone exchanges.

GEC Power Distribution, through its Power Projects Division, and Siemens, were the only companies to tender on all the enquiries issued for the project.

"Because the programme will have such far-reaching effects on the quality of life for the residents of Greater Soweto, the consortium intends tackling the contract with the utmost sense of urgency," the spokesman said.

"With the completion of the contract many of the blacks trained while in the employ of the consortium will become available for employment by the electricity undertakings in the area to create the infrastructure that will be necessary for the maintenance of the electrical networks," he said.

RDM 10/5/80 MAIZE 55

Ethanol talks

REPRESENTATIVES of interested organisations would meet members of the Maize Board on May 20 for discussions on the production of ethanol fuel from maize, the Minister of Agriculture, Mr hendrik Schoeman, said yesterday in reply to a question by Dr W D Kotze (NP Parys). His written reply said representatives of several organisations had negotiated with the board, and the price and quantity of maize to be made available for ethanol production still had to be finalised.

CAPPORT 11/5/80 (55)

Grond vir Sasol

GROND is ter syde gesit vir die moontlike oprigting van 'n reuse-nuwe steenkoolkragstasie en vir die grootskaalse uitbreiding van Sasol 1, lui 'n Regerings-gidsplan vir die Vaalstreek wat Vrydag bekendgestel is.

Die moontlike kragstasie sal die Vaal- en Klip kragstasie vervang en hulle sal dan deur Evkom geslult word. 'n Groot stuk grond, noordoos van Sasolburg is opsy gesit vir toekomstige uitbreiding van Sasol 1.

Die gidsplan, voorberei deur die fisiese beplannings afdeling van die Kantoor van die Eerste Minister, maak ook voorsiening vir vyf nuwe snelweë, 'n uitgebreide spoor-netwerk sowel as 'n lughawe in die Vaal driehoek. Die Vaaldam, Lochvaal en die oewers van die Vaalrivier word vir onspanning en die bewaring van die natuur behou. In die meeste van die area is die oprigting van geboue nader as 50m aan die waterlyn verbied.

SA on verge of new coal bonanza

(55) (215) (74)

RDM 12/5/80.

Own Correspondent

PARIS. — South Africa will benefit enormously from a new "golden decade of coal", which is just starting as Western countries seek cheaper fuel than oil.

Le Monde newspaper reported yesterday that the coal boom will increase South African exports by 20% annually for the next five years.

It said that Richards Bay, one of the two main coal ports in the Southern Hemisphere, and Haypoint in Australia, will be at the hub of the new traffic.

This is because Western countries will have to invest in giant bulk carriers and only ports such as Richards Bay and Haypoint have the facilities to take them.

For instance, French shipowners have just ordered five 140 000-ton bulk carriers from Japan, costing R200-million. They will be launched in 18 months time and will use Richards Bay.

France has trippled its imports of South African coal in the past three years — South Africa is the third largest supplier after West Germany and Poland — and this increase will be stepped up.

France's coal needs last year were about 30 000 000 tons, of which about 21 000 000 tons were delivered by sea. This year France's needs are estimated at 33 000 000 tons and 23 000 000 tons will be shipped.

This increased rhythm is planned to continue until 1985 when France's first energy programme is completed. The new five-year plan, to 1990, will also lean heavily on South African coal.

A leading role in buying bulk carriers for coal is being taken by the consortium of French merchant fleets known as Centragpa — Economic Grouping of French Shipowners).

Le Monde said the group's fleet of bulk carriers, including the five new ones, will be used on direct France-South Africa routes and the South Africa-Rotterdam route for third party cargoes.

Le Monde said: "The coal boost is not a straw in the wind, either for the mine-owners or shipowners."

A communist campaign to halt French imports of South African coal, which started six months ago, has been a total flop.

CONSUMER MAIL

RDM 12/5/80 (55)

Save energy to keep electricity bills low

(266)

Staff Reporter

ENERGY wastage could cause an unnecessary rise in electricity bills as sharp as the winter drop in temperature if consumers do not take precautions against wasting household heat.

Portable heaters are the usual source of warmth in winter, but they should be used together with other measures to keep the warmth in and the cold out.

One of the main factors in choosing a heater is how much electricity it will use. Generally, the higher the wattage, the higher the electricity consumption.

A 1kW electric heater costs the householder in Johannesburg about 2,4c an hour for the first 35 hours. After that the tariff drops to about 1,9c an hour.

If the heater is used for five hours a day, this amounts to 150 units a month, adding about R3,03 to your electricity bill.

Those who live in flats would pay slightly more — about R3,08.

The Johannesburg Electricity Department makes several recommendations for saving energy on space heating. The first and most obvious is that the heater be switched off when not needed.

This was emphasised by a spokesman for the National Building Research Institute of the Council for Scientific and Industrial Research. He said: "You must warm people and not empty space."

This is also important for those who have underfloor heating in their houses. Make sure the thermostat is set correctly or you will pay for heat you never use.

Portable thermostats are also available for heaters which do not have a built-in thermostat. They are fitted between the heater and the electric power socket and a lamp indicator shows when the heater is on.

The most effective way to conserve heat is to insulate the room. Material can be obtained to insulate the roof space. This plus the use of thermostats has been proved by the electricity department to drastically reduce the cost of heating.

But the cost of thermal insulation is high and instead of insulating the whole house, consumers may consider only insulating the rooms used most often.

General advice from the electricity department is not to buy larger and more powerful electrical items than you actually need. There are several simple ways to conserve heat that will make low-power heaters more effective and keep the electricity bill down:

- Keep doors leading to unused rooms closed as this will keep warm air in the room used;
- Test window and door frames for draughts, which rob a room of heat and can increase space-heating costs by up to 15% a year;
- Close off any unused chimneys by putting a board across the opening. An open chimney in a 1m² fireplace can let up to 8% of the heat in a room out;
- Underfelts beneath carpets will prevent loss of heat through the floor;
- Heavy curtains, especially on east facing windows, prevent a loss of heat through the glass, which does not hold heat. They should be drawn as soon as the sun goes down.

FOOTNOTE: On Friday Consumer Mail published the results of a heater price survey. Prices were quoted for "Capil Slenderline" heaters — new models, "Capil PH 756T". The cheaper Intown Centre model was older and not thermostatically controlled.

14/05/80 NEWS

Railways warned on danger of coal crisis

Argus Correspondent

JOHANNESBURG. — [illegible] must devote more resources to [illegible] coal in South Africa [illegible] ability for the crippling effect [illegible] coal crisis would have on the country, [illegible] officials.

Railways officials and coal [illegible] [illegible]

Mr Andre [illegible] manager [illegible] Coal [illegible] Association, said [illegible]

[illegible]

9) b) Price discr... commodity or usually a service is ... to different consumers.

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Prune Escom's huge profits — Malcomess

55 RDM 14/5/80

Political Staff

THE ASSEMBLY. — The Government should take immediate action to reduce Escom's profitability, Mr John Malcomess, the PFP spokesman on industries, said this week.

He also accused Escom of "robbing the farmer" by charging 18% on capital costs and described this as "nothing short of usury".

Speaking during the Industries Vote, Mr Malcomess said State corporations such as Escom, Iscor and Sasol were drawing huge sums from the South African capital market.

"Clearly better control is needed," he said.

"The Board of Trade has recommended stricter discipline, yet I understand, the Minister has rejected these recommendations.

"Yet the Prime Minister has told the country and business leaders that his party will move more in favour of the free enterprise system.

"Perhaps the message hasn't got through to the Minister of Industries," Mr Malcomess said.

He called on the Government to establish a capital projects evaluation group — as recommended by the Board of Trade — which would have the power to control the quality and priority of public sector capital projects.

Mr Malcomess rejected Escom claims that it was providing the cheapest and most reliable electricity in the world.

"In certain undertakings by Escom we find the cost of electricity is higher than in many other parts of the world," he said.

If the Reef cost was 100 in 1978, then the cost in East London was 244, while the cost in Austria was 157, in Britain 125, in Spain 93 and Sweden 98.

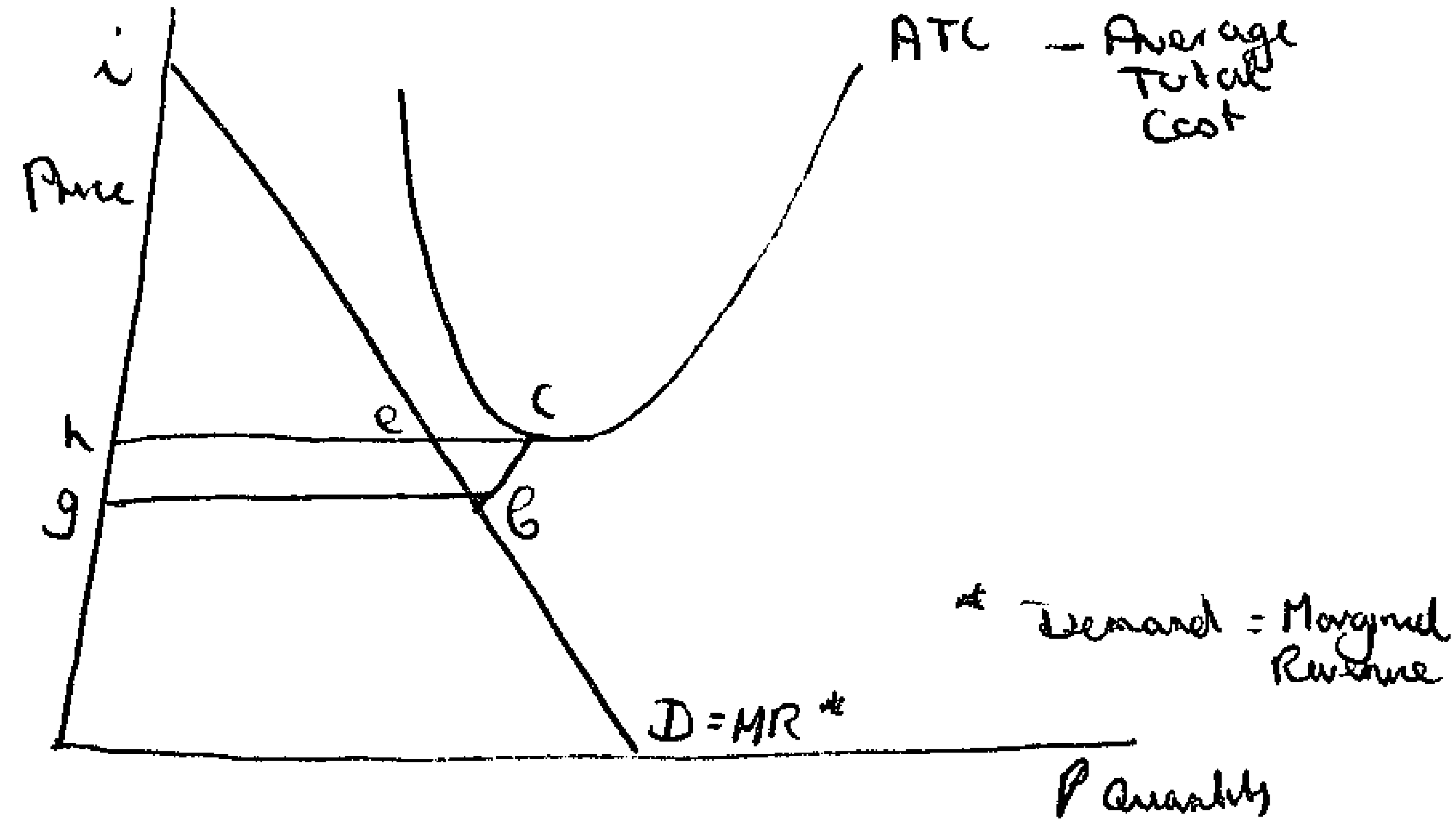
"From the Board of Trade report one can only come to one conclusion and that is that all is not well with Escom.

"Immediate steps should be taken to reduce the profitability of Escom in the interests of the economy," he said.

He believed tariffs throughout South Africa should be equalised, and that power should be delivered to each undertaking at the same basic rate.

PROVINCIAL COUNCIL

Price discrimination ... monopolist cannot cover Average ... loss in the long run.



The common area of losses and profits are ghef. The Δ h i e must be greater than Δ ecb in order to make a profit. If it is smaller, no use because losses in the long run.

Saudis push up oil price

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(CDM)
15/5/80

NEW YORK. — Saudi Arabia has raised prices of all grades of oil by $2 a barrel retroactive to April 1, industry sources said yesterday.

Sources said they were surprised by the pricing action.

Ministers from the Organisation of Petroleum Exporting Countries held a meeting earlier this month to discuss a uniform pricing system.

Saudi Arabia recently said it would not change its production schedule until the end of June. — UPI.

N-power: The US and SA at lo

America is to supply enriched uranium to India — but there are still snags over supplies to South Africa.

In a highly controversial move, the United States government is preparing to supply India with 18 tons of enriched uranium — despite the fact that India has exploded a nuclear device and despite the fact that India will

John D'Oliveira

Behind the News

not give the assurance that it will sign the Nuclear Non-proliferation Treaty.

At the same time, the US and South African governments remain close to deadlock on the US refusal to supply South Africa with enriched uranium for its Safari One reactor at Pelindaba and its Koeberg nuclear power station.

Yet another example of US double standards in the application of its international policy?

Yes and no.

It is quite clear that the Carter administration's attitude to the supply of nuclear fuel to India has been significantly tempered by its desire for closer ties with India following the Russian invasion of Afghanistan.

While the administration has said that the 1978 Nuclear Non-proliferation Act contained a "grace period" of two years and that this meant that the Indian order could be permitted, it is clear that this is no more than a rationalisation based on a legal technicality.

The fact of the matter is that the Act was intended to prevent nuclear proliferation by prohibiting the export of nuclear material to any country which did not accede to the NNPT — let alone a country which had already admitted to the explosion of a nuclear device.

And what about South Africa?

Firstly, the Carter administration is not trying very hard to soothe South Africa's feelings right now — to say the least — and thus nobody is looking for either legal loopholes or legal rationalisations.

Secondly, the whole issue has become involved in something akin to a Catch 22 situation.

South Africa and the United States had a nuclear co-operation agreement which expired in 1975 and in terms of which enriched uranium could be provided for the Safari One and the Koeberg reactors.

One of the last acts of the Ford administration was to recommend to the United States Nuclear Regulatory Commission that a licence should be granted for the export of fuel for the two reactors.

This recommendation was withdrawn by the Carter administration soon after it came into power in the context of an overall review of nuclear relations with South Africa.

According to United States officials, no decision was taken on this review up to the point where the United States and South Africa became embroiled in the controversy over whether South Africa was building a nuclear test facility in the Kalahari during the second half of 1977.

Then came the Nuclear Non-Proliferation Act of 1978 and the United States gove[...] the position [...] license the s[...] to both reac[...] Africa was [...] sign the NNF[...] the Internat[...] Energy A[...] guards.

Ever since [...] Africa and [...] States have b[...] tiation," as [...] diplomatic ci[...]

South Afr[...] that both th[...] and the Koe[...] are operated [...] IAEA safegu[...] South Africa [...] pared — in[...] to subject th[...] daba uraniur[...] plant to saf[...] would ensure [...] the enriched [...] duced would [...] anything but [...] poses.

However, [...] claims that t[...] not yet work[...] of safeguards [...] enrichment [...] that South [...] to know a gr[...]

READER[...]

TUTU'S CALL

I refer to Bishop Tutu's proposal to the conference of the South African Council of Churches (The Star May 9) that "conference members pray on their knees in Church Square and tell police they would not move until they had finished praying."

This forms a vivid background to Christ's words:

"When you pray, do not be like the hypocrites, for they love to pray standing . . . on the street corners to be seen by men. I tell you the truth, they have received their reward in full.

"When you pray, go into your room, close the door and pray to your Father . . . Then your Father, Who sees what is done in secret, will reward you." - Matthew (Chapter 5, Verses 5-6).

Protest prayers, indeed!

FM 16/5/80

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OIL EXPORTS

Is jobbing exempt?

Conflicting interpretations of the export "concessions" in the State Oil Fund Amendment Bill (*FM* last week) are not going to allay the fears of SA's three coastal refiners about rising spare capacity.

Uncertainty has arisen over whether the amendment exempts export process "jobbing" from levy contributions to the Equalisation Account of the State Oil Fund.

The wording of the relevant sub-clause (1b) seems to indicate that it does. So does Industries Minister Schalk van der Merwe's Second Reading speech. But inquiries by oil brokers to the Department this week established that products "jobbed" for export from crude oil specially imported for that purpose would not escape the SOF levy.

That any sort of confusion should exist at all is quite extraordinary. The relevant clause of the Bill exempting oil exports from the levy, refers to "petroleum products manufactured for use outside the Republic from raw material produced outside the Republic which is required for the manufacture of such petroleum products".

Schalk van der Merwe's interpretation of the clause is that it permits oil companies to export oil products "free of the equalisation levy . . . also to someone who has not necessarily made the crude available for refining."

Oil brokers who claim that favourable export opportunities exist, mostly non-African, for white product refined from crude imported specially for this purpose, are amazed that the Department of Industries does not see the export concession extending to export jobbing.

It is even more puzzling because Sasol chairman Dawid de Villiers, in a tacit admission of the oil majors' concern at over-capacity in their refineries, recently told a Cape Town engineering convention that the oil companies and government should co-operate to review import duties and harbour and transport charges to promote greater export of refined product.

SA, he said, should be able to achieve an "unassailable position" as a refiner of crude oil for smaller African countries. He added that total capacity of the country's four conventional refineries (475 000 barrels a day) was equal to 55% of the present needs of the rest of Africa, excluding the Maghreb countries and Nigeria.

The prospects of SA-located refineries developing term contracts to supply black African states with oil products are extremely remote, with the possible (short-term) exception of Zimbabwe which has a refinery of its own that could be restored to productive capability in about 18 months.

If jobbing for re-exportation is not to be exempted from SOF levies (17,5c a litre on 93 octane motorgas), then how can refinery operators maintain viabilities?

This is important in view of the special relationship that exists between government and the international majors operating in SA.

The nature of their understanding is such that, despite foreknowledge of the fact that Sasol synthetic fuels would eventually begin to supplant conventional liquid fuels, the four oil majors which operate refineries nevertheless invested more than R200m on a secondary processing plant designed to yield precisely more of the fuels which Sasol is now beginning to produce in large volumes.

These investment decisions were clearly based on more than just a belief that the oil crisis would go away and that consumption would once again start rising at pre-1973 annual rates. They were based rather on the certainty that in the SA oil price structure there is an ironclad guarantee of return on capital employed.

Although petrol and power paraffin are theoretically the only products subject to price control in SA, in practice the prices of other products are not adjusted without government approval.

The basis of the local price structure is the "import parity" of petrol. To arrive at an in-bond landed cost the following price components are taken into account:

- The fob value, which comprises a four-company average of producing a litre of petrol, based on the experience of Shell, BP and Mobil in Singapore and Caltex in Bahrein;
- The weighted average of ocean freight to SA ports from Bahrein and Singapore;
- Marine and War Risk insurance;
- Ocean loss;
- Landing charges levied by SAR & H.

On to this "notional" price are added excise duty and various levies, plus a government-approved profit margin for the oil companies. This sets the basic coast price which at any given time will see the oil companies in a position of over- or under-recovery in terms of the profit formula.

Pricing policy

To monitor the oil majors' profit/loss situation a cumulative industry "slate" is maintained by testing companies' operating results against import parity plus agreed margin. This forms the basis of negotiations between the oil companies and government for price increases and usually follows within a few months of increases in OPEC reference prices (basic prices).

As a rule government resists granting price increases to compensate the oil majors for higher operating costs, but offshore price hikes, such as when producing countries raise basic prices, are granted almost automatically, though not immediately.

Crucial to this understanding between government and the oil companies would seem to be the assumption that refinery throughputs should be maintained at optimum levels, after adjustment for the obvious impact of conservation measures (including high prices) on consumption.

However, if throughputs get to be trimmed as a result of inroads by Sasol synthetic products, which will obviously get preferential treatment in the market place, then it may not be long before the refinery operators seek "accommodation" from government.

FOREX MARKET

The inauguration of the Reserve Bank's new rate structure for forward cover brought in its train a renewed upsurge in the rand-dollar rate. (*FM* May 2 and May 9).

Over the period April 27 to May 13, the spot rate has risen from \$1,2443/83 to \$1,2632/52, a movement of 1,44% in less than three weeks. This would correspond, on an annualised basis, to around 25%, an obviously improbable rate of progression over a full year.

But in the light of widely held opinion in the financial community, a rise to \$1,30 is very plausible within the next few months. Some commentators hold that the rand should even rise well above \$1,30 by the end of the year.

The Reserve Bank continues to reduce its rates for forward cover, shadowing weakening US interest rates. On May 13, the rates for forward cover were: periods of up to 121 days — 5,50%; 121 to 243 days — 6,00%; 244 to 365 days — 5,50%.

The financial rand has been steady over the period, trading in a range of approximately 92 cents to 95 cents, reflecting a discount of around 24% to 26%.

55 16/5/80

AVIATION FM 16/5/80 55

Unkind cuts?

Government plans to drop the fuel equalisation fund levy on jet fuel to international airlines (*FM* May 8) could mean that local aviation will soon be paying double the price of foreign airlines.

"Whilst we agree that SA should not chase away foreign airlines with high fuel prices, we see no reason why they should pay less tax than local operators," says Cor Beek, director of the Commercial Aviation Association.

At present, jet fuel (avtur), at Jan Smuts airport, for international airlines and the SAA is the most expensive in the world: the price is about 39c/ℓ. But local airlines and charter operators pay even more, because they have the added burden of customs and excise tax (10,25c), gst (2,22c) and credit card commission (1,616c). In addition local aviation has to buy its fuel at retail prices while the big airlines deal directly with the oil companies. This puts the price of avtur to local aviation at 57,72c/ℓ at Rand Airport.

By contrast avtur will cost international airlines only about 28,5c/ℓ if the fuel equalisation fund levy of 10,35c/ℓ is dropped.

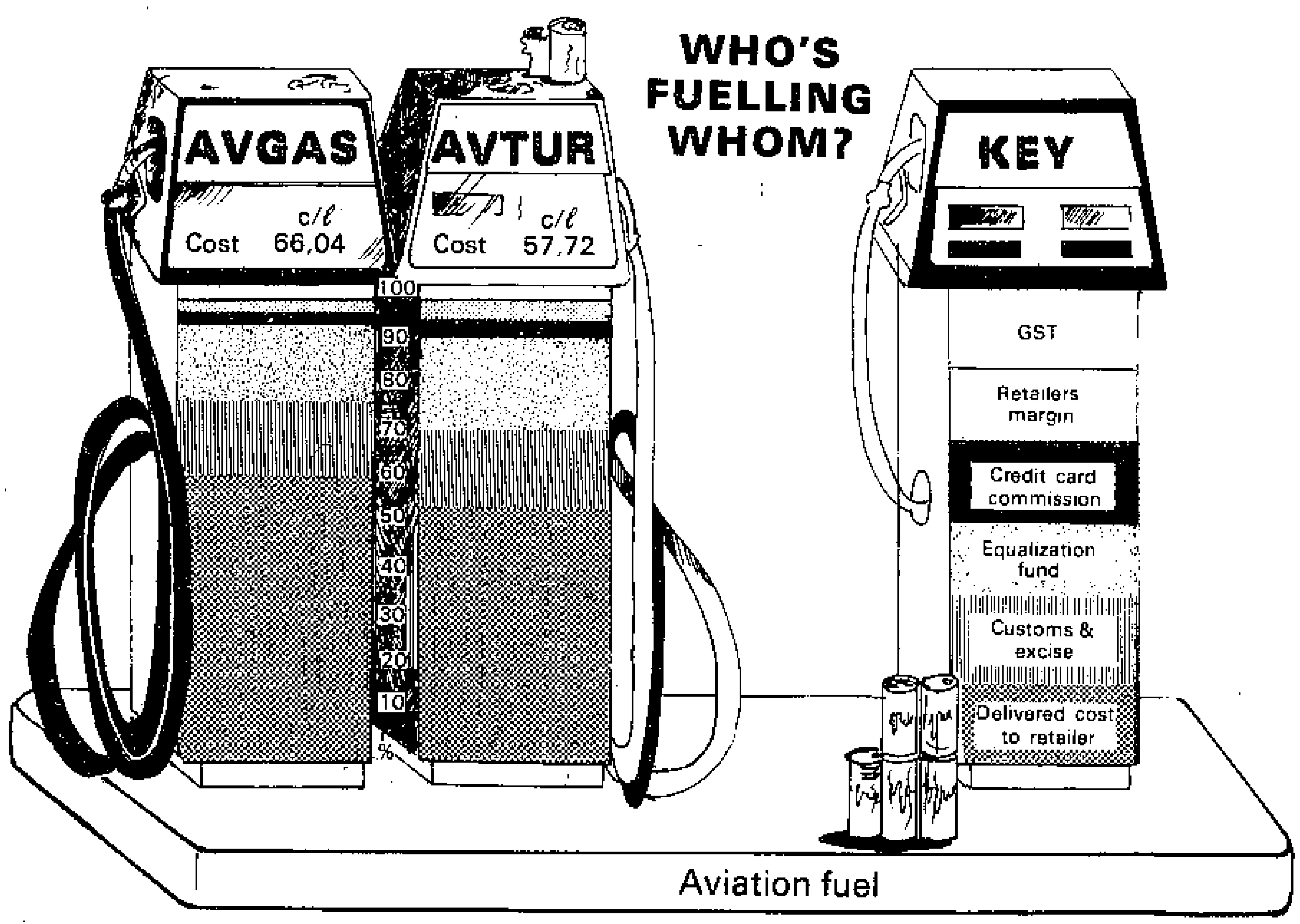
Even at this price, it will not be cheap by world standards, but it should be low enough to deter any more airlines from following the Panam example of discontinuing services to SA. And insiders say that most other countries will soon also pay about this much as the official Opec oil price steadily approaches the spot market prices paid by SA.

The fuel price hikes over recent years have made recreational flying a rich man's sport, and at present only 9% of hours flown in general aviation are for recreation. But business aviation has not suffered as much and in some cases has benefited. Costs of all forms of transport have risen and flying can often be more fuel-efficient than travelling by car. Added to this, businesses are discovering that it is better to spend two hours in an aircraft flying to and from a one hour meeting than a whole day to cover the same distance in a car.

Most general aviation aircraft in this country are piston-engined and use aviation spirit or avgas which costs 66,04c/ℓ at Rand Airport. Abolishing customs and excise tax and the equalisation fund levy would bring the price down to 45,28c/ℓ. The industry is divided as to its effects.

John Silver of Comair believes that flying clubs, training schools and suppliers of light aircraft would be the first to benefit, as elementary training and leisure flying increase. But Beek feels that business flying would benefit more and says that the cost of fuel in business flying is a far greater proportion of total costs than in flight training where an instructor also has to be paid.

Despite price discrepancies paid by local and foreign operators, it is unlikely that government will give the local industry any relief. SA pays more for oil than any other country so it is understandable that fuel prices are higher than elsewhere. But to keep the lines open for trade and tourism, it has to keep fuel prices for international travel in line with world prices. If it dropped fuel prices for general aviation to this level, other forms of domestic transport would be unfairly penalised.



(55) RDM 17/5/80

De Klerk appoints nuclear committee

The Minister of Mineral and Energy Affairs has appointed a committee to look into the restructuring of nuclear activities in South Africa. Mr De Klerk announced yesterday that the committee would also investigate salary discrepancies with the rest of the Civil Service. The committee will consist of Dr Ampie Roux, Dr R Straszacker, Mr J Kitshoff and Mr C Human.

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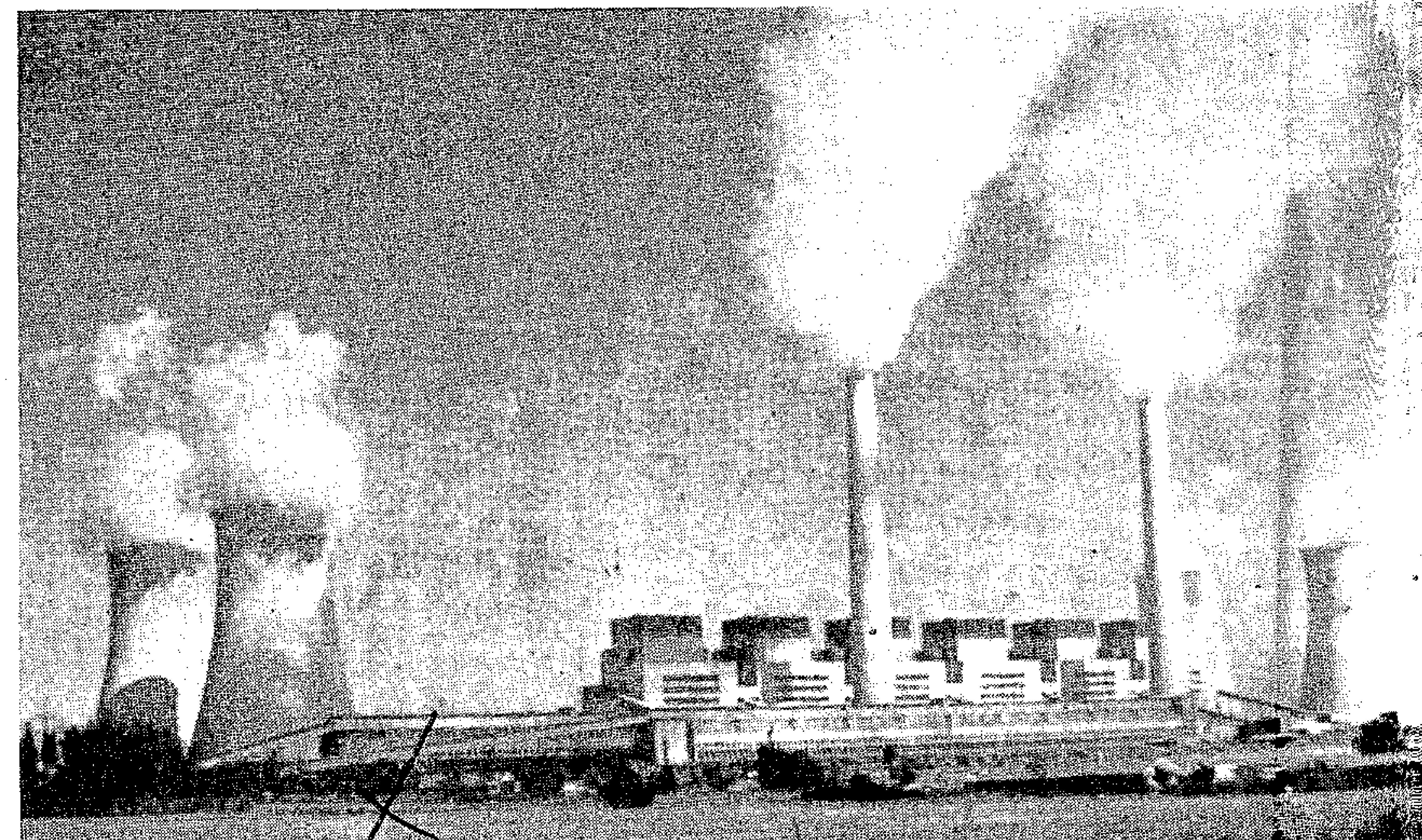
ENERGIE-REUS VERRYS OP KRIEL

Grootste in SA



KRIEL, nou Suid-Afrika se grootst kragstasie.

SO tien, vyftien jaar gelede was dit die vrotterigste stukkie landbougrond in die omgewing. Nou staan daar tuessn die plat landerye van die Oos-Transvaal, nie te ver van Bethal en Ogies af nie, 'n dorp met 11 000 mense.

Deur Piet Schoombee

'n Mens verwag hom nie daar nie. Maar die rede vir sy bestaan sien 'n mens al van die horison af — die Kriel-kragstasie.

Dié kragstasie se uitstuurvermoë is 3 000 mega watt. — drie keer meer elektrisiteit as wat Johannesburg in spitstye gebruik en omtrent ses keer wat Kaapstad nodig het.

Al ses sy stelle turbines loop nou en Suid-Afrika het nog nooit iets groter gehad nie. Maar nie vir lank nie. Skuins agter hom lê al 'n deel van die Matla-kragstasie, wat nog groter gaan wees.

Matla is die tweede rede vir die groot nuwe dorp in die Oos-Transvaal. Saam met Kriel, en die twee myne wat vir hulle steenkool voer, het hy die 11 000 mense gelok wat nou in die dorp woon.

Langsaan, in 'n ander dorp, bly 4 300 swartmense — 2 500 werk by Kriel en 1 800 aan Matla.

Evkom is verantwoordelik vir die kragstasies. Hy het ook die dorp opgerig, die strate, die rugbyvelde, elke enkele huis, en van die kerksale tot die kroeë.

Wat nie aan Evkom behoort nie, is die staatsgeboue en die NG kerk. Die grond is teen 'n billike bedrag beskikbaar gestel en die gemeente het self die gebou opgerig.

Die res is Evkom s'n en hy verhuur dit. Daar is sowat 1 700 steenhuise, 40 woonstelle, meer as 600 mense in die tydelike en permanente enkelkwartiere, en sowat 600 tydelike huise en woonstelle.

Die tydelike winkelsentrum word nou vervang met een wat byna R3 miljoen gaan kos, die ontspanningsklub van R1,8 miljoen is klaar en die sportgeriewe sluit 'n Olimpiese swembad, gimnasium, twee rugbyvelde, 'n krieketveld, drie rolbalbane en twaalf tennisbane in.

„Dis nie die stad hier nie," sê mnr. Bryan Clynick, die dorpsgebiedsuperintendent. „Soms moet 'n mens maar met minder klaarkom. As daar Sondagaande nie brood is nie, maak jy vetkoekies. Daarom moet ons vir die mense iets gee om dit vir hulle die moeite werd te maak om hiernatoe te kom."

Hy vertel van probleme met die huishoudelike inkopies. Sommige gesinne pak so elke drie maande die tog aan stad toe en gaan koop hul voorraad by die hipermark. Ander span weer saam en ry elke maand om die beurt.

'n Ander ongerieflikheid is om die groter kinders by die hoër skole te kry. Die Engelse kinders en dié wat 'n tegniese kursus volg, moet Witbank toe, 'n reis van 100 km heen en weer met die bus. Afrikaanse kinders gaan Ogies toe, 70 km heen en weer.

Gevolglik moet hulle die sport en ander buitemuurse skoolbedrywighede maar los, behalwe as die ouers self kan ry.

Daar is ook ander probleme. Maar daar is voordele ook. Soos gerieflike drieslaapkamer-huise teen 'n maandelikse bedrag waarvoor 'n mens in die stad nie die helfte van 'n enkelwoonstel sal kry nie.

Natuurlik kos dit alles 'n klomp geld. Benewens die R2 000 miljoen wat dit kos om die twee kragstasies op te rig, betaal Evkom ook vir die dorp. En hoewel dit in vergelyking maar min is, kan 'n mens nooit die skouers ophaal as van miljoene gepraat word nie.

Mnr. Dennis Roux, senior argitek by Evkom, skat dat dit sowat R48 miljoen gekos het net om die huise te bou. Dan kom die strate en ander dienste en geriewe nog by.

Was al dié geweldige uitgawes nodig? Pleks van hier op die kaal vlakte, kon die kragstasies nie byvoorbeeld naby Johannesburg gebou gewees het nie, waar daar reeds mense is en waar hulle in hul eie woonplekke bly.

Die antwoord is eenvoudig: Die steenkool is in die Oos-Transvaal en die Kriel-kragstasie gebruik 30 000 metrieke ton per dag, elke dag van die jaar. Dit word nou doodmaklik met vervoerbande reguit van die myn na die kragstasie toe gevoer.

RAPPORT het die SA Spoorweë gevra wat dit sou gekos het om so 'n spul steenkool daagliks Johannesburg toe te vervoer. Hul antwoord is hipoteties, sê hulle, want in die eerste plek is daar nie 'n spoorlyn nie. Maar teen 'n spesiale afslagtarief oor daardie afstand sou dit so R114 000 per dag gekos het.

Oor 'n jaar werk dit uit op R41,6 miljoen. Dan kom Matla nog by, wat hierdie bedrag meer as dubbel so groot sal maak, en ons praat van diep in die R80 miljoen net in die eerste jaar.

Hiernaas begin R48 miljoen vir behuising, R3 miljoen vir 'n winkelsentrum, R1,8 miljoen vir 'n ontspansentrum en die ander koste van die dorpsgebied na 'n besparing lyk.

Buitendien woon die mense van die twee myne ook daar. Anglo American se Amcoal-myn voorsien Kriel en General Mining se Matlacoal verskaf die Matla-kragstasie se steenkool. Die myne huur huise by Evkom en verhuur dit weer teen R10 'n maand aan hul werkers.

EEC rejects anti-SA oil embargo bid

(55)

RDM 20/5/80

Own Correspondent

AMSTERDAM. — An attempt by the Dutch Foreign Minister, Dr Chris van der Klaauw, to organise a European Economic Community oil embargo against South Africa, has failed, political sources said in the Hague yesterday.

Dr Van der Klaauw proposed an EEC embargo for the third time when Foreign Ministers of the nine countries met in Naples last week, but the answer from all countries remained negative.

Holland's partners argued, sources said, that South African co-operation in seeking independence for South West Africa was too important to jeopardise them through sanctions.

Dr Van der Klaauw's proposal was made reluctantly under pressure from MPs, who last November voted in favour of unilateral Dutch sanctions against South Africa.

At that time, Dr Van der Klaauw, with support from the rest of the Centre-right Cabinet, opposed any independent move by Holland. The only acceptable embargo, he said, would be one backed by all members of the community.

To apease MPs, he promised to seek support for a joint embargo. He was given until June 1 this year to report back to parliament. Parliamentary spokesmen on South Africa warned then, however, that if an EEC embargo was not possible, Holland would have to go it alone.

Now that a joint move seems impossible, Dr Van der Klaauw will face renewed pressure from MPs to ban the sale of Dutch oil products to South Africa.

Support from the relatively conservative government of Prime Minister Dries van Agt can be ruled out, but some MPs said last year that they regarded the issue as important enough to warrant a fall of the government if no agreement could be reached between MPs and Ministers.

Dr Van der Klaauw is expected to report to parliament within the next few weeks. It is not known, however, when the issue will come up for debate.

It will then be up to Dr Van der Klaauw to convince MPs that now is not the time to increase anti-apartheid pressure on South Africa.

Shell gives a promise on oil for S Africa

280 (53) (64) (78) STAR 2/5/80

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The Star Bureau

LONDON — Shell has promised that it will not deliver crude oil to South Africa from any country operating an oil embargo against the Republic.

The oil giant's chairman Mr Peter Baxendell gave this undertaking to shareholders at Shell's annual meeting in London yesterday. There were "no circumstances" in which Shell would deliver such oil, he said.

Faced with a barrage of questions from a small group of anti-apartheid churchmen and activists, Mr Baxendell defended the company's presence in South Africa.

"Shell South Africa believes that it is a progressive and constructive element in South African society and through its contacts with government, business, academic and charitable institutions has a strongly beneficial influence towards racial harmony and social progress," he said.

The Organisation of African Unity in Addis Ababa yesterday called for a mandatory oil embargo on South Africa to help ensure that apartheid "will not roll on into the 21st century," reports Sapa-Reuter.

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Boffins' wood gas plant big fuel saver

55 RDM 26/5/80.

Pretoria Bureau

A SAVING of up to 20% of South Africa's annual liquid fuel consumption could result from widespread use in agriculture and industry of a wood-burning gas plant, which has been demonstrated at the CSIR.

The plant uses gas extracted from burning wood waste to drive a standard motor at a fraction of the cost of petrol.

It was put through its paces at the CSIR National Timber Research Institute (NTRI).

Dr H Scharfetter, assistant director of the NTRI, said that while the process was not practical for transport purposes, it had many uses in agriculture and industry, where engines on fixed mountings are used.

Wood or other organic matter — such as mealie stalks or groundnut shells — is placed in the burner, which creates a mixture of gases which pass through a purifier and a cooler before being drawn into a standard motor.

The engine can be used to drive pumps, sawmills and compressors and the gas can also be drawn off for heating water, cooking and other applications.

Dr Sharfetter said: "About 2 500 000 tons of waste wood are produced annually, which if converted into producer gas would be equivalent to 1 000-million litres of liquid fuel a year.

"It takes 2,5kg of wood to produce the equivalent of a litre of petrol. The retail price of wood is 3,6c per kg which works out at the equivalent of 9c a litre.

"The saving in liquid fuel cost could repay the capital cost of the plant within one year."

Dr Scharfetter said anybody wanting the plans could contact the Department of Agricultural Technical Services or the CSIR.

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Christie 'wanted cash for energy research'

55 RDM 27/5/80

DOCTOR Renfrew Christie approached the International University Exchange Fund (IUEF) for money to carry out research into questions relating to energy in South Africa, Captain Craig Williamson told the Pretoria Supreme Court yesterday.

Dr Christie, 30, has pleaded not guilty to seven charges under the Terrorism Act in which he is accused of having attempted to give information on South African energy schemes to the IUEF and the African National Congress (ANC).

Capt Williamson, a Security Policeman who infiltrated the IUEF, said Dr Christie asked for £200, which Capt Williamson agreed he could have and told him to contact the organisation's London office.

Dr Christie had also asked him if the IUEF would be prepared to fund his trip to South Africa, and he advised Dr Christie to draw up a memorandum and submit it to the IUEF.

Referring to the experts Dr Christie wanted to consult in Europe, Capt Williamson said one of the people mentioned in the conversation was Ruud Juisman, whose work was of a "highly anti-South African nature."

Capt Williamson read a letter by the director of the IUEF, Mr Lars Gunnar Eriksson, addressed to the director of the International Schools Association, Mr Cyril Ritchie.

In this letter, the court heard, which was sent by special courier, Mr Eriksson asked Mr Ritchie to make arrangements for payment of F3 500 to Dr Christie.

The money, the letter said, would be for Dr Christie's return airfare to South Africa and for his stay of four months in the country.

Capt Williamson said he was present several weeks later when Mr Eriksson instructed the projects officer to transfer F3 500 to Mr Ritchie.

Capt Williamson said he had also worked closely with the International Defence and Aid Fund. The aims of the organisation were similar to those of the IUEF, dealing mainly with the granting of humanitarian aid to "victims of apartheid and repressive regimes in Southern Africa."

The organisation provided legal aid for people charged under the security legislation, Capt Williamson told the court. It also had an intensive programme collecting information on South Africa, Zimbabwe and SWA/Namibia.

The trial was postponed to Wednesday to allow Dr Christie's legal team to study documents handed into court and contact various people overseas.

Earlier the court heard that one of the purposes of Dr Christie's visit to South Africa was to pass information on South African energy plants and coal mines to the ANC.

In a statement handed in to court, which was made by Dr Christie to a Justice of the Peace after his arrest last year, Dr Christie said he sympathised with the aims of the banned ANC and was in contact with Frene Ginwala, an official of the ANC, while he was in London.

Mr Justice F Eloff yesterday ruled that the second statement Dr Christie made in Johannesburg on October 26 last year could be handed in to court.

Major D le Roux, who took the statement from Dr Christie, read it to the court.

Dr Christie said he met Mr Horst Kleinschmidt in 1968 When they were students together. Mr Kleinschmidt went overseas and Dr Christie went overseas to study.

Dr Christie said he approached Mr Kleinschmidt to arrange a grant for research into the economic history on the South African coal industry since the Second World War.

He (Mr Kleinschmidt) had worked with the Christian Institute in Europe and applied on his behalf for a grant.

The grant was turned down, the statement read, but Mr Kleinschmidt made personal attempts to arrange a grant and obtained one for Dr Christie from the Catholic Committee against Famine and for Development.

The statement said Dr Christie told his friends and acquintances in London he was coming to South Africa to do this research. He said Frene Ginwala and he met in London several times after she had contacted him. He knew she was a member of the ANC.

She read his doctoral thesis and knew he was well informed on energy matters. She also knew, said Dr Christie in his statement, "that, although I was not a member of the ANC, I sympathised with its aims regarding the future of South Africa".

He said Frene Ginwala asked him to report to her on aspects of energy and power in South Africa which he agreed to do.

"She did not specify what use would be made of the information but I thought it would perhaps be boycotts.

"I am not a military expert. She did not want me to make operational assessments because I was not qualified but to send her the information," said the statement.

Dr Christie said he was aware of the potential of this information at all levels. "The decision how it was to be used was not mine. My job was research, not action, on behalf of the ANC."

The statement went on to say that it was an agreed security policy on the part of Frene Ginwala and himself that he should have as little to do as possible with members of either the ANC or the Communist Party of South Africa.

"We simply agreed that I would involve no-one in South Africa knowingly in my work on energy for the ANC and that I would send material by post to Frene Ginwala via cover addresses and that I would return to England in about November last year to discuss my findings with her in person."

The post was sent to F Brown, 126 Church Street, London SE19, and an address for C Needham which Dr Christie could not remember at the time of writing the statement, but which he said was written out in full on two envelopes which he subsequently saw in the hands of the Security Police in Cape Town.

The statement said at no stage did Dr Christie tell Mr Kleinschmidt about his plans with Frene Ginwala and he knew of no contact between them.

While Dr Christie was waiting for his study grant, he was short of money and Frene Ginwala provided him with £900 to tide him over and pay for his return trip to Europe to have discussions with her in November.

Dr Christie said in his statement he knew Mr Kleinschmidt to be vigorously opposed to the present policies of the South African Government, but to the best of his knowledge he was not a member of the ANC.

For security reasons it was agreed that Dr Christie would communicate with Mr Kleinschmidt via a covering address in Twickenham.

Dr Christie would send him quarterly financial and academic progress reports, as well as information on the South African coal industry which could be used for a variety of purposes, also possibly by boy-quarterly financial and academic progress reports as well as information on the South African coal industry which could be used for a variety of purposes, also possibly by boycott organisations.

Dr Christie said in his statement that while going through material in the Escom library he found two copies of the 1977 blueprint of the general plan for the Koeberg power station and decided to send one of these to Frene Ginwala.

He also sent her a copy of the report on how nuclear power stations were presented to the public.

The two envlopes were posted by Dr Christie at the Jeppe Street Post Office in Johannesburg.

The statement said: "I posted them to the ANC fully aware of what I was doing.

"Although if the plan of the Koeberg power station was to be used for a military operation I did not expect the power station to be blown up once the reactors were critical, but rather before completion of the station when a bomb in the pipework could destroy the quality control so that construction could be delayed for many years.

"For the power station to be attacked once it was critical would be suicide for me because I live and expect to be living in my flat just above the bay.

"I am not given to suicide and I did therefore not envisage that the plans should be used in this way, although on subsequent reflection during my imprisonment it has become apparent that the plan might have been used in such a military way."

Mr William Muller, assistant control officer in the sorting department of the Jeppe Street Post Office, said he received instructions last year from Lieut Greyling of the Security Police to look for any post addressed to C Needham in England.

On September 28 last year he found two sealed and stamped envelopes addressed to C Needham.

He handed them, unopened, to Lieut Greyling on October 1 last year. — Sapa.

Mangope's fuel plan

RDM, 27/5/80.

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Staff Reporter

VRYHOF. — The BophuthaTswana Government is investigating the possibility of a "fuel from food" scheme in a bid for more self-sufficiency in the homeland's energy requirements.

This was disclosed at the weekend by President Lucas Mangope when he opened a new giant silo at Vryhof built by the Agricultural Development Corporation of BophuthaTswana.

He said while self-sufficiency in food production remained the first priority, the government was looking at the possibility of utilising renewable agricultural resources to make the country more self-sufficient in fuel requirements.

"Towards this goal, my government is already in an advanced stage of negotiation with one of the largest groups in South Africa. I am well aware the argument that in a hungry world, the decision to use food for the production of fuel should not be taken lightly.

"If the envisaged scheme comes into operation, literally thousands of new jobs will be created. Hundreds of farmers will have a stable market; labour will be required on the farms."

President Mangope told Tswanas: "The onus lies with you to work hard to grow more maize for our developing country."

He said he had no doubt the people would develop themselves to uplift their country.

More than 500 people attended the opening ceremony, from Cabinet Ministers to farm workers.

President Mangope said he regarded the new silo as a proud monument of the people.

SAA fuel bill raised 220 pc in two years

STAR 29/5/80

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Air Correspondent

South African Airways is having to pay 220 percent more for fuel in South Africa than it paid two years ago.

This has been revealed by Mr Kobus Loubser, general manager of SA Railways and Harbours, in a talk to a group of travel agents.

"This recently forced us into a situation where we had to raise domestic fares by 20 percent and implement various tariff increases on overseas routes," he said.

"By so doing we were merely striving towards being able to balance our books this year, if the healthy growth rate we anticipate is maintained."

South Africans were not being overcharged for either domestic or overseas flights, Mr Loubser said.

Last year SAA had reached the frustrating stage of having to face an ever-increasing "pile of debt," in spite of sales targets being exceeded and operating to extremely good passenger and cargo loads.

"Despite the fact that the evolution of the jet aircraft has reached a stage where manufacturers are building super-efficient machines, from a fuel-consumption viewpoint, the average yield per passenger has declined steadily over the years."

Mr Loubser said SAA presently had 15 aircraft on order, worth a total of R256,8-million, to meet the expected demand in passenger and cargo traffic.

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FM 30/5/80 (55)

ALTERNATIVE ENERGY

Research in depth

SA is researching a wide range of solutions for energy problems, according to the 1979 Annual Report of the Council for Scientific and Industrial Research (CSIR).

Much of the work concerns electric vehicles. For the past three years the National Electrical Engineering Research Institute has been road-testing two electric vehicles, in co-operation with a manufacturer of electrical equipment and a German car manufacturer. Together the two vehicles have already done 25 000 km, at a power cost of about 1c per km, measured at present-day electricity tariffs.

Another piece of research that could become valuable for electric cars concerns sodium sulphur batteries. The National Physical Research Laboratory has made valuable progress in stabilising the molten sulphur required for these cells by absorbing it on a porous mineral called zeolite. Liquid metal-sulphur batteries can carry a higher charge density than conventional lead cells, and could one day provide an economic basis for the widespread use of electric vehicles.

Additionally, the National Mechanical Engineering Research Institute (NMERI) is investigating hybrid hydrostatic-mechanical transmissions for battery-operated vehicles. These so-called "partial hydrostatic transmissions" might eventually achieve greatly improved operating efficiencies and consequently an increase in the currently too-limited range of battery cars.

The NMERI is also engaged in an important programme for alternative fuels, from which the initial conclusions are already available. Because of the diesel fuel bottleneck, efforts have been made to find fuel extenders for diesel engines which would be compatible both with existing engines and the existing fuel distribution network without drastic changes. These restrictions imply that any fuel used as a diesel extender must be fully miscible with diesel itself.

Methanol was rejected as a possible fuel, because it requires an uneconomically large proportion of mixing aids. (Professor Richard Dutkiewicz at UCT maintains, on the other hand, that it is not too difficult to modify existing diesel engines to burn pure methanol.) By way of contrast, the CSIR has found that 20% ethanol can be blended with diesel without severe problems.

But the most promising line appears to be to blend petrol itself with dieseline. Even adding as much as 25% petrol to diesel fuel poses no problems, and would assist in adjusting the current petrol-diesel imbalance. Good progress already made with solving the problem of mixing ethanol and diesel raises hopes that ethanol could also be added to petrol-diesel mixtures. If this goal is reached, it would achieve a further saving of diesel.

Sunflower oil presented no miscibility problems when added to diesel, but the CSIR acknowledges the high cost and uncertain availability of this product. Research on sunflower oil is being pursued in conjunction with the Department of Agricultural Technical Services. But it should also be recalled that the technical problems associated with the use of a vegetable oil in diesel engines are far from being resolved.

Work on solar water heating at the National Building Research Institute concerns the development of low-cost units. Another topic under study is the reduction of corrosion of solar water heaters, which presently limits the life of most systems to periods of only three to eight years. The research under way includes the use of inhibitors to control corrosion and scale formation.

The NPLR has, in co-operation with a large mining company, established a geophysical research programme for the location of coal deposits deeply covered by other strata. These methods promise to be particularly useful in the Northern Transvaal, where the coal may be overlain by thick lava beds. The cost saving by these methods can be enormous — an area of several hundred square kilometres can be surveyed geophysically for about R20 000, while the expenditure on even one exploratory borehole may exceed R100 000.

The National Electrical Engineering Research Institute has initiated an investigation service (much in demand) for studying disturbances in the distribution of electric power to industry. Such disturbances can cause serious damage to heavy electrical equipment and concomitant financial losses. The CSIR undertakes investigations under contract to overcome these problems, making use of a mobile laboratory.

2/6/80 ARGUS

The army may be called in

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THE Defence Force is likely to be called in to protect strategic installations.

In an interview today the Deputy Minister of Defence, Mr Kobie Coetsee, said the Defence Force would now take a number of steps.

Although he declined to say definitely that the army would be called in, he did say: 'All necessary steps will be taken to see there is no recurrence.'

Mr Coetsee said he was not surprised at the sabotage but, 'it must be regarded as a statement of intention and ability.

'Various measures will now be taken and the situation will be evaluated.'

Asked whether this meant that the Defence Force would resume the role it took in the 1960s guarding strategic installations, Mr Coetsee said he did not want to detail what steps would be taken.

From Sasolburg, General Kobus Visser, head of the CID, said 'every available policeman' has been thrown in to hunt for terrorists.

Even traffic officers from nearby municipalities have been used by the SAP to seal off Sasolburg and its vicinity with roadblocks.

But, with only one terrorist seen and his race not known, the task facing police seems formidable.

Asked if he had any idea who the terrorists were or where they had come from, General Visser said:

'I have no idea. You will appreciate it is difficult. I think it would be premature to comment on that at this stage.'

Had the attack been sophisticated or successful? he was asked.

'I wouldn't say sophisticated, but you must know the lie of the land. . .'

He said no arrests as yet had been made and nobody had been held for questioning.

The Minister of Mineral and Energy Affairs, Mr F W de Klerk, was to visit Sasolburg today to examine the situation.

In an interview he said that after keeping an appointment in Cape Town he would go for 'personal inspection and discussions.'

Commenting, the Minister said: 'It appears that we are dealing here with a sophisticated and well-planned operation, witnessed by the fact that there were three preselected attacks at Sasol 1, Natref and Secunda.' — Political Staff, Argus Correspondent.

2/6/80 ARGUS

Sasol chief blames terrorists

'A PLANNED ONSLAUGHT'

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Argus Correspondent

SASOLBURG. — The sabotage at Sasol had to be seen as a carefully planned onslaught on Sasol 1, Natref and Sasol 2, the managing director of Sasol, Mr J A Stegmann, said in Sasolburg today.

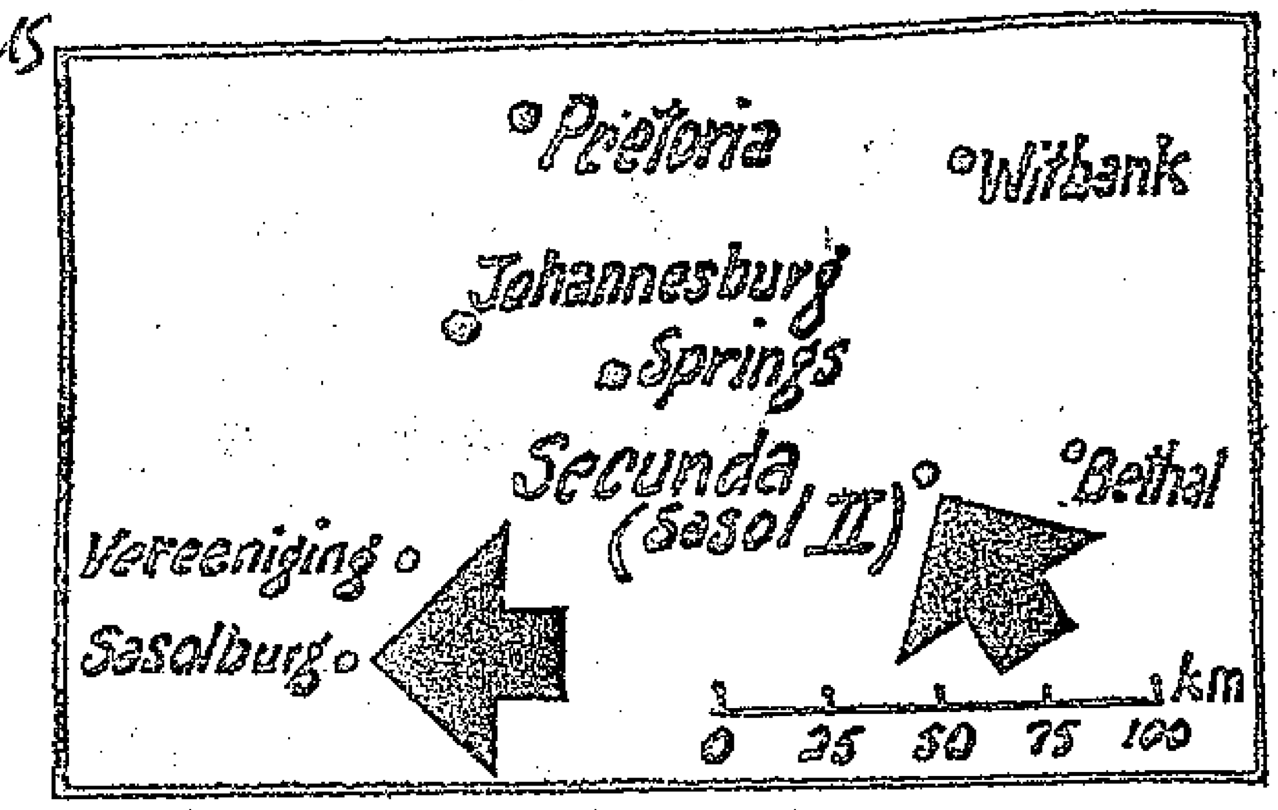
Eight fuel storage tanks were set on fire with explosives last night and six were still blazing early today but Mr Stegmann said later that only one larger and three smaller tanks were still burning.

Police quickly sealed off the town and set up road blocks last night.

Police and traffic police armed with rifles turned away all approaching cars.

A series of road blocks were put up on roads into Sasolburg as the local commando unit was called out at 3.30 am.

'There is little doubt that it was a terrorist attack. The attempt at



THE Sasol plants at Sasolburg and Secunda where blasts occurred last night.

2/6/80 ARGUS

Security checks at Milnerton refineries

SECURITY precautions at he Caltex refinery in Milerton would be examined or any loopholes after he Sasol attack, a spokesnan for Caltex Oil said in Cape Town today.

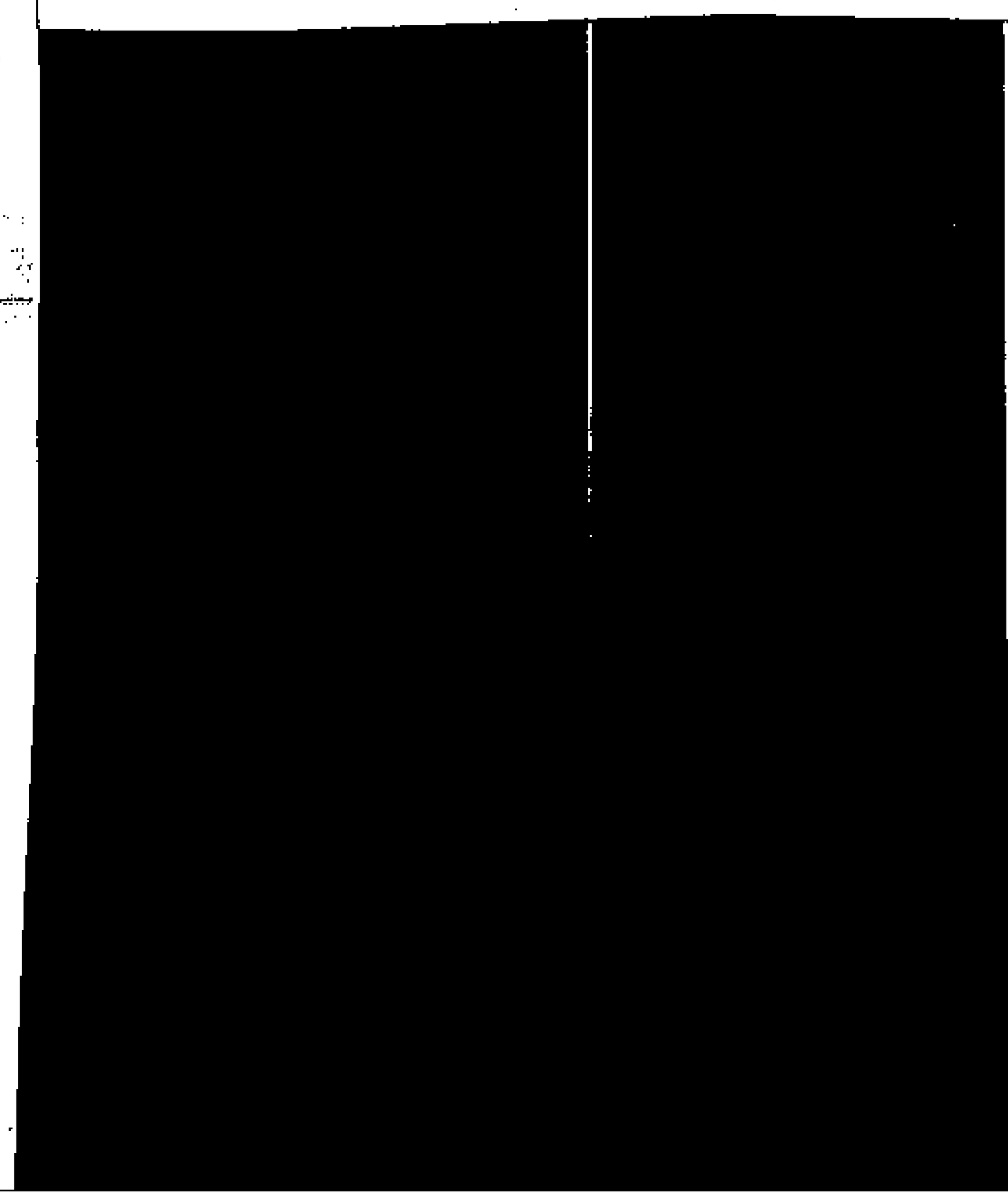
'We will take all neasures humanly posible to prevent a similar ncident at our refinery or nstallations,' he said.

'We don't know the full etails of the Sasol attack et, but we must take into ccount it could happen o us.'

Milnerton town clerk Ir J S de Villiers said the re brigade was taking iatural steps.'

A Mobil Oil spokesman aid present security ieasures at its installaions were considered adeuate. No special precauions had been taken.

A Shell spokesman said ne company had spent 'a ot of money' on protectng its staff and facilities.



'No isolated attack'

Argus Correspondent

JOHANNESBURG.— The attack on Sasol was part of a co-ordinated enemy plan and was not isolated, South Africa's new security chief said today.

Dr Niel Barnard, who took over today as director-general of the National Intelligence Service, said people could best help by not gathering in large numbers at terrorist attack sites where 'it was easy to hit them.'

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THE FURY of the Sasol fire is graphically shown as a foam-spraying fire engine continues to battle the blaze. (See Page 11.)

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City man off to fight Sasol blaze

MR RODNEY CAMP, who put out the massive Beira oil refinery fire last year, left Cape Town early today on a special flight to Sasolburg where the Sasol 1 and Natref refineries are ablaze.

He and one of his Cape Town staff are linking up with two from Johannesburg to form a specialist team, all employed by Mobil, who are known to have the best fire-fighting specialists in South Africa. They stopped the Beira fire within hours of arriving there, and they have been called on to stop fires in other African countries which have had this problem.

time, was abortive. There were no casualties in any of these attempts,' Mr Stegmann said.

Production at Sasol 1 had not been affected at all while production at Natref was also proceeding normally.

'The abortive attempt at Sasol 2 did not occur in the tank farm, as in the case of Sasol 1 and Natref, but in one of the process units.

'There is no serious damage and it will have no effect on the commissioning of Sasol 2.'

Mr Stegmann said the Sasol plants and Natref were continuously patrolled by security personnel.

Fire units

'The fire brigade of Sasol 1 was on the scene within a few minutes while that of AECI (one of the adjacent industries) came within a few minutes.

Mr Stegmann said the main objective was to prevent the fire from spreading by sealing it off.

'The explosions at Sasol 1 occurred at approximately 11.40 last night,' he said.

'At about the same time as the explosion at Sasol 1, the security patrol at Natref spotted an unauthorised person in the despatch area. The intruder was confronted after which a Natref security guard was shot in the shoulder. The suspect fled.

'Three tanks are burning at Natref. Two of the tanks containing jet fuels are still burning, while a third tank containing diesel oil was extinguished by the Natref fire brigade after about an hour. The fire at Natref is under control.'

As was the case at Sasol 1, production at Natref had not been affected and was proceeding normally, Mr Stegmann said.

Shortly after the explosions at Sasol 1 and Natref, an abortive attempt at sabotage was made at Sasol 2.

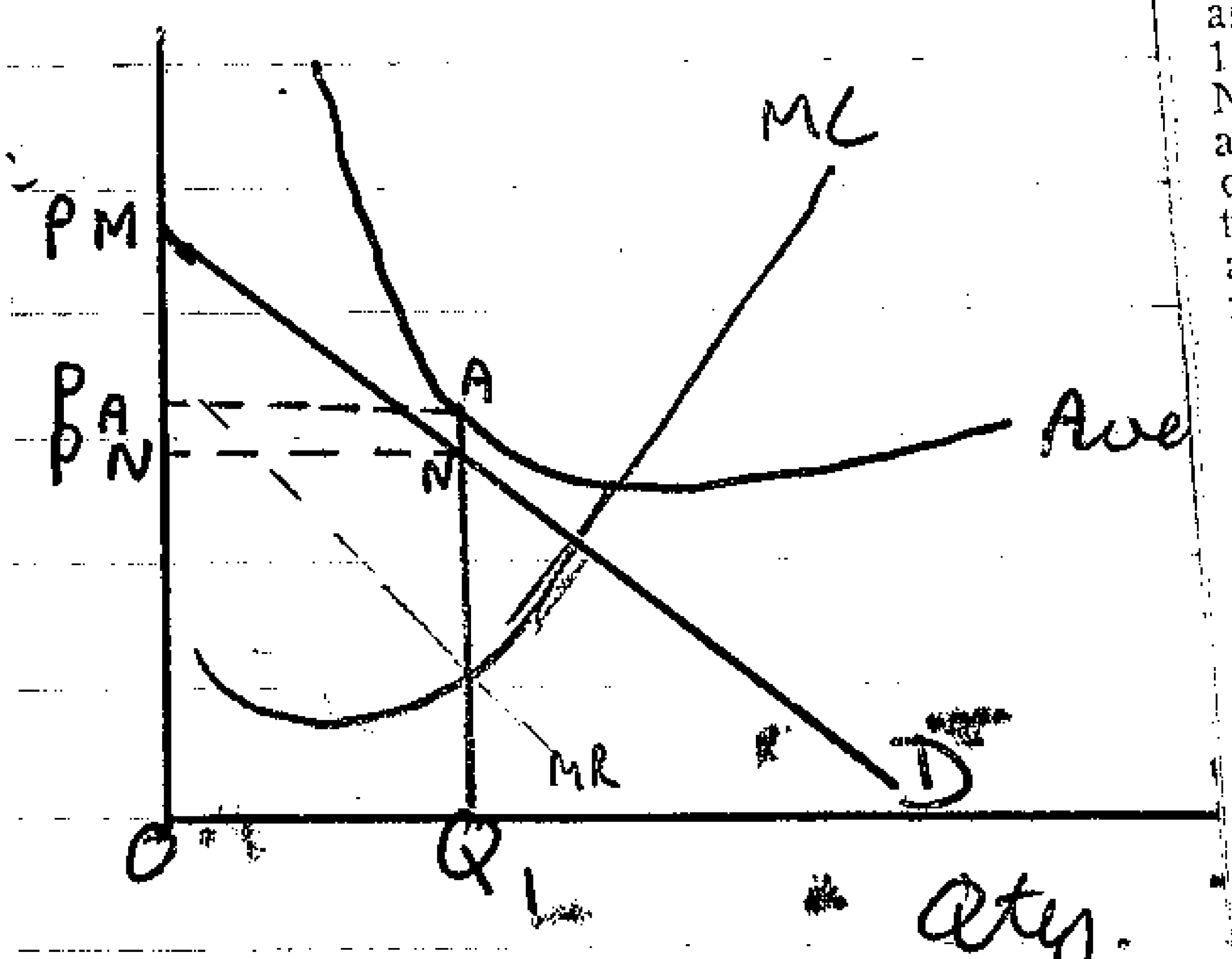
This was not in the tank farm area but in one of the process units.

'This incident at Sasol 2 will in no way affect the commissioning schedule of the plant,' Mr Stegmann said.

In a later statement he said the fire intensity at the jet fuel tanks at Natref had been reduced considerably.

'The position is well under control.

From London it is reported that the banned African National Congress of South Africa claimed responsibility today for the sabotage. — Sapa.



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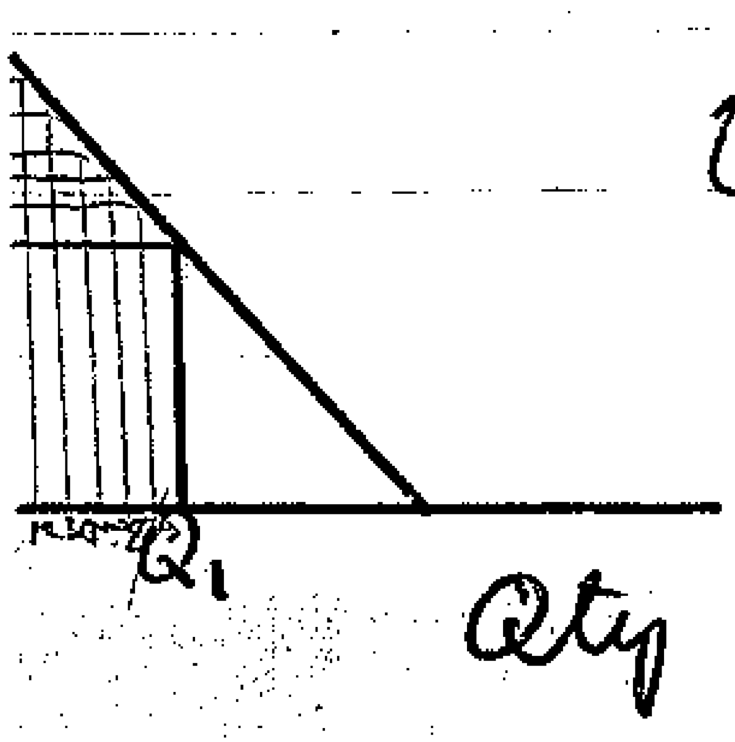

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2/6/80 ARGUS

Reef fuel supplies 'hardly affected'

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Argus Correspondent

JOHANNESBURG. — Fuel supplies to the Reef — including the supply of jet fuel — will not be significantly affected by the bombing of the Sasol plant last night.

Mr J A Stegmann, managing director of Sasol, said: 'A very small number of tanks in relation to the total number installed at Natref and Sasol have been affected by the fires.

'The supply to the Reef of fuel products and jet fuel is inlikely to be significantly affected by the incident, but the matter is being studied.

'It should be borne in mind that there are large stocks of petroleum products, including jet fuel, in tanks that have not been affected at all.'

mr Stegmann said that following the terrorist attack, security measures at Natref, Sasol 1 and Sasol 2 would be reviewed.

'They are continuously under scrutiny and it is obvious all possible steps will be taken to protect the installations,' he said.

He would not comment on where security measures had fallen down last night — 'it is not possible to comment because incidents have not yet been fully evaluated.'

REAL CAUSE

Colonel Leon Mellet, director of public relations for the SAP, said police would have to wait until the fires were out before they could determine the real cause of the explosions.

'The heat is preventing us from getting close, but we are sure they must have used heavy explosives. It is obvious also that several people were involved in this attack.

'This is surmising — there could be as many as six involved in the attacks.'

Police had meanwhile searched the area for explosives.

Life goes on around scene of chaos

By CHRIS OLCKERS

AS MILKMEN began their early deliveries at Sasolburg yesterday morning, the sky was ablaze with flames and pillars of black smoke.

Two black men pulled their trolleys past one of the many police roadblocks on their way to deliver milk. The streets were deserted. Here and there a nightshift worker stood outside his house watching the flames dance in the sky.

They ignored the drama playing itself out at the massive Sasol I and Natref plants. Firemen were battling to control blazes — with flames licking 300m into the sky — sparked off by explosives laid by saboteurs.

The drama began at 11.40 on Sunday night when the first explosion ripped through the fuel "tank farm" at Sasol I.

Soon after the second blast in the attack — at the Natref refinery 4km away — the Sasol I switchboard was jammed with anxious callers from Vanderbijlpark and Vereeniging.

At 3.30am came a rude awakening for scores of Commando unit members who were told to report to the scene of the fire immediately with their rifles.

When the tank caught fire very little could be heard outside the perimeter of the plant.

Apart from the officials who were telephoned with news of the attack, the people of the town slept unaware through the inferno.

Mr Clarence Keyter, of the Sasol I public relations staff, who lives less than 5km from the plant, was one of the plant officials whose sleep was only interrupted when news of the first explosion reached him.

"I heard absolutely nothing. I didn't wake up until the phone rang and I only realised how serious the situation was when the second explosion went off as I left home," he said.

Nearby residents said they heard a handful of small explosions just before midnight. Then about 10 minutes later their houses were suddenly walloped with a series of thunderous explosions.

"It was like watching a nuclear bomb going off in the movies," said Mr Hennie van Rensburg, who was walking home from a late shift. "I almost passed out."

Sasol employees said they had been expecting an attack on the complexes because of their critical importance to South Africa, whose oil imports have been severely limited since post-Shah Iran joined an Opec ban on oil sales to the country.

"We have been living close to the line for a long time, just waiting," said Sasol engineer Mr Jan Snyman. "We knew it was only a matter of time before the terrorists attacked us."

Terror tactics warning by new NIS boss

Pretoria Bureau Chief

SUNDAY night's co-ordinated attacks on South Africa's important fuel-from-coal installations should not be regarded as isolated incidents but in the context of a broader revolutionary strategy, Dr Niel Barnard, the youthful Director-General of the National Intelligence Service (NIS), said in Pretoria yesterday.

Dr Barnard was addressing Pressmen on the first day of taking office as head of NIS.

He was unsmiling throughout the 45-minute session, and gave the briefest of glimpses into his philosophy on national intelligence.

He said the attacks at Sasolburg and Secunda were typical of terrorist tactics, which were aimed at being unpredictable. The more unpredictable such attacks were, the more effective they were.

"We must not delude ourselves that these were sporadic incidents. They must be seen as part of a broader strategy."

Dr Barnard, 30, whose appointment last November came as a surprise and stirred controversy, succeeds Mr Alexander van Wyk as head of NIS, formerly known as BOSS and DONS. General Hendrik van den Bergh was head of BOSS before Mr Van Wyk.

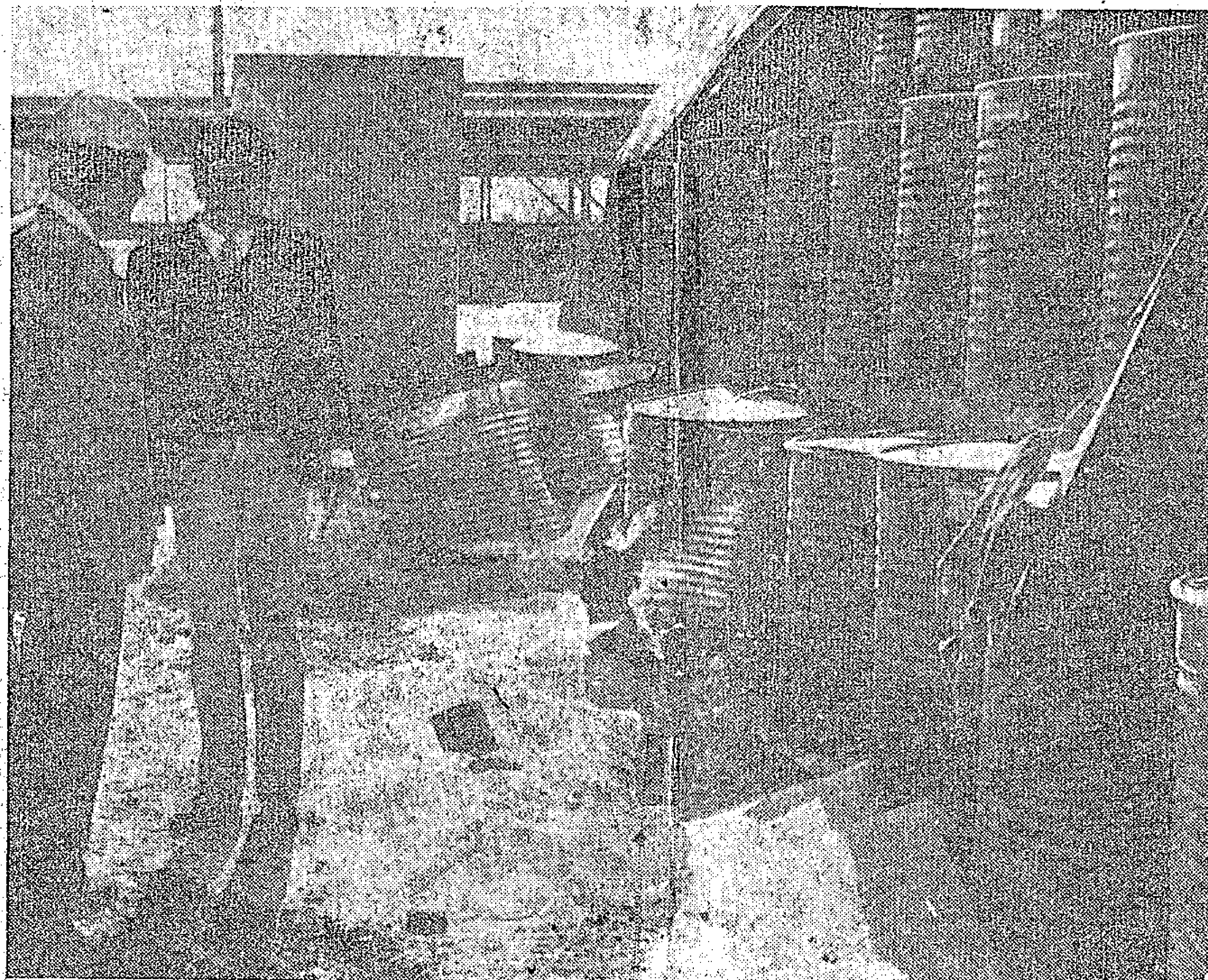
Dr Barnard said NIS was not aimed at any political party — the Nationalists, the Progressive Federal Party or the Herstigte Nasionale Party.

He said the danger to South Africa's internal security came not only from the ultra-Left but also from the ultra-Right.

His service was essentially an intelligence-gathering organisation, whose role was to advise the policymakers of the country.

Regarding intelligence contacts overseas, Dr Barnard said South Africa was not regarded as a black sheep in every instance and contact was maintained with certain countries, "although I do not want to go into details".

Before taking up the NIS appointment, Dr Barnard was head of the Department of Political Science at the University of the Free State in Bloemfontein.



A Sasol official and a Rand Daily Mail reporter at the site of the abortive attempt to ignite the Sasol II plant at Secunda. Five drums of non-inflammable chemicals were ripped open in the blast while a second explosion damaged a pipe carrying reactor gas.

Picture: NOEL WATSON

Sasol II escapes damage

Staff Reporter

SEVERAL damaged 220 drums and depressions in the ground were the only evidence of the abortive sabotage attempt at Secunda yesterday.

The drums, which were stored under a tarpaulin alongside a block of toilets, contained a non-inflammable water-purifying chemical.

The white-powdered chemical lay strewn around the drums — less than 15m from a section of the Sasol II purification plant.

A spokesman said seven explosions were heard in quick succession at 12.20am. He said it appeared as though delayed time explosives had been placed in two places — at the drums and on a pipe carrying reactor gas — 200m apart.

"Damage is too negligible to estimate," he said. "The explosions took place in the processing unit and not in the 'tank farms'. They probably thought the drums contained inflammable material".

The spokesman added that one of the explosions was caused by a short-circuit in electrical cables near the drums. "Two power conductors were thrown together by the blast," he said.

Opposition in call for urgent security probe

CAPE TOWN. — The Minister of Mines and of Environmental Planning and Energy, Mr F W de Klerk, said yesterday it was clear the Sasol attacks were of a sophisticated nature.

And the opposition called for an urgent probe into security arrangements at strategic installations.

Mr De Klerk said he hoped the incident would place beyond all doubt the fact that South Africa had to face an organised assault aimed at causing damage and disrupting stability and order.

He said he was thankful that damage was apparently limited. "It is good news that production has not been affected."

The Minister of Police, Mr Louis le Grange, said the police were busy with a thorough investigation into the blasts.

He said all the necessary steps had been taken at the sites of the explosions. The police and other Government organisations were investigating the matter.

"The police investigation must now take its normal course. I cannot say more at this stage," Mr Le Grange said.

The Leader of the Opposition, Dr Fredrik van Zyl Slabbert, said the events at Sasol pointed to a sinister and disturbing development.

"I deplore all forms of violence and terror as it simply increases misery and suffering and leads to the hardening of attitudes on all sides.

"We must all make every effort to bring about acceptable and peaceful constitutional change so that events of this nature will be undercut and disappear completely from the South African way of life," he said.

The leader of the New Republic Party, Mr Vause Raw, said the attacks were an inevitable development of the urban terrorism campaign.

He said he supposed one had to expect such a development at some time on some major installation.

"The Rhodesian precedent was an obvious pointer. What concerns me is the apparent lack of effective security. The whole aspect of security at strategic installations will have to be reviewed."

His call was echoed by the Progressive Federal Party's spokesman on industry, commerce and consumer affairs, Mr John Malcomess.

He said the Government should, as a matter of urgency, review security arra[illegible]ents at all installations of [illegible]onal importance.

The fact that people could break into three major fuel installations at the same time on the same night was indicative of inadequate security arrangements, he said.

One successful attempt could be written off as bad luck but three successful attempts could only mean bad security, Mr Malcomess said.

"I call on the Government to investigate security arrangements at all installations of national importance."

He said the investigation should be carried out by experts as a matter of urgency.

Mr Nigel Wood, the New Republic Party's chief spokesman on energy affairs, also agreed, saying the attacks had highlighted the vulnerability of the country's fuel-producing installations.

Mr Wood said the vulnerability of synthetic fuel installations would be even more pronounced at Sasol II and III "where two huge plants are in close proximity". — Sapa.

'Never 100% security'

By CHRIS MAR

IT IS almost impossib[illegible]o-tect an oil refinery [illegible] at-tacks by distantly-l[illegible]ed weapons like rockets, although every step is done to prevent access to the refinery area itself.

Yesterday, Mr Keith Bewick, spokesman for Caltex Oil, told the Rand Daily Mail that although every effort was taken to prevent acts of sabotage to refineries, there was never 100% security in any plant.

Caltex, main company in the consortium supplying fuel to Jan Smuts Airport, said the airport had not been affected by the immense damage caused to the oil plants in the Transvaal on Sunday.

Mr Bewick said the most vulnerable part of any oil refinery was the processing plant.

"But it would take someone with a good knowledge of the processing area to knock it out," he said.

Meanwhile the 'Mail's' Cape Town correspondent reported that security arrangements are to be implemented immediately at oil company installations in the Cape.

This was decided after a meeting between oil company representatives and security organisations, called urgently in Cape Town yesterday after the explosions.

Inferno damage is R5 800 000

DAMAGE at the two Sasolburg fuel plants is estimated to be about R5 800 000, according to the managing director of Sasol, Mr J A Stegmann.

Fuels — including aviation fuel — worth an estimated R4 300 000 were ablaze at the Sasol I and Natref installations yesterday morning.

Mr Stegmann said yesterday only minimal damage was done at Sasol II at Secunda in the Eastern Transvaal.

Damage to five tanks at Sasol I was less than R1-million and damage to the three tanks at Natref amounted to less than R500 000, he said.

The petroleum products ablaze included aviation fuel worth R2 500 000 at Natref and petrol worth R1 800 000 at Sasol I, Mr Stegman said.

He said the situation was under control and there had been no interruption in production.

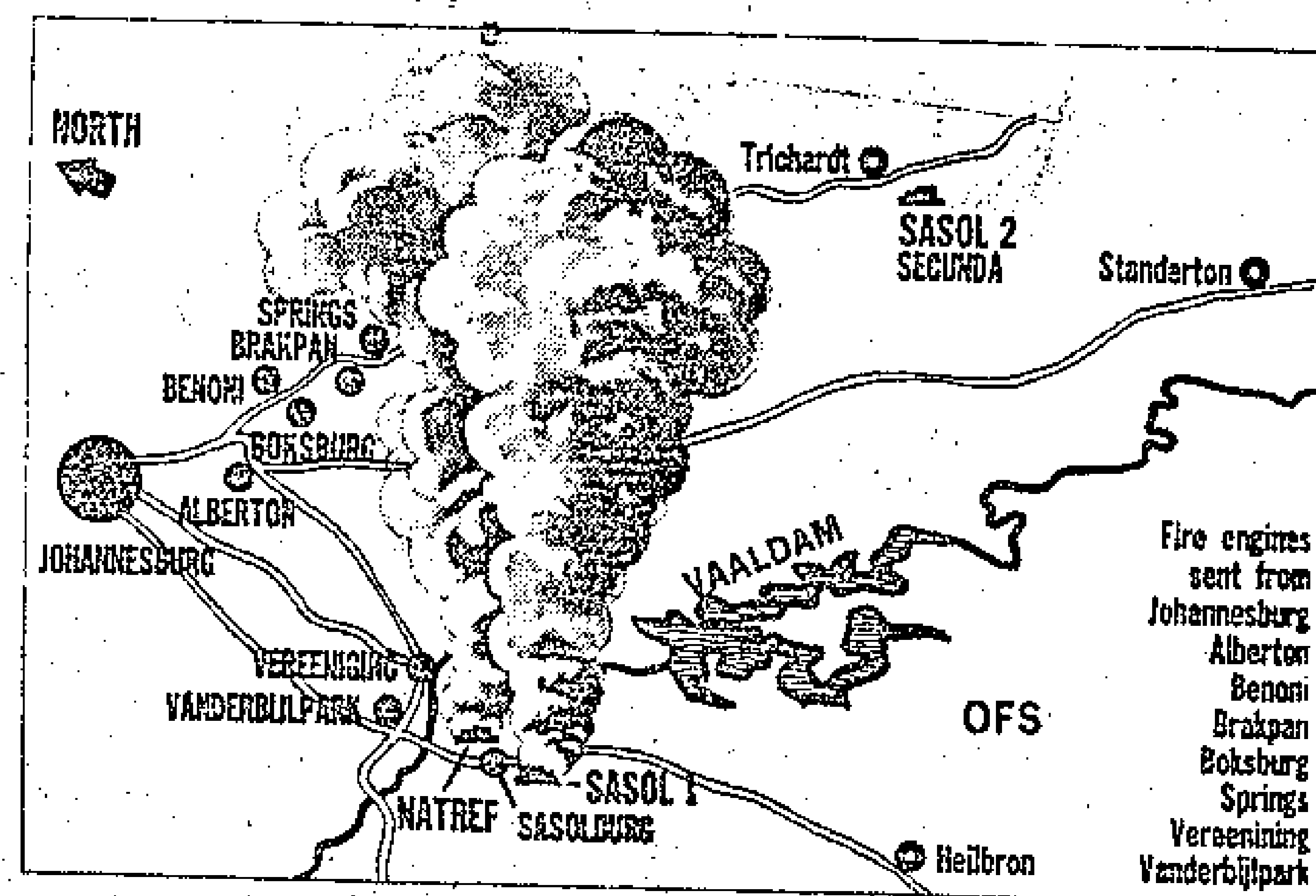
Seven storage tanks were still alight in the morning and flames were still visible hundreds of metres high in the sky.

Roads in the vicinity of the two plants were closed and motorists had to use alternative routes.

At least 20 fire engines from Sasolburg, other towns in the Vaal Triangle and the Witwatersrand were still fighting the blaze.

In Pretoria, a police spokesman said explosions occurred at the Sasol II plant at Secunda at 1.30am yesterday.

Colonel D J Coetzee, of the Police Directorate of Public Relations, said the reactor at the main project was damaged. — Sapa.



Site of the Sasol and Natref infernos.

(55) 3/6/80

Russia, Africa furious at tour

By IAN HOBBS
London Bureau

LONDON. — British sports officials believe the Russians will give unprecedented support to sanctions that African states plan to introduce because of the British Lions rugby tour of South Africa.

The Supreme Council for Sport in Africa (SCSA) will announce details of its plan of retaliation against Britain on August 3 — the day the Moscow Olympic Games, or what there will be of them, end.

The Daily Telegraph of London said at the weekend that Russian fury and desire for retaliation was so great that it will take 10 years for international sport to recover.

The Telegraph confirmed reports first published by the South African morning group of newspapers that, in agreement with the Russians, the Africans have delayed implementing their programme against British sport until August 3.

The paper said it had been informed by a British athletics official that "all hell will break out" after the Games.

The SCSA, which has been completely reorganised and will almost certainly be offered unlimited financial backing by Moscow, is determined to ban all British sportsmen from the continent and have Britain kicked out of the 1982 Commonwealth Games in Brisbane, Australia.

A senior official of the SCSA said that under their new secretary-general, Mr Amadou Lamina Ba of Senegal, they were achieving unity in their programme of action against British sport as part of their effort to prevent the Springboks from breaking out of isolation.

He said that if the Olympic Games Association failed to expel Britain from the 1982 games, they would have enough Third World and South American support to destroy the games.

British sports officials don't want to be named at this stage because they are trying desperately to placate the Africans. But they say the British sports council report favouring an end to the isolation of some Springbok sports so outraged Africa that there was now no chance of preventing a breakdown of sporting relations, which will come on top of any action the Russians themselves take.

He might be small, but he sure is a big hit with the ladies. When British pop star Leo Sayer arrived in Johannesburg yesterday, there was no holding back the autograph hunters. These three lovelies, from left, Elizabeth Booth, 18, Anna-Louise Nel, 18, and Maranda Janse van Rensburg, 19, were among his luckier fans who managed to get the prized signature.

Picture: TREVOR SAMSON

Snub of SA diplomat stirs up the Tories

(16) RDM 3/6/80.

London Bureau

LONDON. — The new Lord Provost of Glasgow has been accused of turning his position as the city's first citizen and Queen's representative into a political outlet for the hardline Labour-controlled council by snubbing the South African Consul-General, Mr Johnny van Rensburg.

Upon his appointment as civic leader, Dr Michael Kelly made it clear he would abide by the Whip of the council's Labour group and immediately refused to meet any representatives of the South African Government.

This severing of civic ties with the South African Consul-General in Scotland is seen by Dr Kelly's critics as the beginning of a significant politicising of his post and may well damage the city's important trade links with South Africa.

His decision, taken "in consultation" with the Labour group, will also mean that as the Lord Lieutenant of Glasgow he is boycotting a government which has sought diplomatic recognition and status.

The row started when Dr Kelly wrote to Mr Van Rensburg telling him not to pay the traditional courtesy call to the city chambers in Glasgow.

In his letter, the lord provost said: "Until there is a significant improvement in human rights in South Africa, I will prefer not to be asked to receive either yourself, your ambassador or any other representative of your government."

On Sunday, Dr Kelly defended his decision and denied that there was any tradition of non-politics in his job. He said: "I think I am representing the city's view against apartheid. It was my decision but I am a member of the Labour group which voted me into office.

"The role of our provost does have a political aspect and as the civic head I will continue to remain above party politics in the carrying out of certain civic duties."

In his reply, Mr Van Rensburg said: "Strong ties and contacts exist between South Africa and Scotland in general, and Glasgow in particular. Because of the high export trade to South Africa, especially in certain industries, the jobs of thousands of workers in Glasgow and the whole Strathclyde region would be in jeopardy if these ties were to be cut.

"On the other hand, closer contact and an increase in trade could do much for the prosperity of Glasgow and could ease the serious unemployment problem further."

In the last 12 years, the Glasgow Chamber of Commerce has sent five trade missions to South Africa and received a similar number in return.

The chamber's chief executive, Mr Matthew Neil, said of the trade: "We regard it as important and we have a great many links. We realise South Africa is important and particularly as a source for our industrial raw material investment."

Dr Kelly's view is different from the one taken by his predecessor, Mr David Hodge, who was expelled from the Labour group after rows over civic receptions for South African Government representatives.

The leader of the Conservative group, Mr William Aitken, said: "It is unfortunate indeed that we have a lord provost who is a puppet of the Labour group.

"I think he is allowing his political viewpoint to colour his attitude to his duties as the city's first citizen. His attitude is hardly likely to increase trade with South Africa and will not improve the employment situation."

Truman feared A-bomb — diary

Own Correspondent

NEW YORK. — A newly-discovered diary kept by the late President Harry Truman discloses his deep concern over the atomic bomb that was to be dropped on Hiroshima in 1945.

He penned his feelings about the weapon at the Potsdam Conference a week before it was used against Japan.

In a July 25, 1945, entry, President Truman wrote: "We have discovered the most terrible bomb in the history of the world. It may be the fire destruction prophesied in the Euphrates Valley era, after Noah and the fabulous ark."

He went on: "This weapon is to be used against Japan between now and August 10. I have told the Secretary of War, Mr Stimson, to use it so that military objectives and soldiers and sailors are the target and not women and children.

"We will issue a warning statement asking the Japs to surrender and save lives. I am sure they will not do that, but we will have given them a chance."

The bomb was dropped on August 6, killing more than 100 000 people.

Mr Truman added: "It is certainly a good thing for the world that Hitler's crowd, or Stalin's, did not discover this atomic bomb.

The diary was recently discovered among papers at the Truman Library in Independence, Missouri, by historian Robert Ferrell, who said it was clear that Truman was more concerned about the effects of the bomb than historians had believed.

'Police killed my brother'

Court Reporter

A WEEPING woman yesterday accused two policemen of the Brixton Murder and Robbery Squad of murdering her brother.

Mrs Dawn Francisco, 34, of Alberton, was giving evidence before Mr Justice Coetzee in the Rand Supreme Court where she appeared with Mr Reginald du Toit, 38, on a charge of armed robbery, alternatively conspiring to commit a robbery. They pleaded not guilty.

It was alleged that they had conspired with Mr Clive Becker to commit the robbery and that they had shared the stolen money of R205 618.

At a previous hearing, the court was told Mr Becker had been a security guard for the firm, Securitas of South Africa (Pty) Ltd. On November 2 last year he forced a fellow security guard at gunpoint to help him load the money, which they were delivering from the security van onto a small truck.

Lieutenant H le Grange, of the Brixton Murder and Robbery Squad, told the court that after Mr Becker was arrested on January 4, he was taken to the Klipriver during the night to point out the money boxes which, Mr Becker said, he had thrown into the river. While the police were trying to find the boxes, Mr Becker tried to escape and drowned, he said.

Mrs Francisco told the court she could not believe that Mr Becker had drowned in the Klipriver. He had been a lifesaver and a strong swimmer she said.

When she told the Brixton Police she could not make a statement, she was told that unless she did so, she would see no one and her children would be placed in a home.

"My brother was dead. He had been murdered by them, by Lieut Le Grange and Lieut Pre torius. I did not know if Mr Du Toit was dead as well. I made a statement. You don't argue with Brixton. You just do what they tell you to do. If I hadn't made a statement, I wouldn't have come out of it alive. I was petrified," she said.

"I told them what Clive had told me. They were not satisfied with that. They wanted a story to suit themselves. didn't talk, the captain just carried on writing. He carried on making my statement for me. I was told to sign. I just signed", she said.

The hearing continues today.

Till, said yesterday had not received from people who the plan.

Sheilas get chauvinists frothing

Own Correspondent

ADELAIDE. — The world's longest bar and the last bastion of hard-drinking Australian men has fallen prey to women's lib.

There were cheers and jeers as the first woman in 85 years ordered drinks at the bar in the Working Man's Club in Mildura this week.

The Guinness Book of Records recognises the bar as the longest in the world.

The first woman to have a drink was local resident Mrs Ann Cummins, who just pipped Mrs Kathy Rudd, a visiting Adelaide housewife.

Their arrival was greeted by an angry exodus of about 50 protesting men.

Several asked to see a copy of the club's constitution.

The club's decision to open the bar to its 4 200 women associate members and their guests was the second shock in a short time for those determined to uphold the chauvinist tradition.

Recently, attractive Miss Barbara Macaskill, 23, was employed as the first barmaid in the club's history.

Reaction among the club's 8 000 male members to the sudden changes have been mixed.

Said one: "No bloody way. It's bad enough with sheilas behind the bar."

FOOTNOTE: The T-shaped bar has 27 taps and it is a brave man who attempts a "tap crawl" — having a beer from each.

SA rally cre on best in

By LEICESTER SYMONS
Motor Editor

THERE will be two South African crews, taking on more than 100 from all parts of Europe, in the Scottish International Rally that starts on Saturday and finishes on June 10.

Sarel van der Merwe and Franz Boshoff, the reigning South African champions and leaders in the 1980 series, will be driving a Ford Escort RS. Kassie Coetzee and Vic Deiner, who drive a Toyota Corolla in South Africa and are lying third in the current national rally series, will drive one of the new Talbots.

It will be the second of at least three planne forays for Van der Boshoff this year, w cort rally car built competitions dep Port Elizabeth. It Britain before the r International Rally ing there for them the world champi Rally of Great Br vember.

They are hoping fortune in Scotlan had in Wales, wher ential failed only 5 first special stage. of those things you in motor sport, but it will happen again

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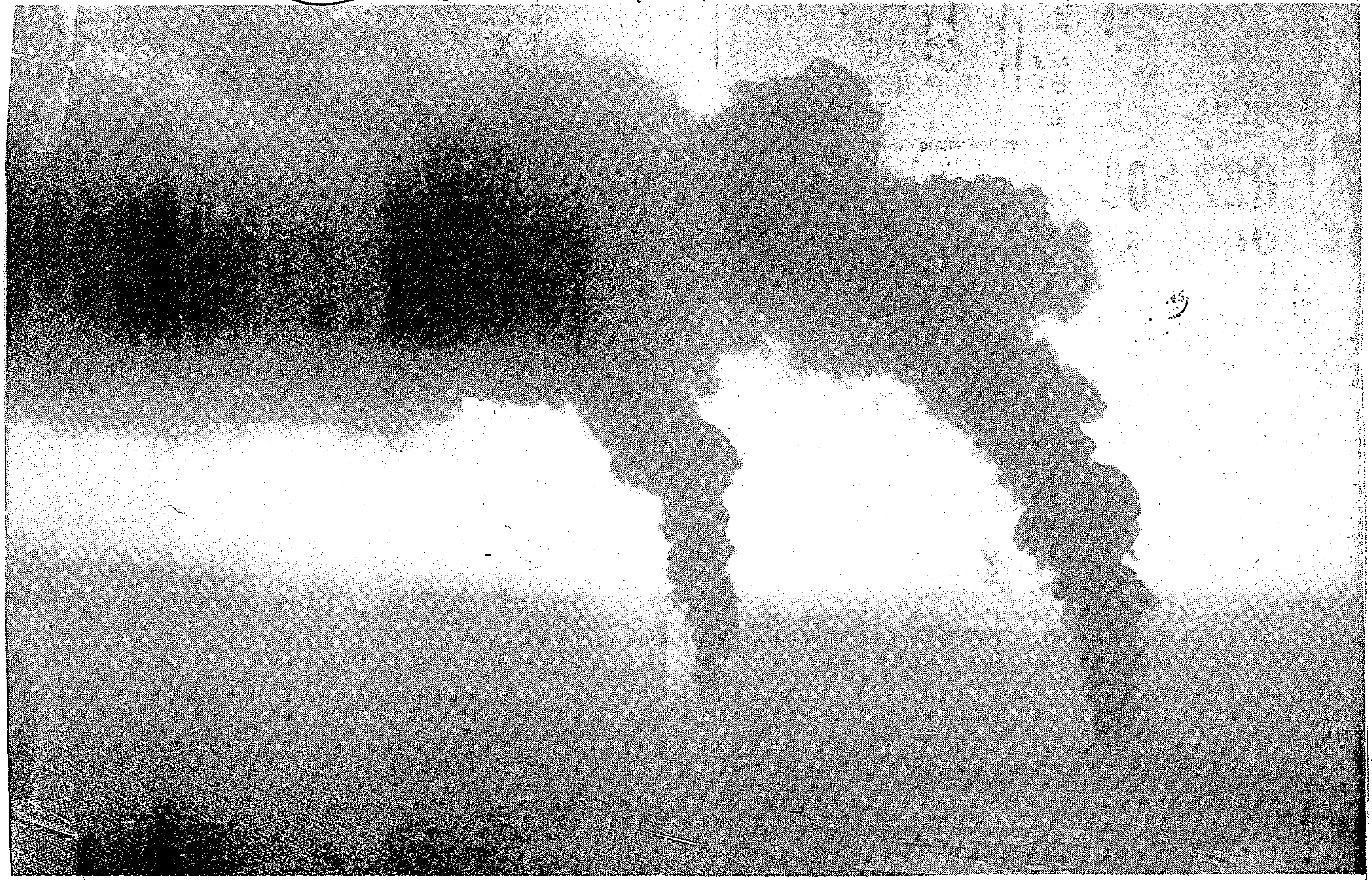
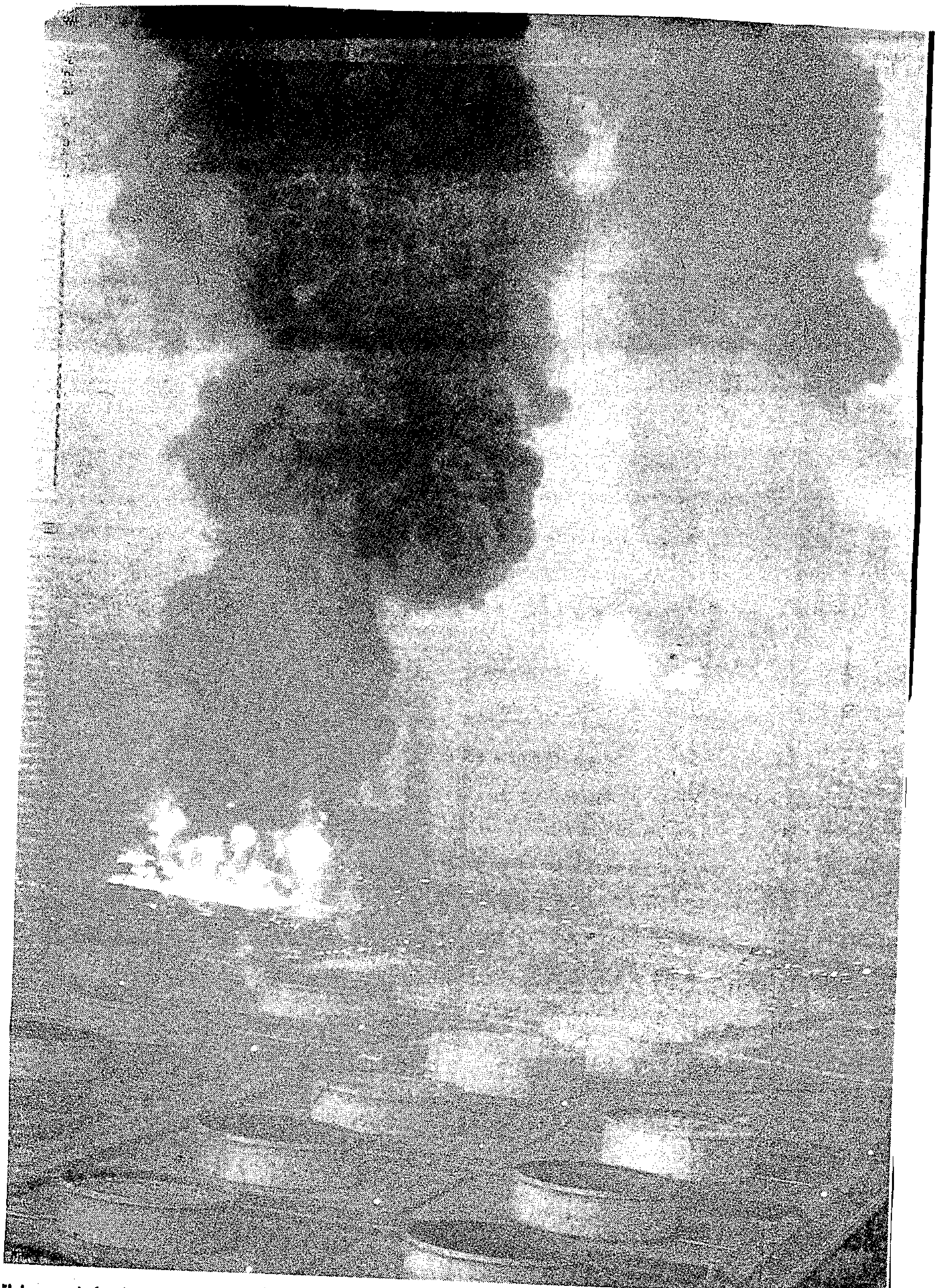


An aerial photograph taken at dawn yesterday shows the trails of black smoke rising more than 4000m into the air above Sasolburg, standing out in sharp contrast against the first rays of light.

SASOL SABOTAGE

Balls of fire leap into the smoke-blackened sky from the massive rectangular storage tank at the Sasol One refinery just before dawn yesterday.



'his aerial photograph pinpoints the two blazes. In the foreground is the rectangular Sasol fire, with the larger Natref blaze behind.

Pictures: ROBERT BOTHA

FIREMEN DWAR[illegible] BY A MOUNTAIN OF FLAMES AS A REFINERY BLA[illegible]

Firemen pictured challenging a wall of [illegible] ... to be under control — there was no danger of [illegible]

Another Sasol sabotage attempt

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STAFF REPORTERS

THREE more bombs were yesterday planted at a Sasol-linked organisation — this time at the headquarters of the American consortium which is building Sasol Two and Sasol Three.

The latest sabotage attempt came within 16 hours of the explosions which ripped through the Sasol One and Natref refineries in Sasolburg — blasts which sparked off huge blazes and caused about R6-million in damage. An unsuccessful sabotage attempt was also made on Sasol Two at Secunda.

An intensive manhunt was still underway last night for the saboteurs. The chief of the South African CID, General Kobus Visser, has taken charge. Security Police officers are aiding his men and a special police task force has moved into the Vaal Triangle.

The Springs plastic explosive bombs were disarmed after two schoolboys saw one of the devices at the old Springs town hall which now serves as the headquarters for the American consortium, Fluor.

Within minutes police evacuated shops, a hotel and a section of the street facing the building.

One of the bombs was defused mere minutes before it was due to explode. Horrified onlookers watched as the defused bomb slid off the rope being used to lift it from a ledge and rolled into the street.

The banned African National Congress yesterday claimed responsibility for the Sasolburg blasts and the sabotage attempt at Sasol Two.

Raging fires which had swept the Sasol One and Natref plants were brought "fully under control" by 6pm yesterday. Flames were dying but pillars of smoke were still rising from the blast sites.

Four hundred firemen from plant, factory, Vaal Triangle and Reef town brigades — and a crack firefighting team from the South African Air Force — were called in to quell the inferno.

A Sasol spokesman, paying tribute to them, said they had averted what could have been a major catastrophe.

Early yesterday R4 500 000 worth of aviation fuel and petrol was ablaze — making the fire the biggest in the history of South Africa. Damage to the fuel tanks at both installations was estimated at R1 500 000.

A Sasol spokesman said last night that the danger of the blaze spreading had been "virtually eliminated".

In Cape Town yesterday oil company representatives called an urgent meeting and decided to immediately enforce additional security arrangements at Cape installations. Details of the arrangements could not be divulged, a spokesman said.

The Minister of Police, Mr Louis le Grange, said last night the Springs bombs were clearly the work of the ANC and the South African Communist Party.

Mr Le Grange said the admission by the ANC and the SACP that they were responsible for the sabotage at Sasol came as no surprise to the South African Police.

"For some time the police have known that terrorist insurgents have received specific orders and instructions from Joe Slovo, a South African communist, in Maputo.

"The placing of Joe Slovo in Mozambique is a well-considered plan of the SACP and the ANC to bring him as close as possible to the Republic from where he can exercise easier control over terrorists directed against the Republic."

Editorial comment — Page 8. Other reports, pictures — Pages 2, 3, 9

Mr Le Grange said the Russian Ambassador in Lusaka, Dr Solodovnikov, played an important role in the planning of ANC and communist strategy, and he was assisted by a South African refugee woman, Frene Ginwala.

"No stone will be left unturned to bring these terrorists to book and to ensure the internal security of the Republic and all its people," he said.

In other devlopments:

- The sabotage will be debated for half an hour in the House of Assembly today, and
- The United Nations Security Council will meet in New York tomorrow to consider the unrest in South Africa.

3/6/80 ARGUS

Boys find 3 more bombs at Sasol HQ

257 218 55

JOHANNESBURG. — Within 15 hours of explosions ripping through Sasol 1 and the Natref refinery complexes in Sasolburg, sparking off huge blazes causing about R6-billion damage, there was also an unsuccessful attempt to ignite Sasol 2 in the Eastern Transvaal.

An intensive manhunt is underway for the saboteurs, who, with military precision, executed the biggest single African National Congress attack so far. A special police task force moved into the Vaal Triangle area after the explosions.

SAW DEVICES

The Springs bombs, made from plastic explosives, were disarmed after two schoolboys saw one of the devices at the old Springs Town Hall, which now serves as the headquarters for the American consortium Fluor.

Police within minutes evacuated shops, a hotel and a section of the street facing the building.

One of the bombs was defused minutes before it was due to explode — and horrified bystanders watched as it slid away from a policeman who was using a rope to gingerly lift it from a ledge. The device rolled down the street for a few moments.

The outlawed ANC has claimed responsibility for the Sasolburg blasts and the sabotage attempt at Sasol 2.

UNDER CONTROL

Raging fires — with flames leaping hundreds of metres into the sky — at the Sasol 1 and Natref plants were 'fully under control' by 6 pm yesterday.

Four hundred firemen from the plants, local factories, Vaal Triangle and Reef towns, and a crack firefighting team from the South African Air Force, were called in.

About R4,5-million worth of aviation fuel and petrol went up in flames, making the fire the biggest in the country's history. Damage to the fuel tanks at both installations was estimated about R1,5-million.

One of the three fires in tanks containing diesel oil was extinguished about an hour after the incident took place.

Fires in the four smaller tanks at Sasol 1 had been extinguished, while those in the two larger tanks had 'for all practical purposes been virtually extinguished', a Sasol statement said.

'Production at Sasol 1, Natref and Sasol 2 has not been affected and is proceeding normally,' the statement added .— Sapa.

Sasol security debate likely tonight

Political Staff

OPPOSITITION parties are extremely concerned about security measures at Sasol and Natref — the target of terrorist attacks on Sunday night — as well as other strategic installations.

The issue of adequate protection of the two petroleum installations is likely to be the focal point of a special half-hour debate in Parliament tonight.

Mr John Wiley, MP, leader of the South African Party, who gave notice of the debate yesterday, said he had moved a motion for the debate gecause he was concerned about security measures taken not only at Sasol and Natref but also at other strategic installations.

Meanwhile spokesmen for the Progressive Federal Party and the New Republic Party have called for full investigations into security measures taken at the two plants.

DISTURBING

Mr Harry Schwarz, MP, PFP spokesman on defence, said that on the released information his party found the security measures 'most disturbing.'

It appears that it was easy for the attackers to breach the security fences and there was no indication of any type of electronic alarms.

Sasol is a national asset and needs to be properly protected.

Mr Schwarz said the questions raised could be answered only by a full investigation.

Mr Schwarz and the NRP spokesman on police matters, Mr Brian Page, found it extremely strange that the surname of the black nightwatchman who was shot was not even known.

REASSESSMENT

Mr Page said a full investigation was required as well as a 'calm reassessment of the protection of strategic installations'.

'There is no shadow of doubt the security has to be tightened up. I think the Government should be thinking in terms of deploying national servicemen and citizen force troops to protect such installations.

'We have to look to preventive measures. People must be aware that urban terrorism is not only part and parcel of life in the world but has also become so in South Africa.'

Sabotage is blamed on small gang

55

RDM 4/6/80.

Staff Reporters

PARTS of the limpet mines used by saboteurs to set off the Sasolburg fires on Sunday indicate that the explosives were of Russian origin, according to the deputy chief of the Security Police.

Brigadier J A du Preez yesterday said his men had found parts of limpet mines at the Sasol 1 and Natref plants in Sasolburg and at the scene of the attempted attack on the Sasol 2 plant at Secunda in the Eastern Transvaal.

He said police had established that a small group of men were involved in the three attacks.

"If not one then two could have been involved in each attack. Tracks we found indicate that there was one man involved in each attack at Sasolburg.

"There is no indication of how many people were involved at Secunda.

"It appears that all three attacks as well as the attack at Springs were organised by the same group," he said.

The night attacks — the largest act of sabotage ever in South Africa — caused about R5 800 000 damage.

On Monday afternoon police defused three bombs at the Springs headquarters of the American consortium, Fluor, which is building Sasol 2 and 3. The bombs — made from plastic explosives with timing devices attached — were defused after two schoolboys spotted one on the pavement outside the Fluor office.

A Sasol spokesman said yesterday the fires at Sasol 1 and Natref had finally been extinguished. A fire in a tank of butadiene — used in the manufacture of synthetic rubber — was still smouldering, but there was no danger of another blaze.

"In answer to questions about security measures at Natref, Sasol 1 and Sasol 2 the assurance has been reiterated that it is continuously under scrutiny and it is obvious that, as in the past, so also in the future all possible steps will continue to be taken to protect the installations," he said.

"Sasol 2 and Natref are back to normal."

He said the Sasol security guard — identified only as Robert — who was shot in the shoulder when he approached an intruder at the Natref refinery on Sunday night was in a satisfactory condition yesterday.

(S)

SASOLS VERRYS IN VSA

Ander lande stel baie belang

Van PIETER SCHOOMBEE

BAIE lande hou Sasol se tegnieke fyn dop, veral na die krisis in Iran, sê mnr. Joe Stegmann, besturende direkteur van Sasol. RAPPORT het hom genader oor die nuus dat Amerika nou Sasol-fabrieke gaan bou.

Die Fluor-maatskappy bemark volgens 'n ooreenkoms met Sasol sedert die middel verlede jaar Suid-Afrika se tegnologie om brandstof uit steenkool te maak in Amerika.

Die jongste nuus beteken dat vordering gemaak is met die wetgewingsraamwerk in Amerika, sê mnr. Stegmann. Dis nou moontlik vir private maatskappye om daar fabrieke op te rig wat sintetiese brandstof kan vervaardig.

Maar hoewel die belangstelling groot is, sê hy 'n mens kan nie nou al daarop staat maak dat fabrieke wat op die Sasol-lees geskoei is, wel in Amerika opgerig sal word nie.

As dit gebeur, sal dit op 'n stelsel werk waarvolgens Sasol 'n lisensie aan die buitelandse vervaardiger toestaan.

„Ons verkoop nie ons tegnologie in die sin dat ons afstand doen van enige regte nie," sê mnr. Stegmann.

„As iemand ons kennis wil gebruik, is ons bereid om die bouer van so 'n aanleg te lisensieer."

Die buitelandse vervaardiger kry niks meer nie as die reg om by daardie een aanleg Sasol se kennis te gebruik.

Dit sal natuurlik lisensiegeld vir Sasol inbring wat „beduidend" sal wees.

Maar goeie ekstra inkomste of nie, dit sal 'n newe-inkomste bly, sê mnr. Stegmann.

„Ons taak is om in die eerste plek vloeibare brandstof, gas en petrochemikalieë te vervaardig."

Verskeie ander lande stel ook in Sasol se metodes belang, sê hy. Baie navorsing oor brandstof word in Europa gedoen, veral deur die Duitsers.

Min lande het egter sulke groot voorrade geskikte steenkool soos Suid-Afrika en Amerika.

Slagting

SAN SALVADOR — Minstens driehonderd mense is die eerste twee weke van Junie in skermutselings tussen die leër en nasionale wag van El Salvador dood en gewond, luidens 'n verklaring van die linkse revolusionêre volksleër. — (Sapa—AP)

MNR. JOE STEGMANN, besturende direkteur van Sasol. Sasol kan 'n „beduidende" inkomste uit lisensie-geld kry, sê hy.

SA hulp vir Carter se olie-program

Van FRANZ KEMP

WASHINGTON

BOUWERK aan die eerste een of twee fabrieke volgens Sasol se voorskrifte sal na verwagting nog voor die einde van die jaar in Amerika begin. Nog meer Amerikaanse Sasols sal waarskynlik aanstaande jaar begin word.

Die nuus is vandeesweek deur mnr. Jim Mullowney van die Fluor-korporasie aan my verstrek.

Dit volg nadat pres. Jimmy Carter Maandag die laaste en die belangrikste deel van sy energieprogram in Washington onderteken het. Daarvolgens word 20 biljoen dollar in regeringslenings en waarborge verskaf om die produksie van sintetiese olie en gas uit steenkool en skalie te bespoedig.

Mullowney sê: „Ons verwag dat voorkeur aan Suid-Afrika se Sasol-tegnologie gegee sal word. Dit is die enigste proses wat tot dusver in die wêreld kommersieel lewensvatbaar bewys is."

Hy het bygevoeg dat Fluor nou in die state Kentucky ...

... of one good we have, and the less of ... less willing we become to give up ... of X. — Diminishing Marginal Rate of Substitution

Inferior ...

Price A falls.

I_2

I_1

A

Price A falls. CPF moves ... since more money is available to purchase A. A ...tively cheaper, and expenditure will be tran... relatively cheaper good.

Original consumption: ... of A.

New consumption: q_1 of ...

Thus B is an inferior good, ... of A fell, consumption of A increased, yet ... B decreased.

B most likely faces an upward slop... ...ve, and has a negative elasticity of dem...

Substitution effect: $q_1 \rightarrow q_2$

Income effect: $q_2 \rightarrow q_3$

Ohio besig is met navorsing vir Texas Eastern oor die moontlikheid om daar 'n Sasol-fabriek te bou. 'n Studieverslag oor die vooruitsig in 'n reservaat in Montana, waar groot steenkoolafsettinge is, is reeds aan die Crow-Indiane oorhandig.

Volgens Mullowney is ondersoeke ook in ander state aan die gang en ander maatskappye stel ook daarin belang om Sasol-fabrieke te bou.

„As in ag geneem word dat 'n Sasol-fabriek sowat drie biljoen dollar kos en dit sowat vyf jaar duur om te voltooi, is dit in nasionale belang dat ons dadelik daarmee begin," sê hy.

„Ons sal waarskynlik mense na Suid-Afrika stuur om die Sasol-proses te bestudeer, maar dit kan ook gebeur dat ons Suid-Afrikaners hierheen bring om ons te leer."

Pres. Carter se sintetiese energieprogram is daarop gemik om teen 1987 500 000 vate olie uit te skakel.

As die ekonomiese, maatskaplike en omgewingsprobleme van grootskeepse produksie van sintetiese brandstof uitgestryk is, sal regeringshulp verdriedubbel word. Daardeur sal nog 68 biljoen dollar beskikbaar gestel word vir 'n mikpunt van 2 miljoen vate sintetiese brandstof teen 1992.

Honderde energiemaatskappye staan tou om lenings te verkry wat deur die nuwe Synthetic Fuel Corporation toegeken sal word.

Bob Hanfling van die Amerikaanse departement van energie het bevestig dat verskeie maatskappye groot belangstelling in Suid-Afrika se Sasol-proses toon. Hy verwag dat bouwerk aan minstens een Amerikaanse Sasol nog vanjaar sal begin.

Amerika kry die meeste van sy vetkole van Suid-Afrika. Invoere het in die laaste vyf jar van 375 500 kortton in 1975 tot 1 130 900 kortton in 1979 gestyg.

Suid-Afrika se steenkoolproduksie het verlede jaar die eerste keer 100 miljoen metrieke ton oorskry. Die totale steenkoolverkope het 1,2 biljoen dollar beloop.

In die afgelope twaalf maande is ses nuwe steenkoolmyne in Suid-Afrika begin, wat die getal in werking op meer as 80 te staan bring. Die land se steenskoolvoorraad word op 61 biljoen ton bereken — voldoende vir nog seshonderd jaar.

Volgens die Standard Bank sal Suid-Afrika se steenkool teen 1985 sowat 2,5 biljoen dollar aan buitelandse valuta vir die land verdien - vier keer meer as die uitvoerinkomste vir 1979.

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FM 6/6/80

CHEMICAL INDUSTRY 188

Cutting out oil 55

The oil crisis has opened vast opportunities for the South African chemical industry to use local raw materials as a substitute for imported petrochemical intermediates, says techno-economist Terry le Roux.

Speaking to the Faculty of Chemical Engineering at Wits University, he indicated that SA's abundant, if low-quality coal reserves would provide the major source of intermediate organic (ie carbon-containing) compounds for synthetic purposes. But ethanol derived from field crops like sugar cane could also contribute.

Apart from Sasol's well-proven synthetic route to petrol and diesel fuel to which SA is already so heavily committed, Le Roux pointed out that other chemical routes to liquid fuels could become useful in the future.

Large-scale methanol synthesis from coal (a process already being strongly punted by UCT's Richard Dutkiewicz) would provide a fuel which could be used without further chemical conversion in suitably modified engines. Methanol could also be used as a fuel extender in mixtures with ethanol and other similar substances.

An important long-term possibility is to convert methanol — using a catalytic system under development by Mobil — to so-called "aromatics". These are "ring compounds", like benzene and toluene, and can be used to formulate a high-octane petrol (but not, unfortunately, diesel). Aromatics are also very important synthetic intermediates for various classes of chemicals, including pharmaceuticals and plastics.

At present, SA imports aromatic derivatives to the value of more than R200m per year, manufactured abroad by traditional methods from various petrochemicals.

The Mobil process — which promises to be attractively flexible — could also be used to convert methyl alcohol to such important intermediates as ethylene, propylene and styrene. Ethylene is used as an intermediate for the manufacture of polythene and PVC, propylene for making polypropylene, and styrene for synthetic rubber. Synthetic rubber is traditionally made from naphtha, an important petrochemical.

Another important synthetic rubber intermediate is butadiene, imports of which could soon exceed 5 000t per year. But butadiene could also be made locally — from certain Sasol by-products.

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Realize is probably
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Chemical worker . . . vast development potential in SA

It is also possible to make butadiene from ethanol, which itself is a major Sasol by-product. As is now generally known, ethanol could, in the future, also become available on a large scale from agricultural sources.

Acetylene (produced locally from coal via the carbide route) should also make an important contribution. Acetylene could be used as a source of adipic acid, a synthetic intermediate for the production of Nylon 66. SA currently imports more than R15m worth of Nylon 66 per year.

Acrylic resin raw materials are used to manufacture acrylic emulsions for paint, adhesives and non-woven fabrics, and SA currently imports over R5m worth per year. These products could be made locally from acetylene, and also from propylene, already available locally as a Sasol by-product. Another important intermediate, acrylonitrile (used for making acrylic fibres) could also be manufactured from acetylene or propylene. SA currently imports more than R10m worth of acrylic fibres annually.

Other important chemicals, required on a smaller scale, could also be produced locally. But Le Roux emphasised that imported petrochemicals can be purchased "as a package", whereas the development of local substitutes derived from coal or agricultural products would require a substantial local effort in R & D. This effort, in turn, would require a heavy commitment of capital and of scarce chemical engineering manpower.

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No details on security at Sasol

RDM 7/6/80.

THE ASSEMBLY. — Attention was continuously being given to ways of improving security at Sasol installations, the Minister of Industries, Commerce and Consumer Affairs, Dr Schalk van der Merwe, said yesterday.

He was replying on behalf of the Minister of Mineral and Energy Affairs to a question by Mr Nigel Wood (NRP Berea).

Mr Wood wanted to know whether closed circuit television was being used to monitor the perimeter fences.

Dr Van der Merwe said it was not in the interest of the security of industrial installations to furnish details of safety and security measures that might or might not be in use.

Mr Wood also wanted to know from the Minister of Defence whether it had been decided that units of the Defence Force would play a part in guarding Sasol plants, and if consideration had been given to using mobile patrols similar to those at airports.

The Deputy Minister of Defence, Mr Kobie Coetsee, said the Defence Force played an active role in the protection of certain strategic installations.

"On account of the security aspects involved, no further details may be released," he said. — Sapa.

(55) RDM 9/6/80.

Consumption goes up, power down

By VITA PALESTRANT
Consumer Mail

A CONSUMER Mail test of a "fuel saving" carburettor has shown that it not only pushes *up* fuel consumption, but markedly reduces engine power and acceleration.

The SP injector carburettor has been extensively advertised and claims to save at least 10% of motorists' petrol bills.

Locally made, it has a simple design and can be fitted to any standard car engine.

Motorists eager to cut their petrol consumption have been bombarded by claims about fuel savers over the past five years. But how successful are they?

According to the South African Bureau of Standards and the Automobile Association, motorists can save on their petrol bills without the aid of a "fuel saver" by ensuring their cars are properly tuned for fuel economy.

But sales representatives from SP Injector Carburettors (Pty) Ltd, Germiston, claim their carburettor gives motorists a saving of between 15% to 20%.

Consumer Mail asked the Automobile Association to test the carburettor.

After weeks of testing the AA came up with results that showed the carburettor not only pushed up fuel consumption, but markedly reduced engine power and acceleration.

● **Full report — Page 9**

CONSUMER MAIL

The guaranteed fuel saver that wastes petrol, slashes your engine power and slows you down

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RDM 9/6/80.

Fuel saving has become a major concern in South Africa with the oil squeeze tightening daily. **VITA PALESTRANT** of Consumer Mail examines one of the advertised options — a carburettor that, it is claimed, saves drastically on fuel consumption. But the Consumer Mail probe found just the opposite.

A FUEL saver "guaranteed" to solve motorists' petrol problems and effect substantial fuel savings showed instead a significant increase in petrol consumption when tested.

The especially designed carburettor, which it is claimed has "approved" and "tested", also showed a massive decrease in engine power and acceleration when tested by the Automobile Association.

These are the results of a series of tests conducted for Consumer Mail by the Automobile Association over a period of weeks on the SP injector carburettor.

In recent years motorists have been faced with massive fuel price hikes. Since 1975 petrol has leapt from 18c a litre to 54,4c a litre — an increase of 202%.

During this period numerous fuel saving devices have entered the market claiming to cut motoring costs.

The SP carburettor, which retails at R142 and has been extensively advertised, is one such fuel saving device.

Potential customers are told by SP's sales reps that they can save between 15% to 20%.

And their advertisements state "we guarantee a saving of 10% or more on your present fuel consumption".

But they do not state who the carburettor has been "approved" and "tested" by.

The SP, which is locally made, is simply designed and fits any conventional car engine.

It has no float chamber or venturi and thus can readily be fitted to different engine sizes.

It uses two metering valves, one linked to the accelerator and the other controlled by air flow.

The SP brochure states: "The SP has a single channel that feeds fuel under varying loads and speed conditions ... ensuring a well balanced charge mixture in such a manner that maximum efficiency can be achieved by adjusting a single mixture control screw."

Its plus factor is, being locally made, it is considerably cheaper than most standard carburettors.

For the purposes of the test a Consumer Mail researcher asked SP Injector Carburettors (Pty) Ltd, Germiston, to fit one of their carburettors to a Cortina V/6 2,5l.

For this she was quoted: R142 for the carburettor — but offered a 27% discount — bringing it down to R103,66; R48,14 for labour and parts; R6,07 for GST — altogether totalling R157,87.

The researcher did not disclose who she was. She was told by one of SP's reps she could expect a saving of up to 20% on her present petrol bill.

Before collecting the car, the researcher phoned and asked who had "approved" and "tested" the carburettor. She was told to speak to Mr M J Schoeman — its designer and manufacturer.

He named the South African Bureau of Standards and told the researcher he would show her their report when she came to fetch the car.

However, when she got there, Mr Schoeman said he was unable to find it. Instead he phoned an SABS official and asked him to tell her about the carburettor's fuel savings. The SABS official refused.

The Cortina was taken to the AA where it was put through a series of thorough tests. The newly fitted SP carburettor was compared to the car's existing standard Weber carburettor.

Both carburettors were in a similar state of tune and as close as possible to optimum performance.

THE AA DID THE FOLLOWING FOUR BASIC TESTS:

1. Repeated fuel consumption tests under stop/start driving conditions over a distance of approximately 5,2km.
2. Fuel consumption tests on a dynamometer at steady speeds with constant throttle openings at different loads.
3. Dynamometer tests to determine comparative maximum output at the driving wheels.
4. Road tests to compare acceleration times.

FINDINGS:

FUEL CONSUMPTION:

UNDER STOP/START CONDITIONS.

On average the SP carburettor worked out 4,6% heavier on fuel.

On east/west runs, which were mostly downhill under light throttle conditions, the SP carburettor was only slightly less than one per cent heavier on fuel.

However, on west/east runs, which was mostly up hill and thus under heavier throttle conditions, the SP carburettor was approximately 7,3% heavier on fuel consumption.

ON THE DYNAMOMETER — UNDER STEADY THROTTLE FIXED LOAD CONDITIONS.

At 90km/h under light load there was no significant change in consumption — 0,3% — but when the road speed was reduced to 72km/h and load was increased, fuel consumption increased by slightly less than 4%.

POWER OUTPUT:

The results of the dynamometer test showed that a maximum output of 90km/h in top gear, the SP carburettor was some 36,6% down on power compared to the Weber. At 50km/h in third gear it lost approximately 11,5% of its power.

ACCELERATION:

Road tests showed that the SP carburettor was up to 47% slower.

When accelerating from 0 to 90km/h through the gears it showed a performance deficiency of approximately 47% compared to the Weber.

From 60km/h to 90km/h the average acceleration rate was some 28% slower than the Weber. The time covered over a distance of 0,2km from rest showed the SP carburettor to be approximately 16% slower.

CONCLUSION:

The tests showed there was an overall increase in fuel consumption — an average of almost 5% — when the test vehicle was fitted with an SP carburettor.

Its considerable loss of power was attributed to the restricted choke "tube" area which caused hindrance to engine breathing at high engine RPMs.

Consumer Mail phoned the SABS to ask whether they had tested and approved the SP carburettor.

A spokesman for the Automotive Engineering Division of the SABS said they had tested it about five years ago but had not "approved" it.

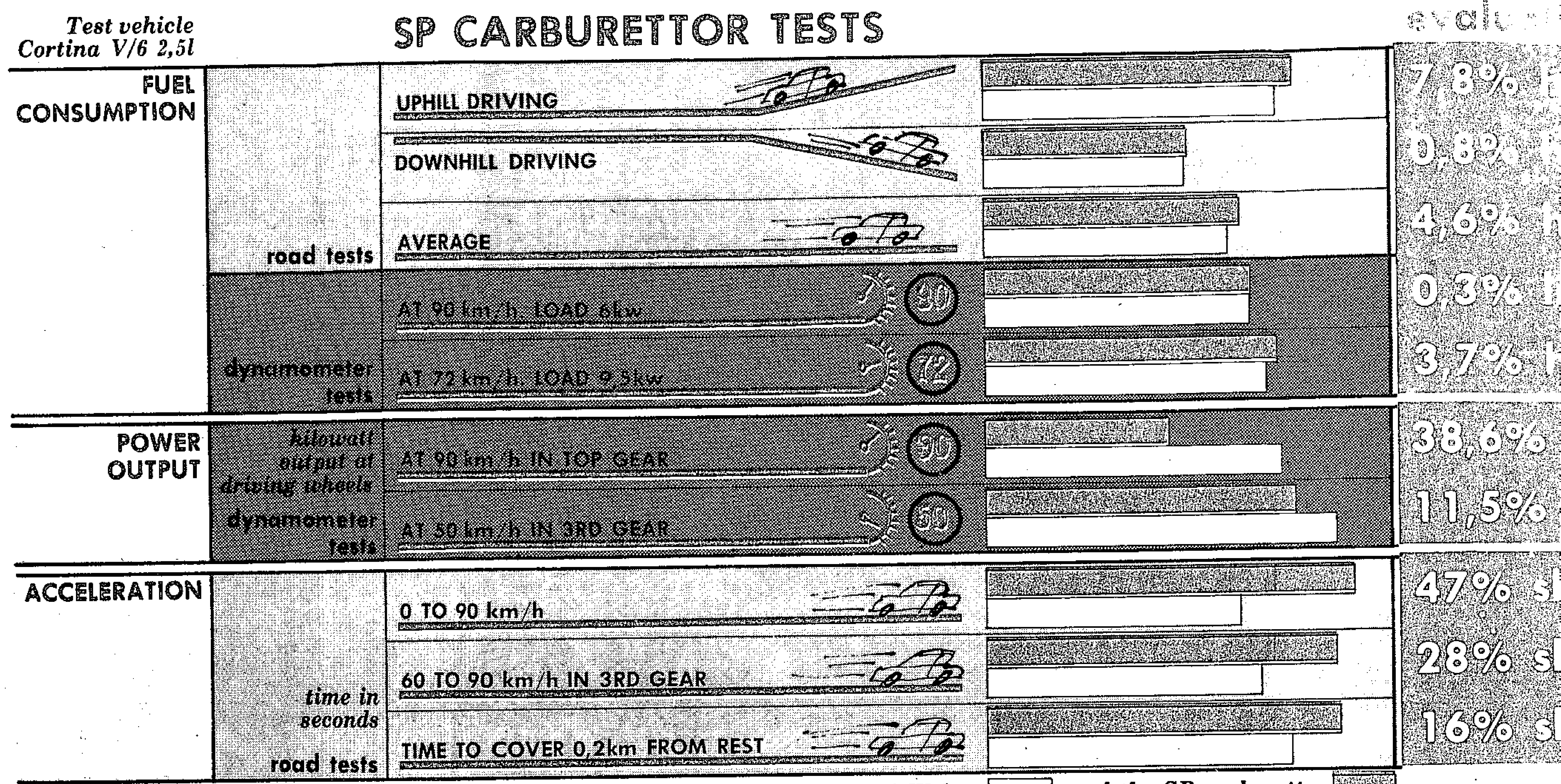
"We did not find any fuel savings at the time. The SABS has as yet not tested a successful fuel saving device," he said.

The SP carburettor does not carry the bureau's mark — which is a sign of approval.

Mr Fred Bothma, technical director of the AA, said his organisation had not yet found a fuel saver which worked on a properly tuned car.

"No fuel saver can improve fuel consumption on an engine which is properly tuned for fuel economy," he said.

• FOOTNOTE: While the SP retails at R142, SP Carburettor (Pty) Ltd offer a discount which ranges from "about" 10% for private individuals to "between 20% to 25%" for companies.



Comparison between car's standard Weber and the SP carburettor

The graphic shows a comparison between the Cortina's standard Weber carburettor and the "fuel saving" SP carburettor. The tests are split into four se fuel consumption tests under stop/start driving conditions; fuel consumption tests on a dynamometer; power output tests on a dynamometer and road tests

Testing the SP carburettor o

Opec tackles the price tangle

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RDM 9/6/80

ALGIERS. — Opec Ministers are gathering in Algiers for their semi-annual discussion of prices, but delegates are not predicting any immediate price rises.

The oil Ministers will try to end the free-for-all which has scattered Opec prices over a range from 28 dollars a barrel to nearly 40 dollars a barrel.

But Saudi Arabia's Sheikh Ahmed Zaki Yamani and others say they doubt that this will be achieved at the Algiers conference which opens tomorrow.

If the free-for-all does continue, delegates said, immediate increases in the price of oil are less likely so soon after a round of rises last month.

At issue is whether Saudi Arabia, the biggest exporter, will raise its price and trim its huge production, so that pricing uniformity will be established at a level high enough to satisfy price hawks.

The Saudis would want to be sure that an increase in their rate did not simply trigger a new bout of price leapfrogging.

Saudi crude at 28 dollars cannot command acceptance as a benchmark among other Organisation of Petroleum Exporting Countries such as Algeria, Iran and Libya.

Three times in the past six months the Saudis have raised their price, expecting that those charging more would stand still.

Each time, the others imposed their own increases, signalling, in effect, that the level around which to unify prices ought to go higher.

Asked about prospects for price unification at Algiers, Sheikh Yamani said when he arrived yesterday: "I think it is too early to achieve that now."

Opec abandoned pricing unity, based on a benchmark rate for Saudi crude and differentials for oil of varying quality, when Iran's revolution last year was followed by a slump in its output and a world shortage of oil.

Producers sold at whatever a sellers' market would bear and the average official rate for Opec oil has risen from under 13 dollars to more than 30 dollars a barrel since January 1979.

By the rules of the Market Place, now should be the time for the price spiral to level out.

A modest glut of oil is developing, partly because the Saudis, in their bid for market stability, are keeping their output high.

Saudi officials say the kingdom seeks price reunification to stabilise the market and make possible the introduction of a new long-term strategy providing for orderly, quarterly price adjustments partly indexed to Western inflation.

Consumers might then predict the cost of oil and be spared the shocks of price leapfrogging.

Iraqi Oil Minister Mr Tayeh Abdel-Karim told reporters that his country would propose that Opec fix its new unified price at 32 dollars a barrel in exchange for reduction in the production of member states.

Conference sources said a new benchmark would mean a substantial increase in average Opec prices which was unlikely to be acceptable to Saudi Arabia. — Sapa-Reuter.

Small chance of Opec oil price accord

(55) IDM 10/6/80

ALGIERS. — Iran's Oil Minister, Mr Ali Akbar Moinfar, said yesterday his country would not lower its oil price merely "for the sake of unity among Opec producers".

And Saudi Arabia's Sheikh Ahmed Zaki Yamani declared himself "very pessimistic" about chances of achieving a common price to end turmoil in the world petroleum market.

Sheikh Yamani, leader of the oil cartel's moderate bloc, gave his view as the twice-yearly Opec price meeting opened in Algiers with an Iraqi proposal for a unified price of $32 a barrel.

But the outlook for agreement on the compromise plan was grim.

"We don't have a unified price for what we buy, so why should we have a unified price for what we sell?" asked Mr Moinfar, whose nation's oil is now priced $7 above Saudi Arabia's identical crude oil that goes for $28 a barrel.

The Iraqi proposal — calling for Opec "hawks" to freeze prices at present record levels while moderates increase theirs slightly — has met with support among several of the moderates and even hardline Libya.

The plan calls for Saudi Arabia to raise its price to the $32 mark, something Sheikh Yamani has not declared himself ready to do. Mr Moinfar said the $32 level was "too low" and that a price of $35 would be "more acceptable".

"We will not come down for the sake of price unity," Mr Moinfar said, adding that failure to achieve a common price "would not be a bad thing".

Kuwait's Oil Minister, Sheikh Ali Khalifa Al-Sabah, said further price increases could come from the Algiers meeting whether on a unified basis or not.

He said all Opec producers were now able to sell their oil at their own price despite a surplus on the market.

Qatar joined Venezuela, the United Arab Emirates and Indonesia in supporting the compromise proposal, saying: "We will go up if the others will go up."

The Opec president, Mr Humberto Calderon Berti of Venezuela, told the conference in an opening speech which played down the importance of prices: "We cannot meet every six months just to set oil prices.

"We must bring new ideas to our organisation to continue to be relevant. Despite oil price rises our people today are no richer. We must find a new system to enrich our populations." — UPI.

Saudis are no closer to $32 oil agreement

(55) RDM 11/6/80

ALGIERS. — The Saudi Arabian Oil Minister, Sheikh Ahmed Yamani, yesterday described as "wishful thinking" reports that his country was prepared to accept a $32 Opec benchmark oil price.

Opec agreement on the price would entail a substantial boost of oil prices and a $4-a-barrel rise by the Saudis, the world's biggest oil exporters.

The Saudi price is currently $28 a barrel.

Opec Oil Ministers earlier emerged from a morning session of their conference in Algiers apparently confident they were narrowing their differences over prices.

Conference sources said an agreement was still dependent on whether they could agree on oil production levels and the gap between their price differentials.

The Algerian Oil Minister, Mr Helkacem Nabi, had earlier told reporters the big surprise of the conference would be Saudi acceptance of the $32 price.

But other sources said Saudi Arabia did not consider there was room for agreement.

They said Saudi Arabia had not yet stated openly whether it would accept or reject the $32 proposal put forward by Iraq.

It would first wait and see whether other countries were prepared to reduce the gap between their prices and those of Saudi Arabia. — Sapa-Reuter.

FOOTNOTE: The South African Government is watching the Arab oil sheiks' deliberations with close interest, the Secretary for Commerce, Mr Tjaart van der Walt, said in Cape Town yesterday. He said South Africa depended on the spot market for its supplies. "We will just have to wait and see how any increase in the base price will affect the spot market prices." The director of the Motor Industries Federation, Mr Jannie van Huyssteen, said he was confident that even if the base price was raised, South African prices would not be affected.

82 + 39 = 121 = 61%　　2-

UNIVERSITY OF CAPE TOWN
EXAMINATION ANSWER BOOK

EVERY CANDIDATE MUST enter in column (1) the number of each question answered (in the order in which it has been answered); leave columns (2) and (3) blank.

All answer books must be numbered

Number of books handed in	
Number of this book	1

	Internal	External
(1)	(2)	(3)
A. 1bi	16½	
A 1bii		
A 3b	9	
A 2b	16.	
Examiners' Initials		

(55)

Wrong readings from Escom

12/6/80.

Political Staff

HOUSE OF ASSEMBLY. — The Electricity Supply Commission has had to publish a second edition of its annual report because of inaccuracies in the original report tabled last month.

Escom found itself in the embarrassing position where regional electricity sales quoted by the outgoing chairman, Dr R. L. Straszacker, and the then general manager, Mr Jan Smith, were incorrect.

The sales increases for both the Border and Cape Northern regions quoted the 1977-78 figure instead of that for 1978-79, and there were minor errors in stating the figures for the Cape Eastern, Eastern Transvaal, Orange River and Rand and OFS regions.

All figures were, however, correctly reflected in a table at the back of the report.

A spokesman for Escom head office in Sandton said the errors were minor, but had to be corrected. He estimated the corrections and reprinting the 77-page report had cost a couple of thousand rands.

per)

Paper No ......[illegible]......
(to be copied from the heading on the Examination Paper)

NOTE CAREFULLY

1. Enter at the top of each page and in column (1) of the block on this cover the number of the question you are answering.
2. Blue or black ink must be used for written answers. The use of a ball point pen is acceptable. Red or green ink may be used only for underlining, emphasis or for diagrams, for which pencil may also be used.
3. Names must be printed on each separate sheet (e.g. graph paper) where sheets additional to examination book(s) are used.
4. Do not write in the left hand margin.

WARNING

1. No books, notes, pieces of paper or other material may be brought into the examination room unless candidates are so instructed.
2. Candidates are not to communicate with other candidates or with any person except the invigilator.
3. No part of an answer book is to be torn out.
4. All answer books must be handed to the commissioner or to an invigilator before leaving the examination.

Any dishonesty will render the candidate liable to disqualification and to possible exclusion from the University

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however states that countries will benefit from trade as

WORLD SPOTLIGHT — BY STANLEY UYS IN LONDON

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Yamani saves the West — and Opec — from disaster

12/6/80

SHEIK Ahmad Zaki Yamani, Saudi Arabia's charismatic Oil Minister, has done it again — but only just.

Once more he has gone to the rescue of Western industrialised nations to persuade fellow oil producers to keep their next oil price rises within modest limits.

With a recession bearing down upon them, the Western nations cannot afford a massive oil price hike, and Sheik Yamani knows, better than most of his Arab colleagues, that the oil producers themselves would not escape the effects of a Western recession.

Sheik Yamani has been telling Opec members for a long time that if they pull the plug on the West, they will go down the drain with it.

He wants Opec to agree to a unified price structure, and he went part of the way to achieving this at yesterday's Opec meeting in Algiers.

Although there is still confusion over exactly what happened, it appears he agreed to increase Saudi Arabia's oil price over the next few months from \$28 to \$32 a barrel, provided other Opec members do not exceed a ceiling price of \$37 a barrel.

This is a rickety compromise, but it is better than the wild escalation of prices that was being advocated by the Opec hawks — Algeria, Iran and Libya.

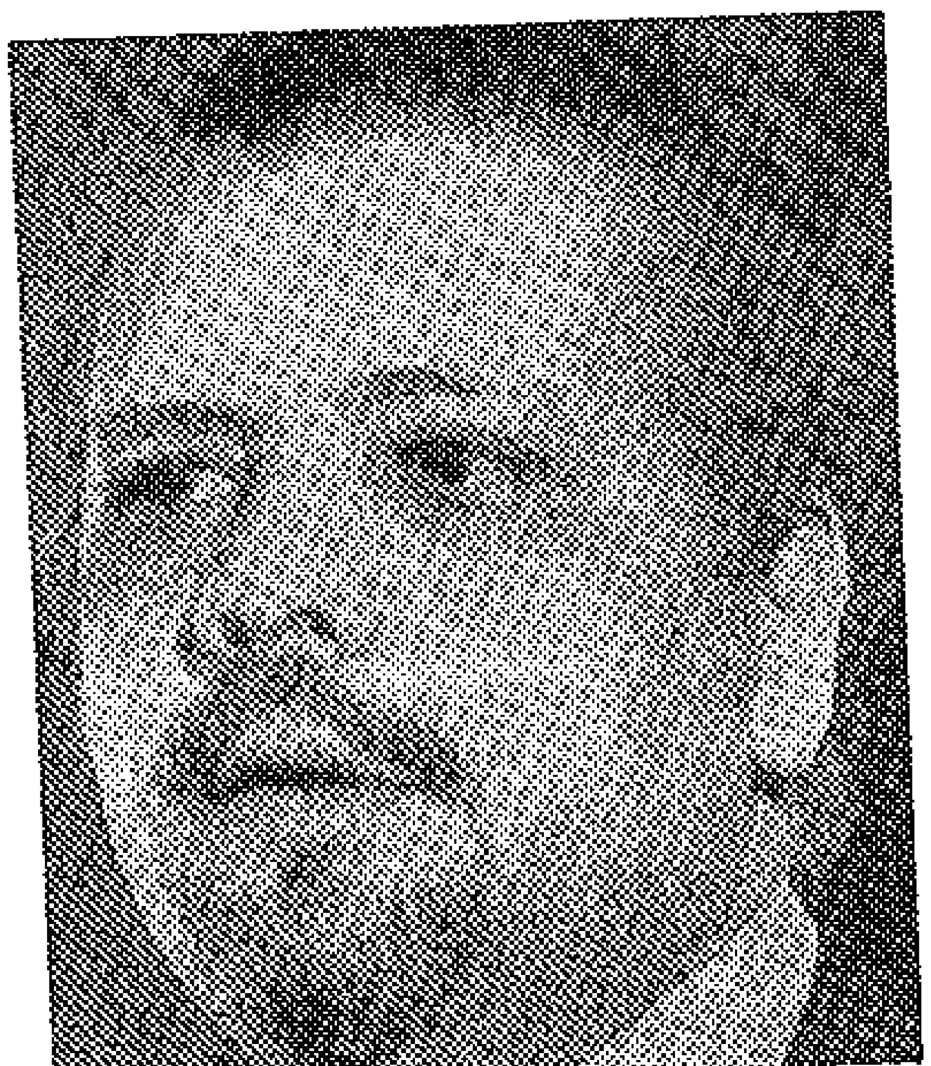
The Sheik is said to have warned his Opec partners that another round of savage price increases would trigger off a catastrophic recession in countries with which Opec members traded and in whose currencies they had vast investments.

If a 1930's-type recession hit the West, the oil demands of industry would dwindle overnight. The immediate effect would be a glut of Opec-produced oil.

The value of foreign currencies, particularly the dollar — in which all oil deals are struck — would slide downwards.

Sheik Yamani knows that, at one fell swoop, Opec countries could find themselves rushing down the same recession drain as their customers.

This argument apparently made some impact on the Opec negotiators in Algiers, but countries like Algeria,



SHEIK YAMANI
... it was touch and go

Iran and Libya, who imagine they could escape the worst effects of a global recession, do not see themselves as being in the business of saving Western capitalism from decline.

It is anybody's guess, though, as to how long Saudi Arabia can continue to impose restraints on its partners.

Until two years ago, the Saudis could virtually dictate oil prices. The 13 member-states of Opec produce about 28-million barrels of oil a day, which is almost half the world's oil and almost two-thirds of the oil of the non-communist world.

Saudi Arabia possesses almost one-third of the non-communist world's oil reserves and has been producing about 9,5-million barrels a day, although its preferred output would be 8,5-million barrels a day.

From this power base, the Saudi Arabians kept a reasonably firm grip on Opec oil prices. They always took the wider view of the industrialised world's economic future, knowing that an oil price free-for-all would deepen the recession in the West.

But when the Shah left Iran and the mullahs took over, Iran staged an oil price rebellion which paid off, and the whole pricing structure collapsed. Sheik Yamani is trying now to bring the pricing structure back to a unified level.

Iran insisted at yesterday's Algiers conference that it would not lower its price below \$35 a barrel, and it won the point. The decisions reached at Algiers have not been properly evaluated yet, and although some commentators insist that Sheik Yamani won the day, others say the compromise — a price range of between \$32 and \$37 dollars a barrel — represents a climb down by Saudi Arabia.

Saudi Arabia, though, is not without clout. Sheik Yamani has been predicting that a glut of oil — caused by declining Western industrial production and other factors — will force a price drop.

The Opec hawks, however, want to counter this by curtailing production to keep up prices. But if Saudi Arabia keeps up its output of 9,5-million barrels a day, and non-Opec countries increase production, prices might just be kept in check. Iran has learnt to its cost that BP, Shell and the Japanese companies will not buy Iranian oil at its new price of \$35 a barrel.

With the present glut, the companies, who are under considerable political pressure because of the United States hostages, prefer to buy on the spot market rather than from Iran. However, Libya, Nigeria and Algeria — which, like Britain with North Sea oil, are charging more than Iran — have had no difficulty finding buyers.

The situation is highly fluid, and with Islamic countries providing 70% of the non-communist world's oil, it is risky to predict what will happen next.

Saudi Arabia believes in a pricing and production level designed to preserve the alliance with the United States and to maintain the health of Western economies. This is the view of the doves in Opec.

The hawks, on the other hand, want to push oil prices to the market limit. They have displayed not only political hostility to the West, but also a streak of irrationality in their behaviour — and an apparent disregard of the consequences for their own economies. This could be the most dangerous factor of all for the long-term stability of the West.

● See Editorial Comment Page 10

1 unit of wine $\frac{80}{90}$ equals 0,89 units of cloth
1 " " cloth $\frac{90}{80}$ equals 1,125 " of wine

(55) RDM 12/6/80

Sunflower fuel 'more efficient than diesel oil'

SOUTH African researchers may have found a sunflower-based fuel more efficient than diesel, which means farmers could literally grow their own fuel.

The discovery was announced by Mr Tickey Bruwer, director of the research division of agricultural engineering in the Department of Agriculture.

The process involves the addition of chemicals to sunflower oil to reduce its viscosity and give it a thermal efficiency which is greater than that of diesel fuel.

"In essence, this means we have run diesel engines on a plant-based renewable fuel and achieved better results than on diesel," Mr Bruwer told the symposium of the South African Institute of Agricultural Engineers in Johannesburg yesterday.

He warned that further experiments would be necessary before the use of the fuel could be recommended without reservation.

"Preliminary dynamometer tests on engines revealed that after 100 hours of operation at 80% of maximum power — and contrary to our previous experience with pure sunflower oil — the chemically treated fuel caused less coking than diesel, produced much less exhaust smoke and increased engine thermal efficiency."

The process involved a well established method of altering the oil chemically to create an ethyl or methyl "ester".

Mr Bruwer said that farmers in suitable areas would have no major practical difficulties in growing, pressing, treating and consuming their own fuel for food production.

This situation could be achieved without significant sacrifices of current production. More efficient farming methods would allow production levels to remain where they were, in spite of the necessity of devoting some land to growing sunflowers, Mr Bruwer said. — Sapa.

Saudis aloof from first price rises

(55) RDM 12/6/80

ALGIERS. — Oil-producing states began announcing price rises yesterday to take effect in July after Opec set a $37 a barrel ceiling at a ministerial meeting which ended in Algiers. But Saudi Arabia, the biggest exporter, said it planned no immediate increase.

"I would not be surprised if we stayed at $28 a barrel until September," the Saudi Oil Minister, Sheik Ahmed Zaki Yamani, told a news conference. He did not rule out a Saudi increase, adding: "It could be one dollar or so."

Sources in the Organisation of Petroleum Exporting Countries calculated that, depending on what the Saudis did, the new agreement would entail a rise of one to two dollars on the present average Opec price of $32 a barrel.

Within hours of the accord, which Opec said was designed to stabilise the market, the Kuwaiti Oil Minister, Sheikh Ali Khlaifa al-Sabah, said the deal did not rule out prices above the $37 ceiling.

"There is no way you can prevent national oil companies from discussing arrangements over and above the official price," he said.

Delegates did not take this to mean that Sheikh Ali Khalifa was opening the door for producers to rush headlong into breaching the ceiling as they did with a similar limit Opec tried to impose in March 1979.

They said Sheikh Ali Khalifa appeared to be talking about special deals, such as those involved in the present Algerian price.

Algeria added a $3 surcharge to its price yesterday, to be refunded to companies which agreed to explore for oil and gas in its territory. It does not regard the surcharge as part of its official rate.

But some confusion about the Kuwaiti minister's remark was not dispelled when the Venezuelan Oil Minister, Dr Humberto Calderon Berti, said he believed Opec producers would not exceed the ceiling.

Sheikh Ali Khalifa said Kuwait would raise its price by $2 on July 1.

Dr Calderon said Venezuela would watch what other producers, but was likely to increase its price by one to two dollars.

The United Arab Emirates said it would not put up its price in present market conditions.

Sheikh Yamani stressed that a Saudi decision to raise prices would depend largely on whether the four US oil companies — led by Exxon Corp — which form the Arabian-American Oil Company and lift the bulk of Saudi oil, passed on to the consumer the benefits of the king-

Sheikh Yamani said he was unhappy about keeping Saudi output high if the oil was used to build strategic reserves.

But he made it clear that what mattered most in deciding to trim Saudi output was whether Opec could return to a new unified pricing structure. The Opec ministers are expected to discuss the issue in Geneva in September.

This would be based on a marker price with a narrow band of agreed differentials for crude of varying quality and would form the basis of a long-term Opec strategy — strongly backed by Sheikh Yamani — to eradicate disorderly price leapfrogging.

The 13 ministers failed to achieve this in Algiers, but Dr Calderon said a step towards it had been taken with the Algiers agreement. The agreement involves a $32 marker with freedom to range up to $37 ceiling for quality and geographical location relative to markets.

RDM 12/6/80.

Oil security 55

SECURITY measures at oil facilities are constantly under review, according to replies by two Cabinet Ministers to questions yesterday. Mr Tiaan van der Merwe (PFP Green Point) asked the Minister of Transport Affairs, Mr Chris Heunis, and the Minister of Mineral and Energy Affairs, Mr F W de Klerk, whether security measures were being reviewed at oil debarking and storage places in Table Bay Harbour and the oil refinery at Milnerton. Mr Heunis said: "Security measures at the various harbours are constantly being re-evaluated and adjusted when necessary." Mr De Klerk said security measures at the refinery were undertaken by the oil company.

No cover — Sasol foots sabotage bill

55 SAPA 260 RDM 12/6/80

By LLEWELLYN KRIEL

SASOL had no insurance to cover last week's sabotage attacks, which caused damage amounting to a massive R5 800 000.

This was established this week when the Rand Daily Mail found out how Sasol would bear the huge costs of the sabotage damage.

Contrary to a report in a Sunday newspaper at the weekend, it was found that Sasol was not insured with the South African Special Risks Insurance Association (Sasria) — the only organisation in the country providing cover against damage from politically-motivated acts.

Sasol's chief public relations officer, Mr Clarence Keyter, could not disclose yesterday why Sasol, one of the most strategically vulnerable targets for sabotage in South Africa, had not been insured against attacks such as the limpet mine bombings at the Sasol I, Natref and Secunda plants 11 days ago.

Sasria, a registered insurance company administered by the SA Insurance Association (Saia), was established in April last year specifically to provide cover against such attacks and riots, terrorism or other politically-motivated acts.

The entire damage bill will be borne by Sasol Limited, with the bulk probably in the form of capital write-offs and a R1 700 000 bite out of the expected after-tax profits.

Although this means shareholders may suffer a loss of potential dividends which might have arisen from profits had the attacks not taken place, Sasol yesterday guaranteed dividends would not be lower than was promised in its interim report in January.

There was no possibility of the taxpayer having to bear any burden as a result of the lack of insurance, the Sasol statement said.

"The effect of the events on the expected after-tax profit for the financial year ending June 1980 will not be material in relation to the total expected profit and is estimated at R1 700 000.

"Present indications are that, due to other factors, profits during the second half of the financial year will be even somewhat better than envisaged in the interim report of January 25, 1980.

"On that occasion it was stated that the after-tax profit in the second half of the year would be maintained at approximately the same level as the first half," the statement said.

The Johannesburg Stock Exchange was immediately notified of the Sasol statement and the full text was sent to the JSE for its information and to allow it to inform stockbrokers on the floor should it be considered necessary.

Earlier this week the insurance company acting as brokers for Sasol refused to comment on the fact that Sasol was not insured with Sasria and referred the "Mail" to Sasol's public relations department.

The "Mail" approached the company for comment shortly after the executive director in charge of the Sasol account had returned from a day's talks in Sasolburg.

Opec rise less hurtful this time

(55)

RDM 13/6/80.

NEW YORK. — Unlike the situation last summer when oil-price increases made a shambles of President Carter's anti-inflation programme, no such problems are expected to follow the action taken by the Organisation of Petroleum Exporting Countries in Algiers this week.

"The impact is going to be pretty negligible this time around, especially if Saudi Arabia maintains a moderate line," says Mr James Solloway, of Argus Research Corporation.

Opec has agreed on a new benchmark price of $32 a barrel, suggesting possible increases of a dollar to $4 for most of Opec's output of 28-million barrels a day.

Saudi Arabia, which accounts for a third of Opec's output, may hold its price for a while.

The Saudi Oil Minister, Sheikh Ahmed Zaki Yamani, told a news conference after the Opec meeting in Algiers that he would not be surprised if Saudi Arabia held its price at $28 a barrel until September, although he left open the possibility of a $1 a barrel increase.

Economist say the Opec increase may push US petrol prices up between a cent and 3c a gallon, and perhaps less because of the economic recession and consumer resistance to already high prices.

Mr Solloway says: "At most you may see a 3c a gallon increase in gasoline, but I suspect that with the glut in oil supplies worldwide, refiners and distributors will have to swallow most of the increase."

The economic environment is far different from past situations when petrol supplies were tight and it was easy to pass along the increases costs to consumers.

Mr Solloway and a Wall Street economist, Mr Gary Shilling, believe the impact on the overall US inflation rate will be negligible.

They say that even though petroleum prices will rise faster than the average inflation rate, other prices are coming down and softening the impact of the Opec increase.

Mr Shilling says: "The Opec action gives inflation some kick, but not nearly as much as last summer when Opec price increases and decontrol of US oil prices were adding as much as 6½ percentage points to the consumer-price index."

Analysts give no specifice estimate of the impact of the latest Opec increase on the consumer-price index, but believe it will be minor. — Reuter.

3/6/80
ARGUS

'Limpet mines' in Sasol terror

Argus Correspondent

JOHANNESBURG.— Sophisticated limpet mines are now thought to have been used in the sabotage attack on the Sasol and Natref plants in Sasolburg.

Initially, it was thought that home-made bombs had caused the explosions which resulted in fires which raged for the best part of the day and caused damage estimated at R6-million.

A police spokesman said that the number of bombs used would not be disclosed at this stage as this could hinder investigations.

Meanwhile, Sasol I's huge flames have finally died and a white mist today shrouded the fuel-from-coal site as the huge manhunt continued for the saboteurs.

Workers had moved in to clear the debris around the eight tanks hit by the blaze and production at both plants was completely normal today.

PAID TRIBUTE

Newspapermen were yesterday shown the extent of the damage at the Sasol plant itself and the production manager, Mr Mike Tisdall, paid tribute to the men — at times as many as 250 of them in Sasol — who had fought the flames.

Sapa reports that there were apparently three sabotage blasts at Sasol I and Natref and four or five subsequent 'sympathetic' explosions set off in other tanks by the initial detonations.

Sources at the factories said the first blast at Sasol was at a butadine tank containing liquid and gas which exploded and was destroyed, setting off one big and three smaller fuel tanks.

A leading figure in the South African Communist Party, Mr Joe Slovo, has been pinpointed by the Minister of Police, Mr Louis le Grange, as a mastermind behind the Sasol sabotage attacks.

Mr le Grange said the stationing of Mr Slovo in Maputo was part of a well thought out plan of the SAACP and the African National Congress (ANC) to place him as close as possible to South Africa.

Mr le Grange reiterated the Government's warning that countries which housed terrorists and allowed their territories to be used as springboards for attacks on South Africa should realise the risks they were running.

Mr le Grange said the Soviet Ambassador in Lusaka, Dr Solodovnikov, played an important role in the finer planning of ANC and communist strategy.

See Page 4

Fm 13/6/80 55

ALTERNATIVE FUEL

Mornings after for motors

The introduction of gasohol into Transvaal petrol pumps later this year could cause expensive damage to motor cars and grossly inflate costs for petrol station operators. This is the view of motor manufacturers and the Motor Industries Federation.

This is true even for the proposed gasohol mixture of 10% ethyl alcohol and 90% petrol says Datsun's director of product development, Bob Robson. Datsun, he emphasises, is not opposed to the principle of adding ethyl alcohol to petrol, but motorists should be allowed a choice of fuel as they are in the US where gasohol sells for less than petrol. As things stand, conventional petrol will be completely phased out (*FM* May 2) in favour of gasohol in the southern Transvaal.

The problem is that alcohol is chemically different from petrol. It corrodes rubber, plastic, copper and zinc. This means that it will attack most car fuel lines, fuelpump diaphragms, and filler neck caps. It could also dislodge filters by dissolving their adhesives. But worst of all it can produce a sludge which could foul expensive fuel injectors. Robson believes that use of gasohol could reduce the life of some parts by as much as 20%.

Fuel tanks must be plated with lead or tin to be resistant to alcohol-containing fuel, and Robson says that not all manufacturers have used these materials in the past.

The heaviest burden from the switch to gasohol would fall on the poor, who would face the greatest costs in repairing alcohol-induced damage to their old cars.

With new cars, it will be a much easier matter to switch to alcohol-resistant materials.

With some pre-1970 car models, says *Automobil* (the official organ of the Motor Industries' Federation), there could be carburation problems caused by the sticking of accelerator pumps. But these problems can be easily corrected.

But these complaints do not exhaust the potential problems with "gasohol." According to *Automobil*, filling stations will have to introduce strict procedures to prevent contamination by water. This problem is caused by alcohol's strong affinity for water, which causes it to extract atmospheric moisture.

Water-free

Before the new fuel is introduced, filling station owners will have to purge their underground tanks of traces of water. They will have to follow rigorous procedures to keep their entire fuel supply systems water-free, for which purpose the oil companies will supply water-tracing paste. Apart from routine checks for the presence of water — for example, before the pumps are opened each day — extra checks will have to be carried out after rain and after hosing down the driveway.

The worst problem with water contamination is "phase separation." Even fairly small quantities of water will separate out the petrol-alcohol mixture into two layers — a layer of petrol and an alcohol-water layer. As the oil companies will be relying on the alcohol to raise the mixture's octane number, the alcohol-free petrol will have such a low octane number as to be almost unusable.

Automobil reports that the oil companies have agreed to rectify damage caused by water damage in filling-station tanks or dispensing systems, unless the station owner has been "blatantly negligent." But filling station operators who dispense water-containing fuel will themselves have to meet resultant claims from motorists. Placing the burden of proof might, however, prove difficult.

Acccording to an oil company, however, the industry has prepared carefully for introduction of the new fuel blend.

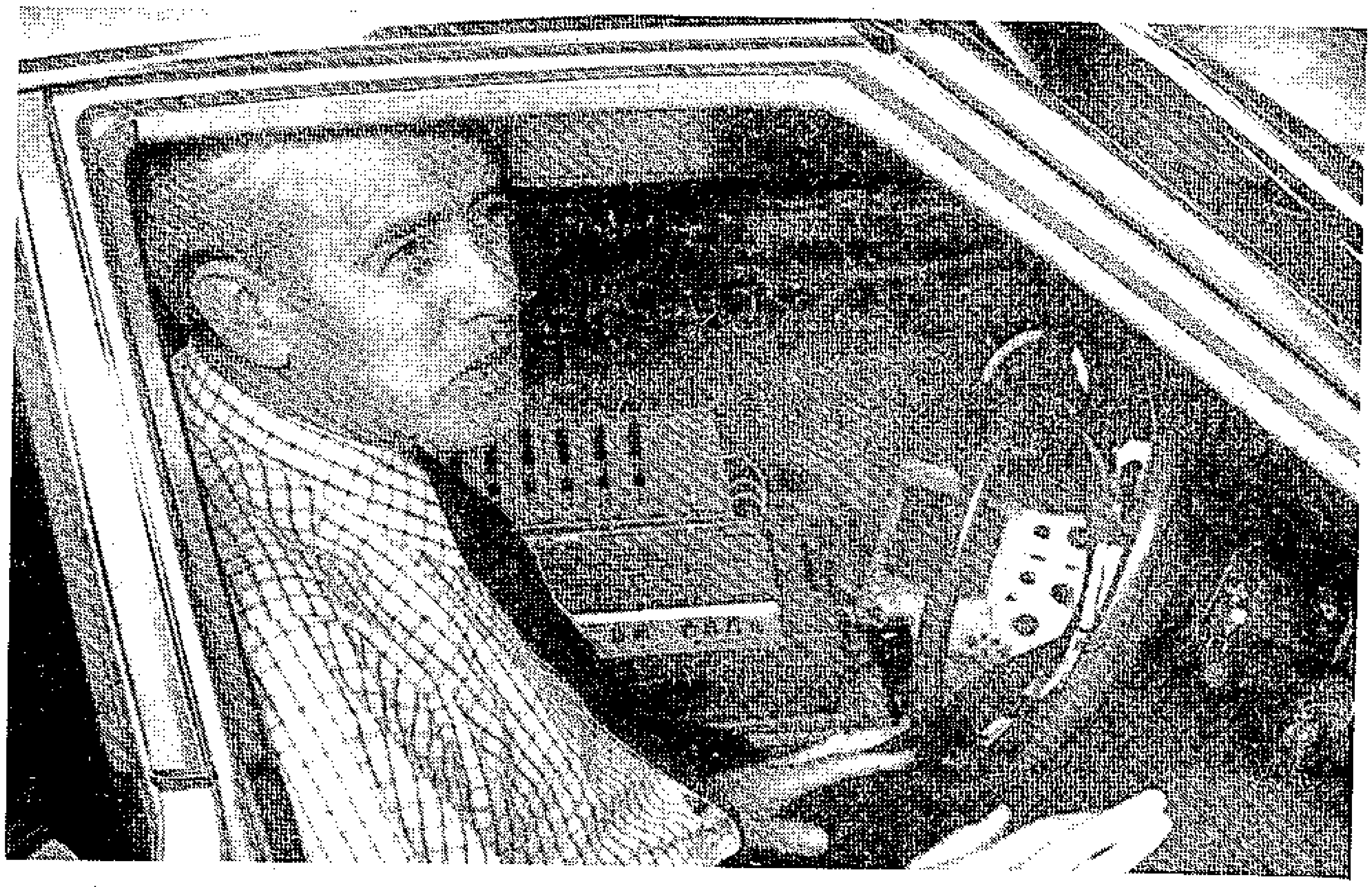
Firstly, the blend will comply with the SA Bureau of Standards specification for petrol. Then, there has been "thorough research" to ascertain whether there would be any effects on vehicles. All the SA oil companies have carried out joint experiments and investigations on the implications of marketing alcohol blends.

A committee, formed from representatives of the oil companies, paid a visit to each manufacturer of or agent for motor vehicles, including motor cycles, to obtain their individual views.

There was also a series of intensive tests on the work performance of vehicles and on the different rubber and plastic components. The AA and Rondalia carried out their own independent tests, the results of which have already been published.

The oil company says that with 10% alcohol, no engine re-tuning will be necessary. But the solvent properties of the alcohol have the following implications:

- Some rubber and plastic components, especially in older models, may have a shorter life, but replacement costs will be "only nominal."
- A little rust or scale in the fuel tank, particularly with older cars, may cause "temporary blockages" of filters, removable by cleaning. Consequently, the new blend may result in some loss in performance with the first or second tank full.
- "It is absolutely essential that the alcohol blend petrol is kept free of water either when being stored or in the fuel tank of the car. The former will be the responsibility of the supplier, who will also have to make absolutely sure that filler and dipstick caps are tightly shut at all times. Motorists can expect the same kind of problem when water gets into normal petrol."



Datsun's Robson . . . foresees problems for old cars

It's abundantly clear, though, whatever the disclaimers from the industry, that the motorist will have to exercise strong vigilance on his own behalf to minimise problems after introduction of the new blend.

DIESEL SHORTAGE

Transfusion

(55)

FM 13/6/80

There's a good chance that as much as 20% of petrol will be added to SA's diesel fuel in the not too distant future, say reliable sources. If, as is confidently hoped, this scheme proves technically feasible, it will go a long way to balancing the present shortage of diesel and surplus of petrol (caused by strenuous recent efforts to save petrol).

Diesel fuel and petrol (representing different fractions of the same family of chemically similar hydrocarbons) are completely miscible. But admixture of significant quantities of petrol have two important influences on the combustion characteristics of diesel.

The first concerns ignitability (or "cetane number"). The more viscous and higher boiling hydrocarbons which make up diesel fuel have a much higher cetane number than the more volatile hydrocarbons which make up petrol.

Nevertheless, moderate amounts of petrol can be added to diesel without depressing the cetane number to the point where there would be ignition trouble with conventional diesel engines. But, a point is reached where the fuel will cause ignition problems in conventional, unmodified diesels. Work is still being done on this aspect of petrol addition.

A second point concerns safety. Conventional diesel fuel has a flash point well above atmospheric temperature, so that the precautions required in storage are much less severe than with petrol. As increasing quantities of petrol are added the flash point — logically enough — drops. With 15% to 20% petrol, the mixture requires much the same handling precautions as petrol.

This restriction implies that the mixture would not be safe for certain high risk situations, for example where the fuel is stored inside buildings like hospitals.

Consequently, the plan is to have two distinct lines of diesel fuel. By far the larger seller would be the mixture, which would be safe for most uses, including transport. But for high risk situations, small quantities of conventional diesel would still be available.

The sources are hopeful that a 15% petrol admixture is a feasible early goal. If this can be achieved for, say, 90% of diesel fuel, a great deal of ground will have been gained in the energy struggle.

at about 9,55%.

ALTERNATIVE FUEL FM 20/6/80

Fuel for debate

(55)

Datsun's view that car fuel systems must be modified for the alcohol-petrol mixture (gasohol) which may be sold at Transvaal service stations (*FM* June 13) is not shared by some of its competitors.

Last week Bob Robson of Datsun said that the proposed gasohol mixture — containing 10% alcohol and 90% petrol — could reduce the life of some components by up to 20% as it attacks materials such as rubber, plastics, adhesives, copper and zinc.

Volkswagen, Sigma, Ford and Alfa Romeo who have carried out tests with gasohol report no power loss, no ill effects on their fuel system components, and no need for any modification.

They do, however, agree that the alcohol content of gasohol could accelerate the ageing of some already-old components in old cars; and that by dissolving rust in petrol tanks it could cause carburetion problems.

INFLATION ACCOUNTING

FM 20/6/80

55

Escom's seed-corn

Inflation accounting is becoming an increasingly important issue, and Escom's 1979 annual report includes an instructive exercise to illustrate the effects of inflation on one of SA's largest industrial operations.

The exercise is performed with an eye to the present level of electricity tariffs — doubtless to rebut a perception that tariffs are too high at present.

Escom analyses the consequences of having to acquire its stock of assets (in their actual condition of being partly used) at present-day prices. It is also assumed that Escom would have to finance the operation at the ruling rate of interest.

Certain other assumptions are made:

- The average useful life of assets is 30 years, after which they have negligible residual value;
- The current (1979) total capital cost — generation, transmission and distribution — of installing one kilowatt of capacity is R650;
- The average cost of finance raised in 1979 was 9.6%. It is assumed that the interest burden would therefore have been 9.6% of the replacement value of the assets in service in their present condition: and
- Straight line depreciation is a reasonable measure of the cost of using the assets in the production of electricity.

Escom's income statement would then have reflected sales of electricity at R1 529m, less operating costs of R668m, leaving R861m. Deduction of depreciation (R344m) and interest (R595m) leaves a loss for the year of R77,8m. To have avoided this notional loss, Escom would have had to raise its tariffs to levels 5.1% above those actually charged.

Escom's financial structure differs from that of an ordinary company. There is no share capital and it does not depreciate its assets. Instead, it has a family of three funds, each with a specific function.

The Redemption Fund is operated as a sinking fund by means of which a portion of tariff income is retained for the pur-

NUCLEAR ARMS

No purpose

FM 20/6/80

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There would be no purpose in SA developing nuclear arms, Dr Mike Hough, director of Pretoria University's Institute for Strategic Studies, argues in the institute's latest strategic review.

He says the country would obtain limited strategic and few political advantages from such arms. In fact, he adds, unless circumstances change, the country will benefit more from keeping options open in this regard by neither manufacturing nuclear weapons nor signing the non proliferation treaty.

Hough says nuclear weapons are not going to prevent insurgency, currently the most important question facing SA. "In the conventional field the South African deterrent is more than adequate in a regional and continental context," he writes. "Only an invasion by a major power could create problems for SA and here it is conceded that any such action by any great power or group of powers would have to be a largescale operation. To nullify threats of this kind, SA would have to possess the ability to threaten the territories of the great powers which naturally requires a great deal technologically."

Only if the threat should increase to a degree that there was no other choice, would it appear sensible from a strategic point of view for SA to develop nuclear weapons.

Such weapons will not advance SA's political acceptability, adds Hough. Little credence will be accorded to SA's role in this connection as a bulwark against Russian or Cuban intervention. And at international level there would be much sympathy for the African states should SA manufacture nuclear weapons herself, because these countries would feel more threatened, Hough says.

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WEEKEND ARGUS, JUNE 21 1980

THREAT TO WEST CAPE SHOWPIEC

THE tranquility of quiet little bays on the Langebaan Lagoon could be disturbed if the proposed plan for a slipway and landing stages goes through, and conservationists say the plan could threaten the proposed national park.

W/E ARGUS 21/6/80 (55)

Anger at slipway-in-park plan

By Graham Ferreira

THE Director of the National Parks Board, Mr A M Brynard, was this week dismayed to learn of plans to build a pleasure craft slipway and two landing stages in the Langebaan Lagoon, earmarked as a marine national park.

He said he would take up the matter and try to halt the development project in the lagoon, which conservationists hope will become the showpiece of the west coast.

But the Town Clerk of Langebaan, Mr F Brand, says his town needs a public pleasure craft slipway and plans to start building in two weeks' time.

'I can't see how it will influence the matter of whether or not a park is going to be set up in the area,' he said.

The president of the Wildlife Society, Dr Oluf Martiny, who is also a member of the National Parks Board, felt it would be unwise to undertake any new development in the area on the eve of an investigation by the board into possibilities of a new national park in the area.

The project is the brainchild of Mr Piet Marais, MP for Moorreesburg. He envisages a 'Kruger Park by the sea' and believes vast numbers of tourists would be attracted to the area.

Asked what he thought of the proposed slipway development he said: 'I'm completely against it.'

Conservationists believe it could spoil the concept of the national park to have numbers of motor boats launched in the area. They say it would disturb the bird life — one of the major attractions of the area.

They say the Langebaan Municipality should 'hold fire' with the project — at least until the work of the parks board scientists, who will visit the area in August, is completed.

The scientists wil evaluate the area biologically, and make recommendations for future developments and management and what direc park should take.

But the Tow said: 'We plan building in two w the Parks Board w out the R500 a inflation we will pay on our loan talk about waiting. can't ask our rat to foot the bill.'

But Dr Martiny seemed unwise to st velopments which have to be broken d the area was taken as a national park.

'We are soon to complete look. The even the possibility some land will be b up,' he said.

SA makes nuclear breakthrough

Cape Times 24/6/80 55

By BOB MOLLOY
Science Reporter

SOUTH AFRICAN Atomic Energy Board physicists have placed a South African genie in a Russian magnetic "bottle" and held it there long enough to prove that man may one day command the genie to give energy.

In a tight-lipped statement issued this week, the Atomic Energy Board said simply that "the Plasma Physics Group recently succeeded in achieving a stable plasma in a tokamak device designed and built in South Africa".

Behind this statement lies the kind of research that is the stuff of science fiction — work on an advanced energy machine using material as hot as the sun and containable only by means of enormously-powerful magnetic fields.

Known as the tokamak, a device of Russian origin, it has held the attention of physicists since the 1960s, and till this month only four other countries in the world had succeeded in raising temperatures to the plasma stage and holding it stable for a period.

The process is known as nuclear fusion — the heating of material to 100 million degrees Celsius and more — temperatures found only in the heart of the sun or at the moment of explosion of a hydrogen bomb. Hence the need for a magnetic bottle to keep the hot plasma away from the solid outer container.

But once these conditions have been achieved, it is possible to use a fuel which is obtainable from sea water. The fuel — deuterium — has world reserves which will last at least one million years even at 10 times the present rate of energy consumption.

The fusion-energy content of one gram of deuterium is equal to 8 000 litres of petrol or the explosive energy of 80 tons of TNT. And the magic of the genie doesn't stop there — the amount of fuel in a fusion reactor is so small that there is no chance of a nuclear runaway and the resulting energy is clean. There are no harmful radioactive by-products.

Six years ago the Atomic Energy Board began its research programme on hot plasma and built a tokamak device at the National Nuclear Research Centre at Pelindaba.

It was promptly named "Tokoloshe", the name for a mischievous African spirit. Commenting on this last year, the South African Journal of Science remarked drily that this was "because of the rather complex and sometimes even inconsistent behaviour of tokamaks".

The Atomic Energy Board, announcing the successful operation of Tokoloshe this week, was careful to say that it had been built purely for research purposes, but predicted that within five years world researchers would make the breakthrough of generating energy from a fusion reactor.

● Diagram, page 2

Summit pledge to cut back on oil

(55)

RDM 24/6/80

VENICE. — The United States and its six main industrial allies yesterday resolved to make huge savings in their oil consumption over the next decade and said a solution to the energy crisis was the key to future prosperity.

The leading non-communist industrial nations said they would make "a co-ordinated, vigorous effort" to save the equivalent of 15 to 20-million barrels of oil a day by developing alternative energy sources.

Officials said present oil consumption among the seven was between 32 and 33 million barrels a day.

President Jimmy Carter and the leaders of France, West Germany, Britain, Italy, Canada and Japan committed their countries to doubling coal production by early 1990 and to increased use of nuclear power.

US officials said their country intended to step up coal production from 800-million tons a year at present to 1 200-million tons over the decade.

To reduce dependence on ever scarcer oil supplies, the seven leaders agreed at their annual economic summit to reduce the share of oil in total energy demand from 53% now to about 40% in 10 years' time.

The seven leaders said their immediate top priority was the reduction of inflation, adding: "Determined fiscal and monetary restraint is required to break inflationary expectations."

The communique summarising the conclusions of the two-day summit added: "We must retain effective international co-ordination to carry out this policy of restraint, but guard against the threat of growing unemployment and also to avoid a worldwide recession."

The communique said there was no quick and easy solution to the current global energy crisis, but future prosperity depended on finding one.

Mr Carter told a news conference later that the seven leaders were determined to break the link between economic growth and oil consumption.

"We agreed on a concrete and definite commitment, which is binding on us all. We will now return to our own countries and we will have to make sacrifices," he said.

The joint statement on economic strategy in the 1980s was approved by President Carter, French President, Mr Valery Giscard d'Estaing, the West German Chancellor, Mr Helmut Schmidt, the Prime Ministers, Mrs Margaret Thatcher of Britain, Mr Francesco Cossiga of Italy and Mr Pierre Trudeau of Canada, as well as the Japanese Foreign Minister, Mr Saburo Okita.

The seven heads of state and government leaders emphasised their concern about the financial plight of developing countries following the latest round of oil price increases.

They shelved the idea of a world economic summit, including oil producing and developing countries, for further consideration, senior conference officials said.

This was one of the main recommendations of the recent report on north-south issues by a commission headed by the former West German Chancellor, Mr Willy Brandt.

The leaders believed Opec should do much more to help the Third World through economic aid.

They also wanted the World Bank to help poor countries with loans to boost energy exploitation.

On the question of recycling Opec's huge oil surplus, the seven believed that the international capital market had to play a primary role, but that international institutions, especially the International Monetary Fund, could expand their operations.

They also intended to reaffirm well-established opposition to protectionism in international trade, the conference sources said.

No shortage of coal during the cold spell

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RDM 24/6/8

Staff Reporter

THERE is no shortage of coal.

Fears that black householders may be stranded for coal during the cold spell which has gripped the Reef were allayed yesterday by the chairman of the Transvaal Coal Merchants' Association, Mr Wilfred Stoloff.

He said there were "absolutely no problems" as far as the availability of coal for the black areas, including Soweto, was concerned.

He was supported by black coal merchants in Soweto and the East Rand townships, who said there were sufficient supplies at the moment to meet their needs.

The only serious shortage had been about two to three weeks ago when there were delays by the railways in delivering small nut coal — used in smokeless stoves. But the situation had now stabilised.

South African Railways have been sending "block loads" — complete train loads — to coal depots in black areas and there were now "mountains" of coal at some coalyards there.

One cause of the "temporary shortage" was that many dealers had not stock-piled and as a result could not meet the needs of consumers when the demand arose.

One of suppliers' major priorities was supplying dealers in black areas, where coal was needed for cooking and heating, Mr Stollof said.

"I can assure you that as far as black areas are concerned there will be no shortage."

A leading Soweto coal dealer, Mr Christopher Mageza said they were receiving a "reasonable supply". Most of the problems experienced by dealers stemmed from the fact they had not stockpiled.

"A few weeks ago there was difficulty in getting coal delivered by rail because railway trucks were being used for other functions, such as transporting maize to neighbouring countries.

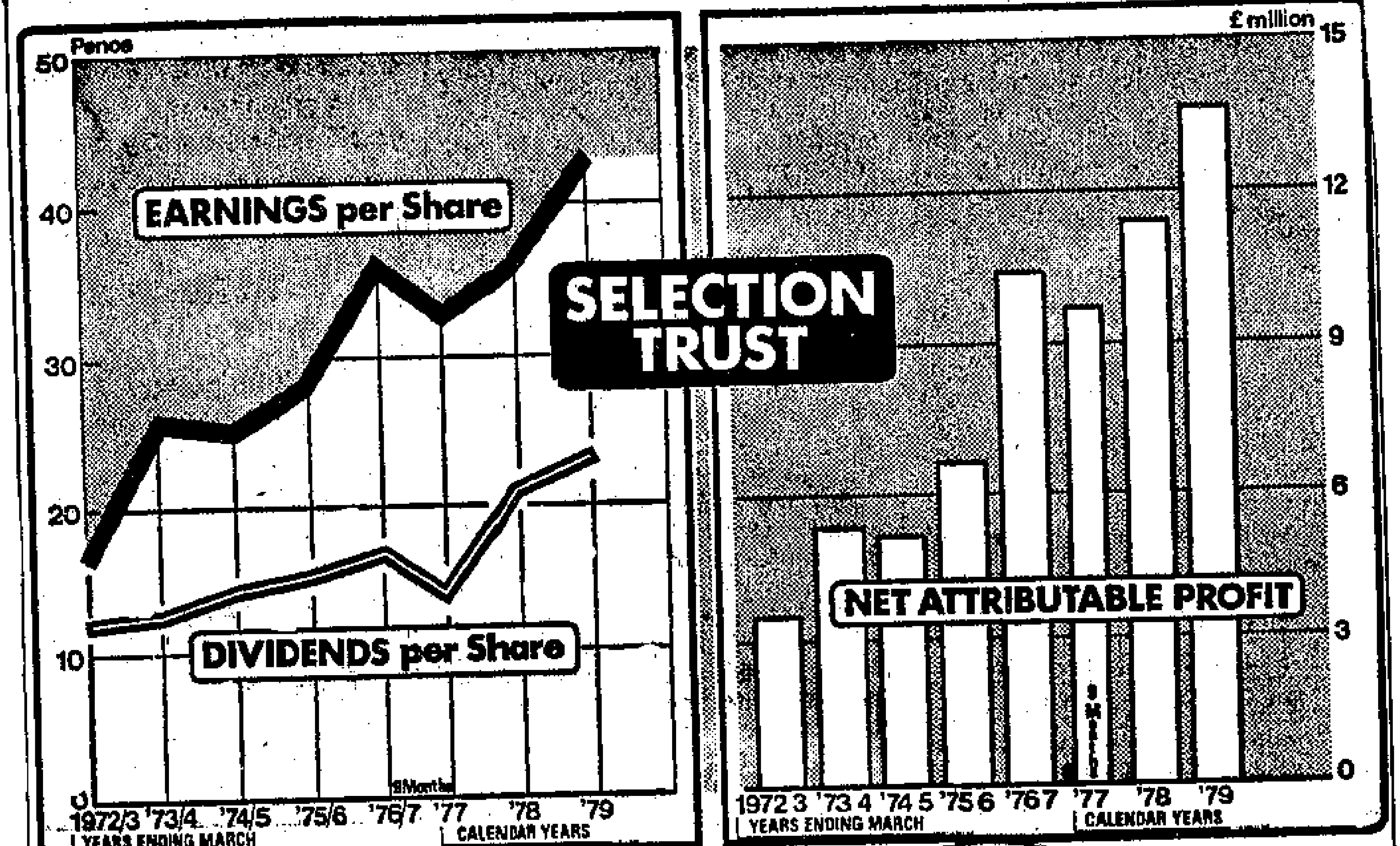
Mr Mageza said dealers who had standing orders were receiving a "fair supply". Their main problem was getting "pea coal" — the smokeless coal popular in Soweto.

Meanwhile, coal merchants in East Rand black townships said yesterday they had so far not experienced a shortage.

A spokesman for South African Railways, Mr Izak de Vries, said reports that there was little hope of coal reaching the depleted depot in Nancefield today were alarmist.

He said 32 railway trucks loaded with coal were at a clearing yard at Angelo Station, near Germiston, and were expected to reach the depot either last night or this morning.

He said the railways transported coal to the depots as often as the demand arose.



Seltrust bid — is BP right for it?

RDM 24/6/80

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By Andrew Wilson

LONDON. — There are few takeovers mooted and fewer completed in the mining industry. But when they do occur, the numbers involved are frequently enormous.

The latest, the British Petroleum approach to Selection Trust, values the entrepreneurial mining house at £364-million with the shares at £11-1/2.

Why BP wants Seltrust is fairly obvious. The oil major has been more successful than many of its rivals in developing energy alternatives in South Africa and Australia and has had the sense, on the other hand, to adopt the role of junior partner where necessary.

But is BP right for ST?

Here a few sums need to be done. Seltrust has 6,8% of Amax worth around $90-million. The income return from this is a mere 4%, or so, on the open market value of the investment.

Seltrust has always argued quietly that Amax has provided the asset backbone for bank loans which otherwise would have been obtainable only at higher interest rates.

It is a moot point whether BP or any other predator would retain this holding. Certainly, for an oil company, the decision would be very much political rather than financial, even if it did reduce the capital cost by around 25%, or about 18% after allowing for the capital gains tax, on the holding.

Another is the 34% stake in Unisel now capitalised at about £45-million. Few South African institutions would be prepared, or able to take this on board other than the Anglo American group.

Certainly, General Mining/Union Corporation would be unwilling, as this would leave their holding at 63% and they have better things to do with their liquidity in the development of other gold and uranium properties to the south of Unisel in the Orange Free State and the Transvaal coal and uranium projects.

Consolidated Gold Fields has indicated it is most unlikely to counter-bid, and at Seltrust's present price, it does not have sufficient ammunition unless it goes for a blocking manoeuvre.

Here one enters on to dangerous ground. Harry Oppenheimer's De Beers and Anglo American have between them 25% of the Cons Gold equity. Another arm, Charter Consolidated has 27% of Seltrust.

As De Beers appears to have upset the Department of Trade earlier this year through the market raid upon Cons Gold, any move to increase the Oppenheimer stake in the British mining houses would almost certainly lead to a Monopolies Commission reference with the only let-out being the transfer of Charter's stake in Cons Gold.

MPs can sway Dutch embargo decision

280 85 55

RDM 25/6/80.

Own Correspondent

THE HAGUE. — The Prime Minister of the Netherlands, Mr Dries van Agt, has promised to inform parliament of his decision on oil sanctions against South Africa by this afternoon.

His centre-right coalition cabinet failed to reach agreement on the parliamentary demand for an independent Dutch oil embargo against South Africa when they met in special session on Monday.

While the cabinet remains locked in conflict over this issue in spite of several sessions, the conservative Netherlands Christian Trade Union Federation (CNV) has come out in strong support of Dutch sanctions.

The CNV — smaller than the Leftwing Federation of Dutch Trade Unions (FNV), which has backed sanctions for almost a decade — is highly influential in conservative political circles.

The CNV could, therefore, help sway the divided cabinet, in which Rightwing Liberal Party Ministers are at loggerheads with the dominant Christian Democratic Appeal (CDA).

Though signals from the cabinet suggest that it might accept the parliamentary demand for an end to Dutch oil and oil product exports to South Africa, it is not yet certain that Mr Van Agt is prepared to lose face and allow the policy turnabout that this would require.

His cabinet remained vehemently opposed to an independent Dutch move towards sanctions right up to the last Wednesday's decisive vote that put him in the present predicament.

Though the CDA Ministers remain personally opposed to an embargo, they know they will have to reckon with the majority of their MPs, who supported the vote.

The CNV's demand for sanctions and, in addition, a stop on new investment, tighter credit restrictions and a ban on Dutch citizens doing national service in South Africa, will make it even more difficult to turn down the demand by MPs.

Sources at the Binnenhof paliamentary buildings in the Hague say MPs are in no mood to back down in the face of a cabinet challenge.

Though 38 of the 49 Christian Democrats abandoned the government to support the opposition last week, not all will back a no-confidence motion if the cabinet does not give way.

The sources say, however, that nine Christian Democrats seem prepared to topple the government if it does come to a no-confidenc debate — and that is enough if all 150 MPs are present.

Mr Van Agt rules with support from 77 coalition party members and a few Rightwing splinter groups. Only eight of his own CDA members need to defect to undermine his support and give the Labour Party opposition the axe it needs to fell the coalition.

OAU plan to check on oil for SA

RDM 25/6/80 55 ~~230~~ 230

FREETOWN. — Ministers of the Organisation of African Unity, meeting in Freetown, Sierra Leone, to prepare for next week's summit, have recommended monitoring the movement of oil tankers to South Africa as part of a campaign to tighten sanctions against the country, an OAU spokesman has said.

Dr Peter Onu, OAU assistant secretary-general, said the Ministers had also decided to set up an oil bank to protect neighbouring black states in the event of South African retaliation against a boycott.

"Without oil, South Africa cannot continue its repressive measures and conduct attacks against neighbouring states," he told reporters.

He said the Ministers had decided there should be a comprehensive stand by the organisation on the question of an oil embargo against South Africa, and that it would contact members of the Organisation of Petroleum Exporting Countries (Opec) about a contingency oil bank for the landlocked neighbouring countries.

Dr Onu did not say how the tankers would be monitored, but commented: "We are trying to plug the leak-holes. When tankers get on the high seas, we don't know where they go."

He said the Ministers had called for a study of how a boycott against South Africa would affect Swaziland, Lesotho, Zimbabwe and Botswana.

They urged that there should be a new diplomatic initiative by the OAU, with Western nations, to enforce such an embargo.

The Ministers said the Security Council should be asked to "reaffirm its stand" on an oil embargo against South Africa, Dr Onu added. — Sapa-Reuter.

G: OR be allowed to be 69 goods stuff

Iraq joins Opec queue to raise oil prices

55

RDM 26/6/80.

LONDON. — Iraq is raising the price of its Basrah light crude by $2 to $31,96 a barrel from July 1, according to oil industry sources in Tokyo.

Kuwait announced two weeks ago that it would raise its oil price by $2 to $31,50 a barrel on July 1, and the oil industry expects more increases in the next few days to be disclosed by other members of the Organisation of Petroleum Exporting Countries.

Opec ministers decided in Algiers on June 10 to fix a $32 ceiling for marker Gulf type crude of the kind produced by Iraq and Kuwait.

A $37 maximum was fixed for premium oils, such as those of North Africa, which are produced close to markets and are of high quality.

The new ceilings gave most Gulf producers the option of going up by $2 and left scope for smaller increases by Algeria, Libya and Nigeria which are close to the $37 premium ceiling.

The Saudi Minister of Oil, Sheikh Ahmed Zaki Yamani, said in Algiers that Saudi Arabia — the biggest producer — would not necessarily increase its $28 price — the lowest in Opec — before September, although he did not rule out its going up "a dollar or so".

Depending on what the Saudis do, Opec officials calculated that the Algiers agreement would add, during the third quarter, between $1 and $2 to the average Opec rate of just under $32 a barrel.

Iran's Minister of Oil, Mr Ali Akbar Moinfar, said in Teheran yesterday that it "is 90% certain" Iranian prices will be unchanged in July. Iran charges an official $33,50, a high price for Gulf crude, to which it adds a $3 premium on half the oil it sells on contract.

Its decision to raise prices by $2,50 from April 1 caused Japanese and European buyers to cease their Iranian imports, which totalled a million barrels a day.

* * *

NEIL BEHRMANN reports that the major Western industrial nations agreed at their Venice summit this week to reduce oil consumption dramatically. This would be achieved mainly by doubling coal production and making greater use of nuclear energy.

The United States, Germany, Japan, France, Britain, Italy and Canada aim to save 15-million to 20-million barrels of oil a day compared with their present consumption of 33-million barrels a day.

The share of oil in their energy consumption should fall from 53% to 40% by 1990.

The leaders of the seven nations agreed that oil-fired power stations should be built only in exceptional circumstances.

To increase alternative energy efforts, there would be fiscal incentives to accelerate the substitution of oil in industry.

There would be incentives to encourage oil-saving measures in residential and commercial buildings.

The leaders agreed to encourage fuel-efficient vehicles through petrol pricing, taxation, research and development and by making public transport more attractive.

They "desire to increase the supply and use of energy sources other than oil, seeking a large increase in the use of coal and enhanced use of nuclear power in the medium term, and a substantial increase in the production of synthetic fuels, in solar energy and other sources of renewable energy over the longer term".

The supply and price of energy was the dominating issue at the summit.

The British Prime Minister, Mrs Margaret Thatcher, said that poor countries "have the worst problems of the lot". Aid from the industrialised nations was not even sufficient to match the increase in oil prices since 1978.

Mrs Thatcher said Opec nations should be persuaded that they should extend more help.

The leaders agreed that controlling inflation was another priority. They said the Eighties would be far more difficult than the Seventies.

But commentators say it is clear that the seven leaders have no new prescriptions to cure the West's economic ills.

The leaders decided to resort to the classical methods of curbing inflation — fiscal and monetary restraint.

They stressed that resources should be shifted away from the government to the private sector.

The leaders were worried about the 125% increase in oil prices over the past 18 months. They said that large increases in the oil price had borne no relation to market conditions and had "produced the reality of even higher inflation and the imminent threat of severe recession in the industrialised countries. At the same time they have virtually destroyed the prospect of growth in the developing countries."

Dutch Govt totters over SA sanctions

95

RDM 27/6/80

By BRENDAN BOYLE

THE HAGUE. — There were confusing signals yesterday from Christian Democratic Appeal members in the Dutch Parliament as they prepared for the debate that would decide whether South Africa was an issue worth the sacrifice of a government.

Before the snap debate opened last night, it had become clear that most of the 38 CDA members who refused last week to rescue their government from an embarrassing crisis were out to prop up the teetering Cabinet in the final sitting before the summer recess, which begins today.

But there was no clear indication of how the 10 so-called dissidents in the CDA would vote after the third debate in seven months on oil sanctions against South Africa.

These dissidents are CDA members who in 1978 refused to sign the coalition accord laying the ground rules for co-operation in government between their own Centrist party and the Rightwing Liberal Party.

In almost three years of government, the 10 have repeatedly challenged the conservative lead given by the Christian Democrat Prime Minister, Mr Dries van Agt.

Abortion, public spending cuts, nuclear arms policy and sanctions against South Africa are some of the issues on which they have led the coalition to the brink of collapse — before retreating at the last moment to grant the Cabinet a few more months of security.

Led by Mr Jan Nico Scholten, the 10 headed the latest revolt last week, when 38 of the 49 CDA members failed to back the Cabinet's rejection of independent oil sanctions against South Africa.

By siding with the socialist opposition, they challenged the government to a showdown.

Dutch pressure groups and the two major trade union federations, as well as the powerful Leftwing Press, the United Nations and the World Council of Churches, have all urged the Cabinet to accept Parliament's demand for sanctions.

But there was barely the faintest chance as the debate began last night that the government would back down at this late stage.

In their steadfast rejection of a lonely Dutch initiative on sanctions, the Cabinet Ministers had the full support of commerce and industry, the European Econmic Community and the conservative Press.

In a tense chamber yesterday, MPs were fighting for the support of the CDA dissidents, whose votes would mean life or a premature death for the coalition government.

Nine CDA votes against the government would mean elections in November — eight would mean a holiday before the new session in September.

SABS sets new fuel consumption test

(55) RDM 28/6/80.

By JEREMY BROOKS

A FORMULA, or "code of practice", to test fuel consumption in motor-cars in both city and highway traffic, has been completed by the South African Bureau of Standards (SABS) after more than two years' research.

The SABS hopes that the code, once it is accepted by manufacturers, will become a valuable guide to prospective car owners, who can make comparisons between different models.

"The old practice of advertising that a car uses, for example, 7ℓ to every 100km, is totally outdated," Mr Ian Charlton, head of the SABS division of automotive engineering, said yesterday.

"The car's performance could have been affected by any number of variables such as speed, temperature and weather conditions during the test, and it is unlikely to live up to the owner's expectations."

The SABS code lays down conditions for testing a car with a specified load, at steady speeds of 60km/h, 90km/h, and an "urban driving cycle", with stop-start driving in heavy city traffic conditions at speeds of up to 50km/h.

Drivers had to be specially trained to conform to the exacting requirments of, for example, accelerating to a certain speed within a few seconds, maintaining that speed for a specified length of time, and then braking before accelerating again.

The SABS conducted extensive tests on two models, which they declined to identify, but which had a gross vehicle mass lower than 3 500kg, at a site several hours' drive from Pretoria:

- The first car used 12ℓ for every 100km in the urban driving test. The consumption decreased to 6,5l/100km at a speed of 60km/h, and increased again to 8,2l/100km at 90km/h.
- The second car, in the urban driving test, used 13,2l/100km. At 60km/h consumption decreased to 7,8l/100km, and increased again to 9,5l/100km at 90km/h.

"The prospective car owner should in no way take the figures as an accurate indication of the consumption of the particular car he is buying. They are meant purely as a comparative guide," Mr Charlton said.

"Each driver has his own characteristics, and each car is driven in a different manner under differing conditions."

The SABS carried out tests to compare actual consumption figures in heavy city driving with those calculated using the code.

In one case a fleet of 50 cars was found to have an actual fuel consumption 36% better than that calculated using the code.

The SABS code is new to South Africa, but is similar to others already in operation in European countries where, in some cases, it is compulsory for manufacturers to publish the petrol consumption figures of their vehicles.

"Because the method is new it may take some time before manufacturers are able to publish the figures. However we expect the code to become increasingly popular in light of the rising cost of fuel," Mr Charlton said.

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Rough ride ahead for Dutch Govt

~~97~~ ~~280~~ 55

RDM 28/6/80

THE HAGUE. — The future of the Dutch Government was in doubt yesterday after it narrowly survived a parliamentary censure motion.

The Prime Minister, Mr Andreas van Agt's Centre-Right Cabinet scraped in on a 74-72 vote at dawn after a marathon debate on its refusal to impose a unilateral oil boycott against South Africa.

The opposition leader and former Prime Minister, Mr Joop den Uyl, who submitted the censure motion, said: "This long night has shown clearly that the Cabinet's future is hanging by a thread."

Earlier in the debate, 13 deputies from the Leftwing of Mr Van Agt's Christian Democratic Party, helped to defeat the government by voting for an oil embargo because of South Africa's apartheid policy.

The government has said it favours an embargo, but that unilteral action would have insufficient impact without the support of the rest of the European Economic Community.

Parliament adjourned yesterday for the summer recess, but when Ministers return, they will face the difficult task of piloting an austerity budget through the Chamber.

The coalition government, which took power with a majority of two seats 30 months ago, has been under fire over a series of issues.

Elections are not due until next May, but political sources said they expected pressure on the Cabinet to build up during debates preceding the 1981 budget, which is likely to propose income cuts for most Dutch workers.

During the debate, Mr Van Agt promised fresh initiatives to bring about an international embargo against South Africa.

He said Ministers would begin talks soon aimed at enlisting the support of Belgium, Luxembourg, Norway, Denmark, Sweden and perhaps Finland.

In Copenhagen, a Foreign Ministry source said he expected Denmark would fully back an embargo.

In Oslo, a government spokesman said Norway believed an embargo could be imposed only on the basis of a United Nations Security Council resolution, while in Stockholm, a Foreign Ministry official said Sweden was unlikely to join an oil boycott.

Mr Van Agt told parliament his government intended to signal its abhorrence of apartheid by making it compulsory for South African visitors to the Netherlands to have visas, by increasing aid to black African states to make them less dependent on South Africa and by abrogating a bilateral cultural treaty.

The CDA dissident leader, Mr Jan Nico Scholten, said domestic party political interests should not come before efforts to improve the lot of South Africa's black majority.

By passing last week's resolution with such an overwhelming majority, the Dutch Government had given a signal to the world that South Africa would have to radically alter its policy of separate development for blacks and whites, he added.

Meanwhile in Freetown, Sierra Leone, African Foreign Ministers, trying to tighten sanctions against South Africa, said yesterday that companies which supply oil to South Africa should be penalised.

A draft resolution from an Organisation of African Unity Ministerial Committee, spoke of "the negative role played by some oil companies which engage in secret arrangements to supply South Africa without the knowledge and approval of the oil exporting countries".

It said there was a need for the OAU to consult with oil exporting countries to develop measures to monitor the activities of companies doing business with them.

The draft said individual and collective penalties should be imposed on those companies that violated the oil embargo on South Africa imposed by the Organisation of Petroleum Exporting Countries. — Sapa-Reuter.

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NOTE CAREFULLY

1. The answers only on the right hand pages will be marked. The left hand pages may be used for rough work, but no credit will be given for such work.
2. Enter at the top of each page and in column (1) of the block on this cover the number of the question you are answering.
3. Blue or black ink must be used for written answers. The use of a ball point pen is acceptable. Red or green ink may be used only for underlining, emphasis or for diagrams, for which pencil may also be used.
4. Names must be printed on each separate sheet (e.g. graph paper) where sheets additional to examination book(s) are used.

WARNING

1. No books, notes, pieces of paper or other material may be brought into the examination room unless candidates are so instructed.
2. Candidates are not to communicate with other candidates or with any person except the invigilator.
3. No part of an answer book is to be torn out.
4. All answer books must be handed to the commissioner or to an invigilator before leaving the examination.

Any dishonesty will render the candidate liable to disqualification and to possible exclusion from the University

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Coal shortage comes as cold sets in

RDM 28/6/80

Staff Reporter

SOUTH Africa is facing one of it's most critical coal and anthracite shortages, and as temperatures are set to plunge, the prospects look bleak.

Some coal distributers have been forced to ration their customers to one bag of coal or anthracite per person, and domestic deliveries have stopped altogether.

Alexandra township has been hard-hit by the shortage, as have the northern and north-eastern suburbs of Johannesburg.

At the Wynberg coalyard yesterday afternoon, supplies ran out completely and queues of people, including Alexandra coal merchants, were turned away empty-handed.

The managing director of the Transvaal Coal Owners' Association and chairman of the Anthracite Producers' Association, Mr Richard Bird, has reported a nation-wide orders backlog of 20 000 tons of coal which cannot be supplied.

In a statement released last week, Mr Bird said that "technical difficulties at the collieries" were responsible for the chronic shortage.

The shortage could not have come at a worst time for coal merchants as their business viability depends on coal sales during the winter.

Mr Wilfred Stoloff, the managing director of McPhails coal distributers, and chairman of the Transvaal Coal Merchants' Association, said the situation had been getting steadily worse since the beginning of June.

"There is a desperate shortage, and there is absolutely no anthracite available to deliver to the household consumer," Mr Stoloff said.

"It's all very well to say the collieries are experiencing difficulties, but it is the distributer who has to face the music when irate customers who ordered coal months ago phone up and want to know where it is.

"In fact, we are the people in the frontline of the attack, because business is really only viable during the winter months.

"We are incapable of delivering coal at the moment and have to give priority to hospitals, hotels, bakeries and drycleaners.

"Domestic consumers have to come to our coal yard to get coal, and even then are rationed to one bag per person," he said.

British journal claims: RDM 28/6/80

~~232~~ ~~244~~ 55

Oppenheimer link in BP, Sel Trust, Cons Gold deals

BY NEIL BEHRMANN

THE CHIEF executive of Consolidated Gold Fields, Mr Rudolf Agnew, said of the Financial Weekly report: "It is total fiction from a Cons Gold point of view."

A BP spokesman said: "We are not prepared to comment on speculative stories."

An Anglo American spokesman declined to comment.

The City editor of Financial Weekly said the sources were "impeccable".

LONDON: — British Petroleum originally wanted to buy Consolidated Gold Fields, according to a British journal, Financial Weekly.

It suggests that Mr Harry Oppenheimer blocked BP's approach to Cons Gold and in a quid pro quo is backing BP's bid for Selection Trust.

Financial Weekly says: "The discovery of a secret meeting aboard HMS Belfast last November confirms that British Petroleum, which has launched a £400-million-plus takeover bid for Selection Trust, initially wanted to buy another mining-finance house, Consolidated Gold Fields.

"The meeting adds weight to City speculation about the informal arrangements made between the British oil giant and South African mining magnate, Mr Harry Oppenheimer, over a complex carve-up of the mining sector.

"Almost as soon as the UK Government decided upon its £290-million sale of BP shares to the public last November, a secret meeting was negotiated between BP and Cons Gold on board HMS Belfast, moored in the Thames and a daytime London tourist attraction. The Friday evening meeting was attended by nine senior executives from each company.

"In the ensuing months Cons Gold shares became the subject of continuous rumours of a stock accumulation culminating in the famous February £150-million dawn raid by Mr Oppenheimer's De Beers Consolidated and Anglo American finance groups.

"By open-market purchases of Cons Gold shares they amassed a defensive stake of 26%.

"It is considered significant that the dawn raid was launched almost at the same time as final payments were due on the Government's sale of BP shares — a point in time when BP would be free of prospectus restraints.

"Mr Oppenheimer has in subsequent comments expressed the view that he believed the predator lurking in the background of Cons Gold's share activity was not the rival South African General Mining group, but a major international oil company. That oil company was clearly BP."

Having been blocked in its Cons Gold move, BP turned its attention to Selection Trust, whose largest single shareholder is the Oppenheimer-controlled Charter Consolidated, which holds 27,23%. It has close links with De Beers and Cons Gold.

Mr Oppenheimer, therefore, has considerable influence over the terms Selection Trust will accept from BP. And, having prevented a takeover of Cons Gold, City suggestions are that, subject to acceptable bid terms, Mr Oppenheimer will support BP's move into Selection Trust.

BP has been anxious to pursue long-term expansion and development of its mining interests, but few City observers believed that BP would be keen to go back into South Africa.

However, a takeover of Cons Gold would not have precluded a hive-off of a large part of its South African assets to provide backing for Cons Gold's recent expansion in world-wide mining, in energy equipment and its extensive business providing drilling and servicing rigs for the oil industry.

The "Gold Fields group" is said to hold a large stake in the Ultramar oil group now enjoying success in both the North Sea and Canada. And so Mr Oppenheimer's unwillingness to see a BP-controlled Cons Gold is understandable.

BP's ultimate bid terms for Selection Trust are expected to be a mixture of cash and loan stock worth upwards of £400-million which would be underwritten and probably have options for conversion into ordinary stock. This would water down the UK Government stake — split between 25,69% owned by the Treasury and 20,13% in the hands of the Bank of England.

Before the article appeared several stockbrokers thought that a quid pro quo deal between Mr Oppenheimer and Cons Gold made a lot of sense — especially as Mr Oppenheimer told the Sunday Telegraph that the original bidder for Cons Gold was not General Mining and "might have been an oil company".

CANDIDATE MUST enter in (1) the number of each question ...d (in the order in which it has ...swered); leave columns (2) and ...k.

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...the block on this cover the number of the ... you are answering.

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EDSON 15255

Gas price boost (55) KO for Jo'burg

RDM 3/7/80

By GRAHAM BROWN

JUST two weeks after Johannesburg residents were hit by an average 11 per cent increase in rates and tariffs comes another power jolt — gas tariffs will soon jump by about 19 per cent.

The city council's housing and utilities committee was told yesterday that the State-sponsored Gas Corporation had announced it was about to raise the price of gas sold to the council by 29 per cent.

Gascor supplies about 80 per cent of Johannesburg's gas. The rest is produced by the council itself.

The chairman of the utilities committee, Mr Wouter du Toit, could not be reached for comment last night, but it is reliably understood that the committee resolved to recommend passing on 19 per cent of the increase to consumers, and absorbing the remaining 10 per cent by paying for it from the general rates fund.

(55) RDM 3/7/80

World oil demand to fall

LONDON. — World energy demand this decade will be noticeably less than expected, with OECD demand expected to fall by 3-million barrels a day (b/pd) in 1980 and a further million b/pd in 1981, says Economic Models in a world energy forecast.

It says OECD demand by 1990 could be 1 500 000 b/pd below 1979 consumption of 39 900 000.

The immediate implication of this forecast is that both the International Energy Agency's objectives and some of the broad targets agreed to at the Venice summit will be met sooner than expected, it says.

The Economic Models study says that in most aspects the present recession is forecast to be more severe than in 1974-75.

For instance, the US should have a gross national product drop of 1,6% in 1980 and a drop of 2% in 1981, to be followed by a weak recovery with 1,8% growth in 1982.

"Given the high North American energy consumption per dollar of GNP, the extraordinary severity of the slump there will produce an unexpectedly sharp decline in net oil imports, thus substantially weakening the international oil market in the next two years."

Economic Models says the second half of 1980 will be characterised by pronounced oil destocking.

Commenting on Iran's oil price of more than $35 a barrel, it says Iranian exports will start increasing appreciably as soon as some formula can be devised to allow Iranian oil prices to reach parity with other Opec crudes.

The expectecd increase in Iranian exports, coupled with a continuing fall in demand for Opec oil, will cause an oil glut of such proportions that the surplus will only be soaked up by Saudi Arabia's cutting production.

Economic Models says Saudi Arabia is expected to resume control over oil pricing by the end of 1980 in spite of appearances at the Opec meeting in Algiers.

Saudi Arabia is likely to seek to maintain real oil prices by cutting its output to about 6-million b/pd from the current 9 500 000.

"For 1981, we are expecting at best a small decline in the real price of oil — mainly resulting from special price deals negotiated by some Opec members in order to maintain their sales."

OECD net oil imports will fall to 21 800 000 bp/d in 1980 from 25 800 000 last year. Imports are estimated at 19 900 000 bp/d in 1985 and 22 700 000 in 1990.

Reduced imports will reflect the abolition of oil price controls in North America, the impact of crude prices on retail product prices, sluggish economic growth and the development of other energy sources.

In the UK, energy consumption is forecast to drop to 190-million tons of oil equivalent in 1980 from 205-million tons last year. Oil consumption will decline almost continuously through the decade because of greater use of gas and coal.

Economic Models says Britain's North Sea oil output is expected to peak at 2 700 000 b/pd in 1985-86. Net exports from the UK will rise from 160 000 b/pd in 1980 to 1 260 000 by 198, falling to 880 000 by 1990.

In the US, net oil imports are forecast to drop from 7 600 000 b/pd in 1979 to 4 800 000 in 1985, then recovering to 5 200 000 by 1990. The decline would reflect both high energy costs and a deeper recession than in 1974-75.

Japan's oil import bill will become much less menacing than feared in recent years because of a large expansion of liquefied natural gas imports, increasing coal imports and energy conservation successes. — Reuter.

BP in R768m bid for Seltrust group

RDM 8/7/80

LONDON. — THE biggest takeover bid in London's financial history is announced, with British Petroleum offering more than R760-million for the big mining finance group, Selection Trust, in another bid by a giant oil company to diversify away from oil.

British Petroleum and Selection Trust, both issued statements saying their boards had agreed to terms of a R763-million offer by B P for Seltrust's shares.

The announcement came after weeks of speculation. Three weeks ago B P said it was interested in the group, and speculation hotted up after shares in the two companies were suspended on Friday.

It follows a trend by the world's leading oil companies to diversify their activities.

B P and others have been turning their attention increasingly towards mining, coal and other minerals, in the face of rising oil costs, calls for oil conservation and the eventual prospect of oil supplies running short.

B P has made little secret of its wish to expand. Earlier this year, B P chairman, Sir David Steel said that although the company wanted to develop oil and gas resources wherever possible, it also wanted to move into other activities "mainly connected with the production and use of energy and other resources".

B P already has a successful mining division, B P Minerals, and is a big coal producer in the private coal industries of Australia and America.

But the acquisition of Selection Trust would be a major change in the shape of the partly government-owned B P.

The London-based finance group pumps money into mining projects including nickel mining in Western Australia, copper, zinc and silver in Australia and Canada, gold in South Africa and Nevada, iron ore in Australia and diamonds in West Africa.

The offer by B P is subject to agreement by the companies' shareholders and by the usual stock market and international authorities.

About 26% of the shares in Selection Trust is owned by Charter Consolidated, the mining finance house linked with Mr Harry Oppenheimer.

B P said that Charter Consolidated intended to accept the offer, as did the directors of Selection Trust, who held about 2% of the shares in their company.

B P is offering 18 of its shares for every five Selection trust shares. This works out at £13,46 for each Selection trust share based on stock market prices before Friday's suspension.

The total sum of £427 700 000 is about £50-million more than the previous record bid in London set by Grand Metropolitan's takeover of Watneys Brewery Company in 1972.

Selection Trust shareholders have also been offered an alternative by B P, if they prefer cash.

This amounts to £12,75 a share which would value the whole company at £405 200 000.

B P said acquisition of Selection Trust would give it a vehicle for developing its mining interests consistent with its policy of expanding into non-oil based extractive industries.

Mr Robin Adam, a B P managing director, said: "We are very pleased that we have been able to reach agreement with Selection Trust, which represents some of the best expertise in the international minerals industry."

He said it was intended that Selection Trust would operate as a separate company within the B P group.

The chairman of Selection Trust, Mr John du Cane, said: "We in Selection Trust have frequently expressed our faith in the future of the mining industry, and our belief that the world is facing a serious shortage of metals in the not too distant future." — Sapa-Reuter.

~~232~~ 55 ~~20~~ ~~210~~

Mr O gives nod to giant BP takeover

~~210~~ ~~230~~

RDM 8/7/80 55

By HOWARD PREECE, Financial Editor

MR HARRY Oppenheimer yesterday gave his blessing and crucial approval to the biggest takeover deal in British financial history.

British Petroleum, the oil giant, announced details of a R768-million (£428-million) bid for Selection Trust, the US-based mining, mineral exploration and mining finance group.

A statement said the directors of both BP and Seltrust had agreed the deal.

Mr Oppenheimer's approval was, however, crucial.

He is chairman of Anglo American which holds a 36% stake — effective control — in Charter Consolidated, the British-based international mining finance group.

Charter holds a 27% stake (now worth some R200-million) in Seltrust.

London commentators are unanimous that BP would not have made the bid for Seltrust without being certain of Charter's vital approval.

Now they are asking: what is in it, apart from a huge profit, for "the Oppenheimer interests".

A popular theory is that the deal should be seen in conjunction with the 25%-plus stake in Consolidated Gold Fields that was acquired in February this year by Anglo and stable companion De Beers.

The suggestion is that Cons Gold might be prepared to hive off its 46% stake in Gold Fields of South Africa in return either for Anglo's stake in Charter or through some deal involving Minorco.

Minorco is a Bermuda-based international mining group in which Anglo holds 39%, effective control.

A spokesman for Anglo American said in Johannesburg last night that he had "no comment" to make on these London reports.

But mining analysts in Johannesburg say that the London commentators may be drawing too hasty conclusions.

They point out, for example, that Anglo has gone to great

...ouble to build up its international role through Minorco and would be unwilling to run it down.

But there seems no doubt that the directors of Cons Gold would like to get Anglo out of their group.

They also seem politically sensitive to their involvement in South Africa.

So some eventual deal that leads to Anglo having direct control over GFSA — Anglo and GFSA together control over 60% of South African gold production — cannot be ruled out.

Meanwhile Charter has acquired an oil interest and/or a lot of cash.

Seltrust's interests include about 35% of South Africa's Unisel gold mine. It is also involved in nickel, iron ore, silver, zinc and diamonds variously in Australia, Canada, the US and West Africa.

BP is looking generally for major diversifications outside oil and has big coal interests in South Africa.

See Page 15

How the new power supply will affect Soweto

55

~~303~~

RDM 8/7/80

By PAT SIDLEY
CONSUMER MAIL

THE long-awaited installation of electricity in 70 000 Soweto houses begins in less than a month.

The West Rand Administration Board has answered questions in an in-depth interview with Consumer Mail to tell the residents of Soweto how the installation will affect them and what it will cost.

By the time each householder has switched on the new supply of power in his home, hundreds of artisans and labourers will have dug trenches, moved into houses, shunted furniture around, tampered with walls and ceilings — and eventually informed the householder that the lights could be turned on.

How will this affect you? Were those men indeed from the authorised companies? Did they charge you for any work? Should you, the new Soweto power user, have paid any of the men on site?

After the "Mail" received letters complaining of abuses, Consumer Mail decided to set the record straight and tell residents of Soweto what to expect when electricity is finally installed.

One woman had been approached by a person who offered to install cables and plugs in her home and asked for a deposit of R100. The man failed to deliver the goods and the woman said this bogus electrician has been operating for at least six months.

The same woman was told she would not get electricity unless she was a 99-year leaseholder.

Not every householder in Soweto will get power installed. Only houses owned by the West Rand Administration Board will be get electricity during this vast operation.

Leaseholders, and private house owners, will have to make their own arrangements to lay on electricity which will have to meet the standards laid down by Wrab, who will then inspect it.

Private owners will also have to make their own financial arrangements to have power supplied and installed.

Householders in a Wrab-owned house will not have to pay a lump sum or a separate deposit to anybody for their electricity. All costs of the scheme will be contained within the monthly bill sent out by the new "electricity undertaking" which is as yet unnamed.

The cost to each householder every month, for the electricity installation and service, as well as the amount of electricity used will vary according to the size of the house and the amount consumed. This is likely to cost between R6 a month and R15 - R20 a month.

The price of electricity supplied by Escom will be linked to the inflation rate.

The electricity will not cost a Soweto householder more than a Johannesburg resident.

Charges for the installation and service will be a fixed monthly amount but will not be listed on the bill separately — it will be incorporated in the total monthly bill.

All workers for the companies installing wiring will carry some form of identification.

The group which is administering the electrification of Soweto comprises Wrab, the community councils concerned and the Greater Soweto Planning Council. It will be named shortly and this body will administer the accounts.

All payments will be charged on a bill posted to householders by the group.

C H A P T E R 5

KINEMATICS OF STRAIGHT ELEMENTS

...lders and private home owners will have to make their own arrangements for the installation of electricity. This means you can decide who will offer you the best job at the cheapest rate.

But all installations will have to be approved and inspected by WRAB. The installation will have to meet their standards. So check carefully that the contractors know the Wrab requirements.

It is possible that if owners and leaseholders get the contractors who are already installing in the area, to quote for their houses, they will get a cheaper rate.

There will be very few rebates or refunds for those tenants of Wrab-owned houses who have already privately installed and paid for electricity.

The only condition under which a refund or rebate will be paid, is if the installation was approved by Wrab and met their standards.

Wrab has said that many houses with electricity will be rewired because the wiring in them was inadequate and would not pass their inspection.

Tenants who feel they may be eligible for a rebate should apply to the new electricity undertaking when it has been established.

Contractors will be wiring homes — installing cables, plugs according to what the contract specifies. This means you will only receive a certain amount of plugs or light fittings, but you may want more.

It will be possible to extend your service — but Wrab says that this can only be done at a later stage and you will have to pay for this yourself.

Make sure you:

- Do not let anybody into your home to install electricity without checking his identification.
- Do not pay any cash to any of the workers on the site — nor to anybody representing himself as an official of the contracters, electricians, or Wrab.

A word of warning — when electricity is installed you will be able to use electric refrigerators, stoves, televisions or hi-fi equipment.

But make certain your appliance is bought from a reputable dealer, shop around for good prices and ensure that the appliance will not use too much electricity — power is expensive.

Wrab, and at least one of the contractors, have said they will be educating new electricity consumers on the best, and least expensive way to use electricity, and to save it.

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Anglo aims at stake in North Sea oil

88 STAR 8/7/80 214

By Michael Chester, Financial Editor

The Harry Oppenheimer empire, run from the Anglo American Corporation base in Johannesburg, may soon spread to the rich North Sea oilfields.

The chance of the stake in oil seems almost certain to have been the crucial key to the record-breaking R750-million takeover by British Petroleum of the international mining house, Selection Trust, that was agreed to in London yesterday.

Mr Oppenheimer held the high cards in the deal because of the Anglo American control of Charter Consolidated, which in turn held control of Selection Trust.

The takeover looks bound to end in a mines-for-oil swop.

It has long been known that BP, like most other oil giants, is anxious to diversify in the long term, using vast oil profits to gain a foothold in alternative energy sources such as coal and uranium as well as minerals in general.

Selection Trust, based in Britain and with mining interests spread worldwide, was an obvious choice.

But the price may well be an exchange for a slice of the Forties Field, the biggest and perhaps richest of the North Sea oil strikes.

John Cavill reports from London that stockbrokers regard the chance of the oil stake as "the cherry on the cake" which swung the takeover deal.

● **Page 18 — Charter may get stake in North Sea oil.**

Flu blamed for coal shortage

(55)

RDM 9/7/80.

By ADAM PAYNE

Mr DICK BIRD, managing director of the Transvaal Coal Owners Association, has issued a statement assuring domestic and industrial buyers of coal that any shortages which may be encountered are not due to a concentration on export markets — as has been suggested in some quarters.

Mr Bird says: "Collieries which are designated for domestic production have ample coal while collieries designated for export have in no way deprived the domestic market of coal.

"The trouble is with transport — and it is no fault of the Railways Administration.

"The main problem has been railway staff shortages severely aggravated by the flu epidemic.

"Recently, when the railways had 40 drivers laid up with flu, they were unable to meet the transport demand.

"There was no shortage of coal at the collieries supplying the domestic market, which had 200 000 tons loaded into trucks ready for railing to consuming areas.

"The coal could not be moved because of the shortage of locomotives brought about by the flu epidemic among drivers."

Mr Bird said that if coal merchants had during the summer months built up stockpiles, the problem would not have arisen. However, he understood their problems. Stockpiling entailed tying up capital, and there would be a slight degradation of the coal in storage.

Riyal rate

BAHRAIN. — The Saudi Arabian Monetary Agency has adjusted its official riyal rate to 3,32 to the dollar from 3,33.

Coal supplies still scarce

RDM 10/7/80. (55)

Staff Reporter

THERE is still an acute shortage of coal and anthracite throughout the country, the chairman of the Transvaal Coal Merchants' Association, Mr W Stoloff, said yesterday.

He said the shortage of anthracite had been aggravated by a serious rockfall at one of the major collieries in Natal a few weeks ago. Merchants were unable to cope with either anthracite or coal deliveries to consumers.

Soweto alone needed a supply of at least 50 rail trucks daily to cope with the demand.

Mr Stoloff said coke was available but pointed out it was inferior compared to other fuels.

A spokesman for the Railways, Mr J C van Rooyen, said it was doing its best to convey coal from the collieries.

Since Monday, 78 rail trucks had delivered coal to Soweto. Each truck carried 36 tons of coal.

Mr Van Rooyen said another 65 trucks were on their way to Soweto. He did not know when they would arrive.

A spokesman for the Johannesburg City Council, Mr M Woodrow, said there was an ample supply of coke. Those who wanted it had to order a minimum of five bags.

The chairman of the Soweto Coal Traders' Association, Mr Douglas Mtshaulane, said the traders were experiencing the worst shortage this winter.

He said coal delivered during the past three days by the Railways would not meet the demand.

Most merchants were losing money because they had not yet received their supplies.

Mr Mtshaulane said Soweto residents never used coke because of its inferior quality.

"It is only good enough for open fires when people are having a braai," he said.

Another Soweto dealer, Mr Christopher Mageza, said it was impossible for them to stockpile in summer in preparation for winter because they did not have adequate space.

"South Africa produces enough coal, but its people suffer a shortage," Mr Mageza said.

A spokesman for Sibanyoni Coal and Wood Agency in Mamelodi, near Pretoria, said he and his colleagues were experiencing an acute shortage of coal.

An East Rand coal merchant, Mr Steve Mdluli of Kwa Thema, Springs, said there was a shortage of coal in his area.

Wings Coal Agency, in Kagiso, Krugersdorp reported a similar situation.

A-plant in SA to sterilise medical supplies

RDM 19/7/80

By HENRY HARINGTON
Pretoria Bureau

AN ATOMIC plant for sterilising South Africa's medical supplies is being built at the Isando industrial complex near Johannesburg.

The process will also be used to improve the quality of cable insulation used in the electronics industry.

The plant — the first commercial undertaking in South Africa based solely on the use of nuclear technology — will be run by Isoster Ltd, and is owned on a 60-40% basis by Federale Volksbeleggings and the Industrial Development Corporation.

The installation, costing R3,5-million, will be operating by the middle of next year.

Since 1971, a pilot plant at the headquarters of the Atomic Energy Board (AEB) at Pelindaba has been used to sterilise disposable syringes, surgical gloves and instruments, bandages and swabs.

Mr A J van den Berg, chairman of the IDC, said last week: "The Atomic Energy Board found the pilot plant so successful that they invited the IDC to tackle it on a commercial scale. There was great interest from overseas concerns, but the IDC decided to form a wholly South African consortium for the project."

Mr A S Barnes, general manager of Federale Volksbeleggings, said yesterday: "In the process, pre-packed medical supplies pass through a chamber where they are exposed to the electro-magnetic energy released by Cobalt 60 in the form of gamma rays.

"Unlike atomic materials used in nuclear power reactors, Cobalt 60 does not leave any residue of radioactivity in an object which has been subjected to its rays.

"The saving in manpower through gamma-radiation has led to increased demand for disposable medical products in hospitals throughout the world," Mr Barnes said.

Plastic disposable equipment melts in steam sterilisation, while the use of potentially explosive ethylene oxide gas is dangerous and not entirely reliable.

Mr Barnes added: "It is accepted throughout the world that if disposable medical products are exposed to a certain amount of radiation, they are unequivocally accepted as sterile.

"The goods are placed in containers and the radiation goes right through them, killing any microbes, so they remain sterile until the seal is broken.

"The process is virtually identical to that used in hospitals when cancer cells in a patient are killed by exposure to a controlled amount of electro-magnetic energy from a 'cobalt bomb'.

"The energy also strengthens the rubber and plastic in disposable equipment. For example, surgeons' gloves are made 10% stronger, and artificial limbs, besides being sterilised, have their abrasion resistance reduced by 30%.

"We will also be able to make cable insulation for the electronics industry stronger and more heat resistant, so the industry will be able to use thinner and lighter cable," Mr Barnes said.

An Atomic Energy Board spokesman said that though South Africa was a leading country in the development of food radurisation, it was premature to discuss its commercialisation.

Discussing the safety aspect of the plant, Mr Barnes said: "There are more than 80 plants like this round the world, but to my knowledge there has never been an accidental emission of radiation. We have to provide a detailed evaluation of the project to the AEB, who will only licence us to operate when they are satisfied it is completely safe. We are also in contact with the Department of Health.

"The cobalt is stored in a concrete structure with 2m-thick walls which significantly exceeds the safety margin required."

Mr Barnes added that there was export potential for gamma-sterilised disposable medical supplies.

Ethanol and your engine

55 RDM
15/7/80

WITHIN the next few months, premium petrol on the Highveld will contain ethanol and other heavy alcohols and this will mean motorists will have to re-tune their engines, says an Automobile Association spokesman.

Mr Fred Bothma, technical services executive of the AA, said in Johannesburg yesterday that as alcohol required less air than petrol for complete combustion, allowance should be made for this.

"Cars being tuned for optimum economy without loss of power may be found to be running too lean when the new fuel becomes available, unless existing CO levels are increased by about 1,5%."

The introduction of alcohol into petrol would have a correcting effect on thousands of carburettors which were operating on the rich or uneconomical side and air-fuel ratios would lean out by about 0,6% to 1% when the alcohol-laced fuel was used, he said. — Sapa.

(55)

Sasol man warns on world fuel shortage

RDM 16/7/80

Pretoria Bureau

A GRIM warning of the catastrophic consequences of an ultimate shortage of fuel was given by the chief manager of Sasol, Mr H R Wiggett, in Pretoria yesterday.

Addressing an education symposium, Mr Wiggett said an energy shortage stared the world in the face in the long term.

"The shortage can, however — because of political decisions and other factors — become a reality more quickly than most people expect."

It was disturbing that even the huge price of motor fuel had failed to convince many people that South Africa was involved in a serious world problem.

For South Africa, dependent as it was on imports for much of its fuel, the problem was all the more worrying — particularly when political hostilities in countries where South Africa's oil came from were taken into account.

Mr Wiggett emphasised that a fuel shortage would bring with it a shortage of jobs as industries dependent on oil would have to close.

Crude oil was recovered from the sea at a cost between 10 and 15 times more than production costs in the Middle East.

When the high costs of recovering undersea oil was taken into account, the consequences for world economy were as far-reaching as a world energy shortage.

The effect on underdeveloped countries could be catastrophic.

South Africa, however, was in a particularly happy position with its huge reserves of coal.

South Africa's situation differed from the rest of the world. Because of strong outside political pressure it was never certain from day to day whether oil sources in the producing countries would remain open to it.

R2,5m offers the chance of a uranium kill

RDM 17/7/80. 55

David Carte — **Mid-week market**

AN EMINENT mining analyst tells me that atomic energy is proving itself safe and in three to five years "there will be a uranium buying panic".

Spot uranium prices, currently bombed out to somewhere around $32 a pound, he says, will eventually outstrip those for oil and coal, the burning of which is environmentally dangerous because of the "hothouse effect" on the earth, "acid rain" and other considerations allegedly too ghastly to contemplate.

Three Mile Island, the analyst says, was one of the most grossly exaggerated so-called "environmental disasters" of all time. Not only was nobody killed or injured, the plant was not even written off. The accident arose from a specific human error, the possibility of which has now been eliminated.

The dreaded "melt-down", says our uranium bull, has actually occurred at some "nukes" without damage to life, property or permanently to the power stations themselves.

Weekly, the analyst says, the evidence mounts in favour of nuclear energy as, not an alternative, but an imperative energy source, as more scientific papers are published.

The environmental hysteria that has brought uranium prices to current depths will soon be shown to be as so much hot air and prices will soar as the price of the calorific content of uranium moves more into line with those of carbon-dioxide-producing coal and oil.

Well, if you buy this scenario, an interesting investment for an individual or group with a spare R2 500 000 might be Nuco, the uranium plant that nearly went public through reverse takeover by Columbus but is now in provisional liquidation.

Now that Columbus has withdrawn, after a huge plunge in the spot uranium price, Dr Alex Rowe, founder of the plant, is looking for another equity partner with about R2 500 000. This amount, he avers, will get the plant operational at capacity and will buy a "hair over 50% in the venture".

Dr Rowe tells me he has shown several interested parties around the plant, but so far there have been no takers. But several are doing "serious investigations".

Nuco needs a commitment from a backer in the next fortnight to avoid final liquidation, but this does not make Dr Rowe a desperate seller. (Which could be construed to mean that he already has some backing at less favourable terms.)

Dr Rowe says the plant is capable of processing 1-million tons of slimes a year and Nuco has 11-million tons of its own slimes. There are many millions of other slimes in the area but no other processing plant, so he is confident reserves could be increased.

At this stage R4-million has been spent on the plant. The investor who puts up R2 500 000 for half the equity gets a stake in a plant that will have cost R6 500 000 by completion. This, in itself, is a big discount, but Dr Rowe adds that because much of the "nevertheless-first-class" equipment was bought second hand at bargain prices, there is no way that an equivalent plant could be built for less than R10-million.

Dr Rowe reckons Nuco can produce 60 tons of uranium a year. At the current price of $32 a pound, this suggests total revenue of about R4 320 000 a year. Break-even, he says is a uranium price of $20, which puts costs at R2 640 000.

This suggests that at the current low price, Nuco can make R1 600 000 a year and the investor who puts in the R2 500 000 will earn a yield of 33%-odd at these price levels.

Nuco must be about the only 100% pure uranium prospect available at the moment. If uranium does what the completely independent analyst suggests and all Dr Rowe's projections are realised, anyone who does step forward in Nuco's hour of need could make a killing.

But the full story is undoubtedly more complicated than I have sketched and with the plant not yet operational and the uranium price far from a settled thing, risks in such a high-return venture would probably be high.

360 55 General

Cape farmers consider cheap bulk electricity

RDM 18/7/80

CAPE TOWN. — Co-operatives could buy electricity in bulk from Escom, but before doing so, must ensure that everyone in the district would be prepared to buy from them, an Escom spokesman said yesterday.

He told delegates at the Western Cape Agricultural Congress in Cape Town that Escom's experience with small communities was that provision was seldom made for future maintenance and capital expenditure to keep costs down.

"When they get into trouble, they call on Escom to take over the system for them."

He was referring to a motion in which the congress was asked to discuss the possibilities of electricity being bought from Escom by co-operatives and resold to members at a possibly lower cost.

The motion also asked that farmers be allowed to build their own power lines to Escom specifications.

Speaking to another motion, several speakers said that it was impossible for young farmers, who were alone, to leave their farms for three months at a time for border duty. — Sapa.

(55) (280)

Escom signed to spend R800m

RDM 18/7/80

ESCOM signed contracts yesterday worth more than R800-million with three overseas engineering companies for the supply and installation of six boiler and turbo-generator units for its proposed Lethabo Power Station.

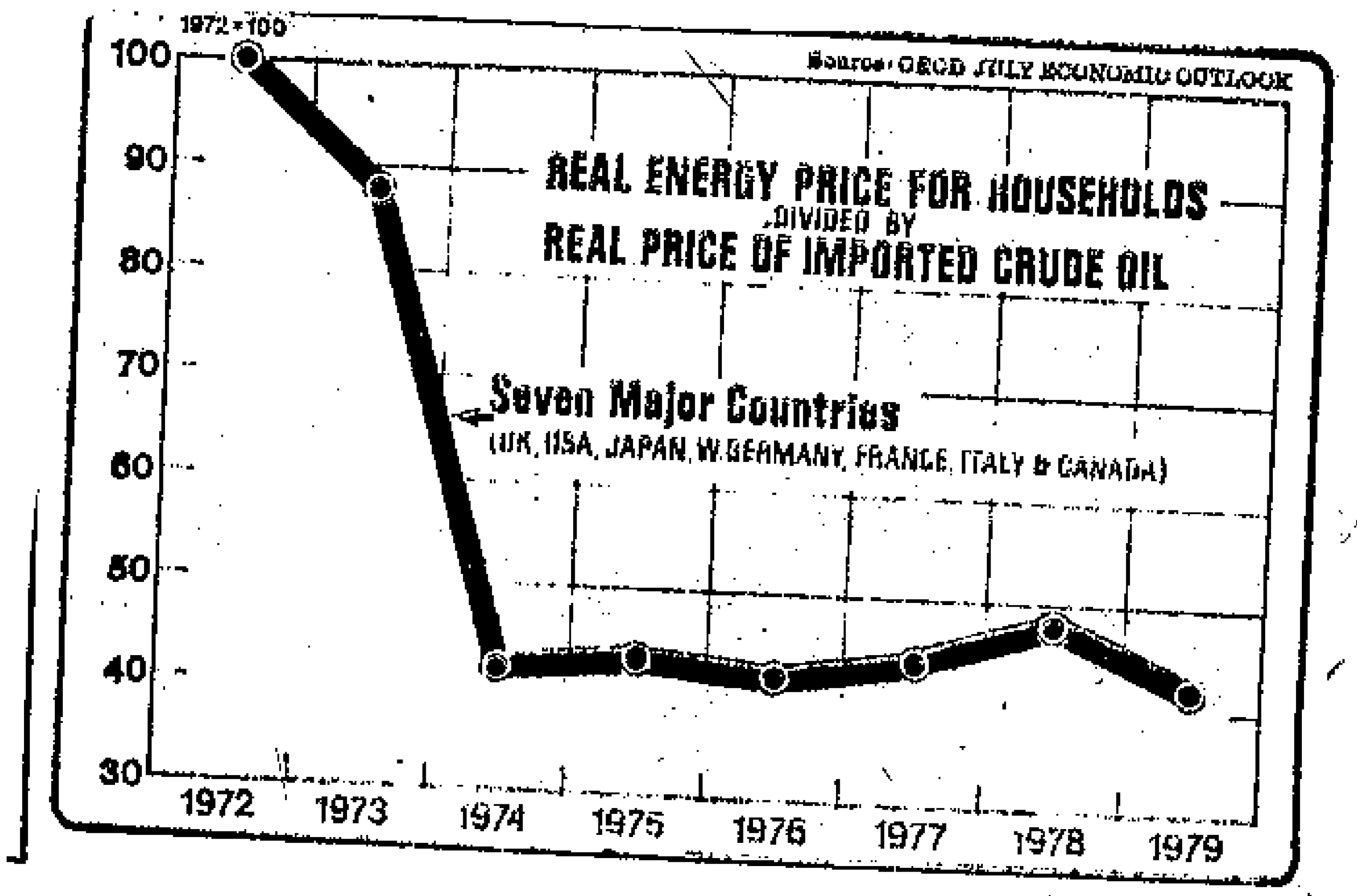
In a statement, Escom announced the boiler contract was worth nearly R500-million and the contract for the turbo-generators worth more than R300-million.

Each of the six turbo-generators will have a generating capacity of 600mW.

Lethabo, one of several large coal-fired power stations to be erected by Escom during this decade, is to be built south of Vereeniging, between Sasolburg and Deneysville in the Orange Free State.

The turbo-generators and boilers will be similar to the units, already in operation at Escom's Matla Power Station near Witbank.

Although the contracts were awarded to overseas companies, a substantial part of the R800-million would be spent in South Africa, the Escom statement said. — Sapa.



The ridiculous price of petrol — it's too low

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RDM
19/7/80.

LONDON. The Organisation for Economic Co-operation and Development says in its July Outlook that the oil price explosion of 1978-80 will lead to a cumulative loss of output in member countries of nearly 5½% by 1981 and add about 11% to consumer prices level by that year.

One does not have to take these estimates as holy writ to see that it would be desirable for the industrial world to reduce its vulnerability to such shocks, writes Samual Brittan in the Lombard column of the Financial Times.

The Venice summit communique had a great deal of pious talk about oil and energy saving, with some technological estimates for 1980. But it was short on definite policies for achieving these ends.

The most powerful incentive both to consumer energy saving and to the development of new sources of supply is the price of energy relative to other things — its "real price".

According to OECD estimates each 10% rise in the real price of energy for final users will lead to a 3% saving after two years, rising to 5% saving after five years — and this leaves out of account producer incentives altogether. The real price of imported oil for seven major countries was nearly three times as high as 1979 as in 1973. By 1980 it is likely to be 4½ times as high.

If one believes that market forces should be supplemented by State intervention, then the real price of energy to the final consumer should have gone up even further to provide extra incentives.

In fact, government policies, as distinct from rhetoric, have served to hold down the rise in energy prices paid by households to well below the rise in world prices.

In seven OECD countries real household energy prices rose by only 21% between 1972 and 1979. In other words relative to imported oil, real energy prices fell to 42% of their 1972 level. This is surely an anti-energy policy with a vengeance.

The exact reason for these perverse price movements varies from country to country. But much the most important is the tax component in petrol and diesel oil prices.

This is usually fixed in specific terms and has been eroded by inflation. In each of the seven countries taxes represented a much smaller proportion of petrol prices in 1979 than in 1972; this was particularly marked in the UK where the drop was from 70% to 30%.

Other influences have been price control, such as in the US and below-market pricing by State corporations producing alternative fuels such as gas.

Industrial energy prices went up nearly three times as fast as consumer prices — the discrepancy having obvious electoral causes. But the average level of final prices was far too low.

Energy taxes should preferably be tied to the market price, or at the very least be indexed to consumer prices. Any apparent inflationary effect could be compensated by offsetting reductions in other consumer taxes.

A price-based energy policy has also the supreme advantage that it is not tied to forecasts of oil prices and supplies, but will adjust automatically to both glut and shortage — which is more than heads of government can be expected to do.

Libyan people to decide on Western oil boycott

RDM 21/7/80

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BONN. — The Libyan leader, Colonel Muammur Gaddafi, has once again threatened to cut off oil supplies to the United States and its Western allies to force them into backing the Palestinians against Israel.

Interviewed by the West German news magazine, Der Spiegel, Col Gaddafi said the threatened oil boycott would be decided by a Libyan people's congress in October.

"But I already urge Libyans to vote for the oil boycott against the United States and those US allies who do not stand clearly on the side of the Palestinians," he said.

Asked how Libya would manage economically without hard currency from oil sales to the West, he said: "We will get along without America. If I could decide alone on the oil boycott, I would have shut off the oil tap from one day to the next."

Libya is America's third largest oil supplier after Saudi Arabia and Nigeria. Its daily shipments of 644 000 barrels a day account for about 10% of US oil imports.

Some Western European countries would feel the effects of a Libyan boycott far more acutely. West Germany, for instance, gets 16% of its oil imports from Libya.

In a wide-ranging interview conducted in a military camp in Libya, Col Gaddafi said his threat to kill exiled Libyan opponents abroad had prompted "several hundred" to return home.

He denied any violation of national sovereignty of Western European states when hit squads murdered ten Libyan exiles in a series of killings in Italy, Greece, West Germany and Britain.

Touching on other differences with Europe, he attacked last month's statement on the Middle East from the nine-member European Economic Community, spurning its calls for the Palestine Liberation Organisation (PLO) to be associated with Middle East peace talks.

"Nothing will come of it," the Libyan leader said flatly.

He said he had patched up former differences with the PLO leader, Mr Yasser Arafat, but let loose scathing criticism of Egyptian President Anwar Sadat for his reconciliation with Israel.

He also accused Mr Sadat of provoking enmity with Libya by boosting its troop presence along the countries' common border, but denied he would intervene in Egyptian affairs.

He also denied widespread rumours that he was behind an attack on the Tunisian town of Gafsa on January 27, when about 50 Tunisian exiles attacked the desert phosphate mining center, sparking street fighting that left 41 people dead. — UPI.

SECTION R

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Costly oil fires SA's coal-burning boilers

RDM 23/7/80.

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Simon Willson

Down to business

THE oil-price increases in the second half of the Seventies may have been one of the principal contributors to South Africa's spiralling inflation rate, but at least they have also emphasised the importance of one of our most important natural assets — coal.

And by unmasking coal's advantages, the soaring oil price has triggered both a reluctance to use petroleum-based fuels and a drive to exploit the logical cost-effective substitute.

Indications are that coal is fitting the requirements of cost-conscious oil users on a large scale in this country, and industries of all sizes and energy consumptions are switching to the more solid of the globe's two fossil fuels without any long-term cost disadvantages.

The inflationary impact of the oil-price increases of the 1970s, therefore, is likely in the medium to long term to be self-correcting as energy users convert to a domestically sourced product which is not subject to cartelised distribution, politically inspired embargoes, sabotage-susceptible pipelines or any of the other snags of contemporary oil supply.

Coal is increasingly seen as the answer, and not just through the Sasol coal-into-oil conversion process.

Industries are seeing the advantages of using coal direct or in gasified form, without putting it through the cost-additive Sasol plants.

The Transvaal Coal Owners Association (TCOA) reports a deluge of inquiries about coal supply and plant conversions from oil to coal-burning energy sources from manufacturers and processors in the industrial heartland of South Africa.

The TCOA is the marketing arm of the collieries of the biggest mining houses, including Anglo American, Lonrho, General Mining, Rand Mines, Gold Fields, the Tavistock Group and Eikeboom.

The association supplies 90% — about 20-million tons — of the South African inland coal market, and expects to supply an extra 3 500 000 tons over the next three years, most of it to oil-substituting industries.

This projected extra demand excludes the larger State-owned plants, such as Iscor, Escom and the Sasol complexes, which use tied collieries. It is a sign of the wide-ranging and vigorous nature of the move towards oil replacement that coal substitution is being considered mainly by medium-sized and small businesses.

The expected extra coal demand over the next three years from the Cape industrial area is smaller, about 500 000 tons, because many industries nearer the coast have entered into oil supply contracts which have periods still to run. But TCOA officials are confident that coastal industries will join their inland counterparts in the swing to coal.

The trend is not away from oil only. Electricity, diesel and liquid petroleum gas (lpg) costs have also risen faster than that of coal over recent years.

Rival oil substitutes like solar and tidal power and nuclear fusion are still in the early stages of development, and leave a lead time even in the highly industrialised Western economies of between 30 and 40 years for coal to occupy without serious cost-effective competition.

Examples of industries converting to coal are becoming more numerous. IMPI Drying Systems now uses specialist coal-based processes for drying timber, latex-coated products, hides and animal feed.

Lesotho Pulp & Paper, which used a coal-tar by-product from Sasol for energy, has indicated that it will use up to 80 000 tons of coal a year from September to produce gas for its energy needs.

Fedmis is said to have placed an order for coal to gasify it and fuel its fertiliser dryers. Masonite is expected to convert to gas to dry its processed board and the Uranium Enrichment Corporation is using coal instead of oil in its boilers this year.

The most encouraging aspect in the trend for coal producers is that it has taken hold at small-business level. Bakeries, food processors, ceramics producers and other family enterprises are turning to coal instead of diesel.

The only problem that could stall the flight from oil in industry is the possibility of infrastructural supply bottlenecks.

The switch has come at a time of expansion in the economy as a whole, and the transport routes are already under pressure from myriad products requiring wider distribution.

The coal shortage this winter was a result of transport problems entirely beyond the control of the railways. Such logjams can be expected to recur in a period of increasing economic activity.

The TCOA is working on a possible solution by studying the logistics of stockpiling coal nearer the points of consumption instead of at the collieries.

SAR backlog hits coal dealers

RDM 24/7/80

By JEREMY BROOKS

THE coal shortage in Johannesburg has assumed such critical proportions as a result of the Railways backlog that one merchant is hiding bags of anthracite from the public to supply hospitals.

"All I get are empty promises from the Railways — one moment they tell me they can't deliver my order because so many of their trucks are stranded up in Zambia, and the next time it's because their train drivers are down with flu," he said yesterday.

"If I don't get more coal and anthracite by Friday, then I'm in it up to my neck.

"I usually need a stockpile of at least 6 000 tons to last me through the winter. I have nothing now and the few bags of anthracite which are left have been covered up and hidden away to be kept for the hospitals."

Coal and anthracite are not the only commodities affected by the Railways backlog, which an SAR spokesman said should be cleared "within a few weeks". Building materials are also in short supply on the Witwatersrand.

Last week South African Railways officials slapped a four-day embargo on all freight bound for the Witwatersrand and imports at Cape Town and Durban harbours were turned away.

The embargo was lifted this week but there is still a two-day delay for goods being railed from Natal to the Witwatersrand. A three-day delay exists for goods travelling southwards.

A Railways spokesman said: "Perishables are given preferential treatment but obviously if we are likely to have trouble railing them, we won't accept them."

A general upswing in the economy, coupled with an improved climate for the building industry and a record maize harvest are some of the reasons put forward for the backlog.

SAR employees have also been hit by an outbreak of influenza.

Nuclear power 'safer, cheaper'

Cape Times 24/7/80

(55)

Science Reporter

PROFESSOR Peter Beckman, the nuclear-power proponent, said yesterday that any Capetonian who did not object to the presence of coal-fired power stations and tank farms near his city could have no quarrel with the siting of Koeberg nuclear power station.

Informally interviewed at his City hotel after being shown around the site of the Cape's first nuclear power station, Professor Beckman said nuclear power was a safer and cheaper option than any other energy source.

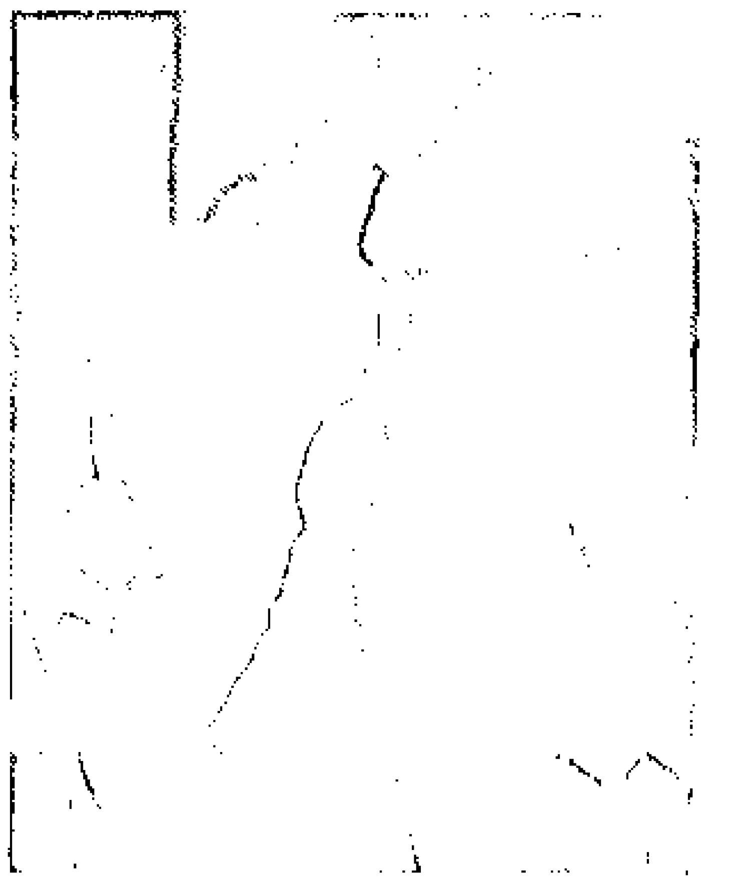
"Per unit of energy produced, its price in human suffering is very much smaller than any other source."

Professor Beckman, professor of electrical engineering at the University of Colorado, US, and author of the book "The Health Hazards of Not Going Nuclear", was invited to South Africa by the Free Market Foundation. While in Cape Town he is a guest of Escom and will speak at the University of Cape Town today.

In his view, the radioactivity of coal smoke is up to 50 times higher than routine emissions from a nuclear plant. In an Escom bulletin issued last year he said that "anyone who really believes that every little bit of radioactivity hurts should first stop coal, jet flights and radiotherapy of cancer as well as evacuating all high-level radioactive areas such as the whole of Switzerland, Colorado and Wyoming".

"Yes, I still agree with that view," he said yesterday. The safety statistics of the nuclear-power industry and that of conventional fossil-fueled sources showed that nuclear energy was "many times" safer.

In America, the low profile of the big insurance companies



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ROLL OUT THE BARREL

(SS) FM 25/7/80

New details released about the giant Australian oil-from-shale scheme in Queensland confirm its tremendous significance for the future of synthetic oil.

Mining Journal reports from London that the initial stage of the project, intended to test the technical and commercial feasibility of the process, will require the treatment of no less than 25 000t a day of shale. The estimated yield of synthetic oil will be 15 000 to 18 000 barrels a day. The final design stage will take another 18 months, and construction another three years thereafter.

The full significance of the latest announcement lies in the intention to expand output to a level of 180 000 to 240 000 barrels per day if the initial scale of operations proves successful. Stage 2 could take a further four to five years to complete, and would supply an estimated 20% of Australian oil requirements in the Nineties.

Exxon has a one-half share in the initial stage of the Mount Rundle project, and the two Australian originators of the scheme the remaining half, but Exxon could be required to make a greater proportionate contribution subsequently, with commensurate adjustments to its entitlement to output. Exxon's ultimate commitment could top A$10 000m, making the scheme Australia's largest ever resource development project.

Exxon's willingness to tackle an oil-shale project on this scale encourages the view that comparable, or even larger, oil-shale developments could follow to exploit the colossal dormant deposits in the Western US.

WORLD OIL (55) FM 25/7/80

The fever chart

Despite current oversupply in world oil markets, there is no room for complacency, and certainly not optimism, about global energy problems. On the contrary, every day that passes without strenuous effort by Western nations to end their dependency on a politically shaky assemblage of Middle East suppliers increases the risk of a monumental catastrophe.

Whenever a decline in the world economy or a period of over-zealous price raising by Opec causes a temporary slackness in world oil markets, fatuous voices are raised to suggest that the cartel is losing its grip. It is true that after the initial price surge in 1973 to 1974, world oil prices did decline for a few years.

But informed opinion recognises that Opec has gained decisively in experience and cohesion. Peter Odell, Professor of Economic Geography at Erasmus University, Rotterdam and an acknowledged world oil expert, told the *FM* that Opec was only learning its way in the early Seventies. Since then, it has gained greatly in in-house experience, to the point where it can keep *real* oil prices at least stable. The cartel can now take account of inflation and the decline in the external value of the dollar in making international oil prices. Odell goes so far as to describe Opec as "the most effective ever international organisation".

The world energy crisis can be sliced in a number of different ways. Perhaps most irrelevant for short to medium-term planning is the risk of an actual shortage of physical oil supply in the mid-Eighties or later. Even if pessimistic forecasts about Soviet output and the possible levels of Opec supplies are correct, there is hope that high prices could in the medium- to long-term bring forth substantial supplies from a wide range of other sources. These, says Odell, could include off-shore oil (like marginal fields in the North Sea) and oil from shale. He regards anything above $25 (in current dollars) as a "long-term supply price for a whole set of energy alternatives". Present Opec prices — ranging upwards from Saudi Arabia's $28 per barrel to $37 — already average at least 20% more.

Grim reality

Further political upheaval in the Middle East, leading to breakdown of supply from important producers like Saudi Arabia, can after Iran and Afghanistan, never be discounted. And the ability, or the will, of the US to intervene militarily to contain disturbances is very much to be questioned.

But political upsets capable of bringing about a major disruption to petroleum supply remain contingency rather than actuality, just as the precise nature of constraints on physical oil supply in the mid-Eighties remain, to a great extent, conjecture.

What is grim reality at present real oil prices and levels of Opec output is the cumulative impact on the world currency system of the financial surpluses which are their counterpart.

Even now, after more than six years of public exposure to the sheer magnitudes involved, their bald enumeration can still induce a sense of shock and incredulity. According to US oil expert Walter J Levy (writing in the summer issue of Foreign Affairs) Opec countries might accumulate a surplus of about $115 billion during 1980 and of some $350 billion to $450 billion between 1980 and 1985. These figures, say Levy "imply that the importing countries would suffer a corresponding balance of payments deficit during this period, which would have to be financed somehow by the recycling of the petrodollar surplus". These projections assume that current Opec oil prices will increase at somewhat less than the anticipated rate of inflation over the period in question. Levy wryly says this is "the most favourable possible assumption".

Saudi Arabia's Yamani . . .
politics threatens production

For 1980, Levy puts the developed countries' deficit at about $50 billion and that of the less developed countries (LDCs) at nearly $70 billion. The LDCs' foreign debt might reach $440 billion in 1981, compared with about $385 billion in 1980 and $150 billion in 1975.

What are the prospects for continued successful "recycling" of the oil-generated surpluses? What the term has meant in practice since 1973 has been that the oil-rich creditors like Saudi Arabia have re-lent the money to Western governments in such forms as US Treasury bills or to Western commercial banks which have re-lent it in their turn to increasingly shaky borrowers like the LDCs.

Massive debts

A brave note is sounded by International Monetary Fund MD Jacques de Larosière, who believes much can be achieved with sufficient determination. Addressing the Economic and Social Council of the United Nations in Geneva on July 4, he advocated a more active role for the IMF in the recycling process. De Larosière referred, for example, to increased quotas and to the new "Common Fund" to promote the stabilisation of commodity prices, an economic issue of particular benefit to the non-oil LDCs.

But even he acknowledged the daunting scale of the problem, admitting that the LDCs had spent nearly $250 billion of their borrowings between 1973 and 1979 on financing current account deficits. This figure includes interest in the incredible amount of over $60 billion.

Another international expert who has recently considered the problem is Yves Laulan, Chief Economist and Senior Vice President of the Société Générale of France, writing in The Banker of April-May 1980. He makes the relevant point that the industrial countries were, through superior economic flexibility in the period 1973 to 1979, able to transfer much of the burden of coping with Opec's surplus to the communist bloc and to the LDCs.

But on the most important issue Laulan agrees with Levy: this time round, Opec will be less willing than it was, post-1973, to accept a whittling away of its current account surplus through a progressive decline in the real oil price caused by a rise in the general price level in the industrial countries. There seems little doubt that Opec now has the will and the ability to maintain its real oil price through any necessary scale of restrictions in aggregate oil output.

It cannot be forgotten, for example, that Saudi Arabia maintains its current output of 9,5m barrels per day only as a political concession to the US, so as to maintain US military support and to avoid a collapse of the world economy. If real oil prices were to appear threatened, Saudi output could be cut back to positive advantage, as

lectricity (55) ontracts DM 25/7/80 for Soweto expected

By DIAGO SEGOLA

CONTRACTS to install the R30-million Soweto electrical reticulation job scheduled to start next month are expected to be awarded in just over a week.

A spokesman for the LTA building group, who are handling part of the project, said yesterday it was expected that contracts would be signed within the next 10 days. "At this stage we can't say anything because no contracts have been signed."

It is believed that two other major electrical companies are tendering and bidding for the contracts which will cover every one of Soweto's 120 000 homes.

LTA has won the tender to instal electricity in about 40% (8 000 houses) of the whole project.

The contract is being carried out by a subsidiary of LTA — Industrial Electrical Company (IEC). The company also wants to win the contract to instal the wiring for the entire project.

The contract must be completed within three years, with the first lights on in two years time.

Reticulation for about 40 000 houses will have to be installed within the first two years and the pace doubled thereafter to complete the rest of the 80 000 homes.

IEC is doing the reticulation and the equipment will be supplied by Tessacom.

Remgro in R100m energy, metals drive

(1998) (232) (74) (1822) (55) (PIKO) RDM 2/8/80

By DAVID CARTE
Deputy Financial Editor

AS PART of a huge diversification drive, Rembrandt Group, in partnership with an unnamed European group, has established a R100-million off-shore commodities-based investment company.

This is revealed by the annual report released today.

The new company has spent R100-million on geographically spread and diversified portfolio investments in metals, minerals and energy. Of this, R48 300 000 was spent after the year to March 31.

The report does not say so, but Rembrandt watchers said the new company was established with the proceeds of the sale of Rothmans Canada last year.

Remgro also invested R78 500 000 in South Africa last year.

Its biggest SA investment was the R41-million it spent following its rights in the Federale Mynbou issue. In March, Remgro acquired a 20% interest in Total SA for R16-million.

It spent R6 300 000 following its rights in the Volkskas issue and its 20% interest in Legal & General Volkskas cost R5 800 000.

In February, the group entered a joint chemical manufacturing venture with Henkel KGA of West Germany. Its share of this 650-man, two-factory operation cost R9 400 000.

Much of this domestic capital expenditure was financed by the net cash inflow of R79 500 000 arising from the reconstitution of the liquor industry.

For the first time Remgro gives an asset and profit breakdown, which shows the extent of its diversification out of liquor and tobacco.

At the yearend, 57% of capital employed was in tobacco and liquor, 12% in mining, 13,5% in liquid funds and 15,6% in other interests.

The profit contribution from tobacco and liquor fell from 84,4% in 1979 to 72%. This happened even though liquor and tobacco profits were 8% better at R84 500 000.

Mining's contribution rose from 10,5% to 13% and liquid funds' from 5% to 10%. This trend away from tobacco and liquor towards mining and energy is expected to be even more marked next year.

In the year to March, in spite of the strength of sterling and the rand, Remgro pushed up pre-tax profit 28% to R97 623 000. A slightly lower tax rate, enabled taxed profit to rise 31% to R76 891 000.

Thanks presumably to the £18-million — or 18% — drop in profits of Rothmans International, which is not mentioned in the annual report, income from associates fell 7% to R40 688 000.

Income of subsidiaries sold during the year was R3 188 000 compared with a loss of R5 388 000 in 1979.

The upshot was that attributable earnings rose 27% to R118 670 000, while earnings rose in line from 179c to 227,3c a share. Earnings excluding associates were 57% better at 149,4c (95,1c).

The stronger rand and pound had the effect of reducing total reserves by R30 300 000, whereas in 1979 it increased reserves by R19-million. Exchange rate changes knocked R4 800 000 off pre-tax profits. In 1979 they benefited profits to the tune of R1 700 000.

Capital employed, excluding current liabilities, at the yearend was R835-million, of which R750-million, or 90%, was shareholders' funds.

Rembrandt Controlling, Technical Investment Corporation and Technical and Industrial Investments all depend entirely on Remgro for their income and their performance and prospects mirror those of the operating company.

COMMENT: Remgro is fast changing its nature, switching from the increasingly frowned-upon and regulated "dying habits" of smoking and drinking for the "now" sectors, commodities and energy.

The super-secretive group is even becoming slightly more forthcoming with information.

All these things are positive for the rating. So is the likelihood that sterling will weaken in the year ahead.

The bad news could be recession overseas and a stronger rand. Whatever happens the well-covered dividend is guaranteed to grow respectably over the medium term, so all the Rembrandt shares are reasonable value in a rather expensive market.

Sasol boss tells of role in economy

DN49
55
RDM 8/8/80

By ALISON GILLWALD

AN OIL-from-coal plant such as Sasol 2 or Sasol 3 does not provide substantial additional employment opportunities in relation to the size of investment it requires.

"But then it should be borne in mind that it is not the primary purpose of the industry to provide employment for large numbers of workers — at any rate, not in the long term," the managing director of Sasol Ltd, Mr J A Stegmann, said yesterday.

Speaking in Pittsburgh in the United States, Mr Stegmann said Sasol represented a contribtion of just under 1% of the total number of job opportunities in the economy as a whole.

He said construction manpower on Sasol 3 would peak at about 27 000. Allowing for the indirect employment opportunities which were being generated elsewhere in the economy, 75 000 additional jobs would have been created by Sasol 3 by 1981 for the duration of the construction period.

During the construction phase, the establishment of a project such as Sasol 2 or Sasol 3 could have a major impact on employment opportunities, not only in terms of the direct employment on the construction site, but also in terms of indirect employment in the manufacturing industry supplying equipment and materials to the projects.

Mr Stegmann said the direct and indirect effects of the Sasol projects in the years between 1975 and 1983 in providing additional jobs and the training of unskilled labourers into skilled and semi-skilled workers would be of immeasurable benefit to the country.

The creation of jobs by Sasol 2 was of even greater importance than Sasol 3 because it came at a time when South Africa was experiencing a general slump in the economy, he said.

"There is no doubt that the advent of Sasol 2 was a major factor contributing towards the upswing in the economy that South Africa is now experiencing."

The most important spin-off from the establishment of these projects was that it trained a large number of otherwise unskilled people in a variety of employment skills which they could now use to benefit themselves and for the advancement of the economy as a whole, Mr Stegmann said.

He said it was imperative for the future well-being of not only the United States, but of the West, that the US should drastically reduce its dependence on imported oil.

South Africa would probably not have proceeded with a third Sasol plant until the mid 80's had the effects of the Iranian crisis not been thrust upon her, he added.

The long-awaited wiring

(55) (260) RDM 8/8/80.

Staff Reporter

PHASE one of the R30-million project to instal electricity in about 100 000 homes in Greater Soweto will start today with the signing of the first contract.

The contract is for the installation of electricity in 8 100 homes in Diepkloof, Meadowlands, Dobsonville, Zondi, Mofolo North, and Mofolo Ce[illegible] which will begin offici[illegible] day, although some wo[illegible] already started.

Reticulation — the [illegible]tion of power to streets and homes — will proceed simultaneously with the wiring of houses.

An announcement on who has won the reticulation contract is expected within a few days. LTA, which won the first contract, is expected to win this one as well.

The wiring of the 8 100 houses will require about [illegible] of wire and 150km of [illegible]its. Each house will have 15-amp plug points, and an [illegible]age of six light points.

The electrification of Soweto should be complete in 1983.

Mr J C Knoetze, chairman of the West Rand Administration Board (Wrab), has said: "It is confidently expected that by then the whole of the Soweto area will be provided with street lights as well as electricity in all homes, schools, public buildings and shops."

For the first time, black electrical contractors will be commissioned in their own rights to carry out major installation work.

Sec A

Oil glut destroys Opec trump card

(55) RDM 8/8/80

by Nicholas Moore

A GLUT of oil has sent free spot prices tumbling and put new pressure on the exporting nations to trim output, according to industry sources.

Industry executives said the glut appeared to be bearing out predictions by Saudi Oil Minister, Mr Ahmed Azki Yamani that market forces will compel the Organisation of Petroleum Exporting Countries (Opec) to do as he urges and adopt a new, moderate pricing formula later this year in the interest of both producers and users of oil.

The sources reports note, not yet officially confirmed, that Nigeria has been forced to cut output by 10% to two million barrels per day (BPD) because of difficulty finding buyers.

Petroleum Intelligence Weekly, an authoritative industry journal, said it learned late last week of the cutback by Nigeria, a major producer within the 13-state Opec.

The weekly said the cut applied to high quality oil which Nigeria wished to sell at premium prices. Abu Dhabi and Malaysia have made smaller production cuts, the sources said.

Spot prices have fallen for most crude oil and refinery products. But premium North African crudes, as in the case of Nigeria, have been hit hardest by the slump on the spot market, where oil not covered by long-term contracts is freely traded.

Rotterdam traders said the spot price for Nigerian crude had gone three dollars a barrel below the official rate of $37 (R29 approximately) for a barrel.

"The tumble on the spot market for African crudes represents the biggest price 'deflation' since an oil surplus developed following the 1973-74 price explosion," says Petroleum Intelligence Weekly.

Weekly commented: the present glut chiefly results from a fall in demand because of recession, high prices and the mild 1979-80 northern winter.

And the biggest exporter, Saudi Arabia, has been keeping its output one million barrels a day above a preferred 8,5 million BPD ceiling, in support of its bid to moderate contract oil price rises.

Members of Petroleum Exporting Countries (MPEC) ministers are due to meet again in Geneva in September, when the Saudis are likely to renew efforts to edge Opec into accepting a new pricing formula, under which a floor price would be linked with inflation.

This would aim to end the pricing free-for-all which has raised prices 150% since 1978 and scattered them across a range from the Saudi $28 (R22 approximately) to the north African $37 (R29 approximately) a barrel.

By September Opec may no longer be cushioned from the impact of the prevailing glut, oil industry analysts said.

Excess supply, now averaging around 750 000 (BPD), has been flowing into stockpiles in consumer countries and these now contain more than five billion barrels or 100 days' supply.

"The place is awash," said Mr Richard Savile, oil analyst with London brokers Phillips and Drew. He thought the level was near the point at which no more crude or refinery products would be stored.

Mr Savile, among several other industry analysts, predicted that Saudi Arabia would eventually return to, or towards, its preferred 8 500 000 (BPD) ceiling to bring supply more closely into line with demand.

He envisaged a possible Opec deal by the end of 1980 under which, in return for a new pricing formula, Saudi Arabia would reduce its output and raise its price.

The Saudis' current $28 (R22 approximately) a barrel is the lowest price in Opec, compared with an agreed ceiling for Gulf oil of the same type of $32 (R25 approximately) a barrel.

The ceiling was fixed at an Opec meeting in Algiers on June, 10 which made some progress towards reunifying Opec's pricing structure.

Industry sources said Abu Dhabi reduced output by 80 000 (BPD) on August, 1 and that Malaysia has cut production from 300 000 to 280 000 (BPD) under a policy to conserve its oil serves.

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unless candidates are so instructed.

2. Blue or black ink must be used for written answers. The use of a ball point pen is acceptable. Red or green ink may be used only for underlining, emphasis or for diagrams, for which pencil may also be used.
3. Names must be printed on each separate sheet (e.g. graph paper) where sheets additional to examination book(s) are used.
4. Do not write in the left hand margin.

2. Candidates are not to communicate with other candidates or with any person except the invigilator.
3. No part of an answer book is to be torn out.
4. All answer books must be handed to the commissioner or to an invigilator before leaving the examination.

Any dishonesty will render the candidate liable to disqualification and to possible exclusion from the University

Soweto power contract

RDM 9/5/80

Deputy Financial Editor

LTA SUBSIDIARY, Industrial & Electrical Company, has been awarded a R2 200 000 contract for the first phase of the electrification of greater Soweto.

The contract is for the wiring of 8 100 houses in Diepkloof, Meadowlands, Dobsonville, Zondi, Mofolo North and Mofolo Central. Work began this week.

The houses will be wired at an average cost of R272.

Mr Vernon Raath, general manager of Industrial & Electrical, said he believed his company had won the contract because of its efforts in training several of South Africa's first black electricians.

The contract was due to be completed in March 1981, but householders might have to wait longer than this for power as reticulation was being undertaken separately.

Opec pays off debt as income rises

RDM 13/8/80 (55)

LONDON. — Members of the Organisation of Petroleum Exporting Countries repaid more than $4 000-million of their debt to international banks as their oil income grew in the first quarter of this year, figures from the Bank for International Settlements show.

The development sheds new light on the recycling process this year as the report covers a period when some international banks said they were becoming less aggressive in competing for new Opec deposits. At the same time many banks were also more cautious in lending to the oil-exporting countries because of the political crisis in Iran.

As they repaid their debt, Opec members also restrained the growth of their deposits in the banking system. These grew by $9 300-million in the first quarter compared with an increase of $13 400-million in the final quarter of 1979. Only about 30% of the new deposits were denominated in dollars.

A significant portion of the increase in Euromarket liquidity was thus caused by the release of funds previously tied up in loans to Opec rather than to an increase of banks' liabilities to Opec resulting from the group's current account payments surplus.

At the end of the period Opec members' outstanding borrowings from international banks totalled $59 800-million, and their deposits in the banking system were $129 600-million.

The BIS reports that total international lending activity in the first quarter rose by only $6 500-million to $1 117-million-million. International bank liabilities grew somewhat faster by $16 800-million to $1 137-million-million. As usual the figures are based on reports from banks in the Group of Ten industrialised countries together with Austria, Ireland, Denmark, Switzerland, and offshore branches of US banks.

In spite of the modest increase in current dollar terms, the underlying rate of expansion in international lending remained strong, says the BIS.

The figures are distorted by the sharp appreciation of the dollar during the period. After adjustment for exchange rate movements and excluding interbank business, the true first-quarter growth in international lending was probably around $30 000-million the BIS estimates. This was only $5 000-million less than the rate of growth during the previous quarter.

There was, however, a marked divergence of lending activity. Lending outside the reporting area slowed significantly, while there was a strong increase in lending within the area, with particular emphasis on borrowings abroad by the German non-bank sector.

This sector took as much as $6 000-million of the total $26 000-million lent within the reporting area. By contrast, net new lending outside the reporting area slipped to about $4 000-million from $20 000-million in the previous quarter.

This partly reflects the repayments of Opec credits, but there was also a pronounced slowdown in new lending to non-oil developing countries and to Comecon states. Both these groups drew down deposits with the reporting banks during the quarter.

Another feature of international lending in the first quarter was a preference by borrowers for non-dollar currencies, especially the mark and Swiss franc.

Because of the high interest rates prevailing on dollars, nearly 60% of the increase in the reporting banks' total external assets was denominated in currencies other than the dollar.

On the supply side of the Euromarkets there was a marked jump in Eurosterling liabilities of the reporting banks. These rose 31% or the equivalent of $4 600-million during the quarter.

But because of the high sterling interest rates banks were unable to onlend all these new funds. Their net debtor position in sterling thus virtually doubled to $7 700-million. — Financial Times.

Rush to the North Sea

55
PDM
13/8/80

By NEIL BEHRMANN

LONDON. — Britain is experiencing a great oil rush for licences in the North Sea.

The UK Energy Department announced that a record 125 applicants were submitted for the seventh round of licenses for North Sea oil and gas exploration.

There are 94 offshore regions where companies can drill for oil between the British and Norwegian sections of the North Sea and some parts of the Channel.

Included in the rush were companies unconnected with the oil business. Applications came from Unigate which produces dairy products and orange juice, Associated British Foods, engineering company Tube Investments, and European Ferries.

The companies are attracted by the much higher oil prices which North Sea oil is receiving. Also, the Conservative Government has allowed greater participation in the oil fields and is not limiting exploration to conventional oil companies.

The food and engineering companies have decided to get on the North Sea oil bandwagon because an oil find could be a profitable sideline to their conventional business.

OIL

Will it really dry up?

Star 13/8/80

53

From the Daily Express

LONDON — Seven years ago the world filled its oil barrel from what seemed to be a bottomless well.

But today it is a very different situation that poses serious problems for the world's leaders. The depths of the well have been plumbed . . . world reserves of fossil fuel — oil, gas and coal — are vast but not unlimited.

Oil is likely to run out first unless the big consuming nations like America, Japan, Britain and the rest of the Common Market really achieve stricter conservation measures and develop alternative energy sources.

The first signs of a leak in the barrel came in October, 1973 when the little heard of Organisation of Petroleum Exporting Countries (OPEC) hoisted oil prices and launched the oil weapon against the West.

In the space of a year, the price of oil quintupled and the world's economy was pushed to the brink of disaster. For the first time, motorists in the industrialised nations were made aware that the pumps were not inexhaustible.

But demand for oil has kept rising. New discoveries during the 1980's are expected to meet the increased demand, but some oil companies gloomily forecast that shortages will appear around 1990.

Experts differ on the question of how long the oil will last but according to the Total group of France there is enough oil to last 30 years at current consumption rates, assuming that no more is found.

UNSTABLE

It is the so-called energy gap that is worrying energy experts — the time when oil production starts to fall and other sources will be expected to replace it.

The non-Communist world consumption of oil is currently running at around 50 million barrels a day — nearly 60 percent of it coming from the now politically unstable Middle East.

Last year, the supply from Iran dried up after the Shah was overthrown. That leak was plugged by Saudi Arabia increasing its production by 1 m barrels a day.

The balance between keeping supplies just that vital few drops ahead of demand is now delicately balanced. If just one more OPEC country falls to revolutionaries who are anti-West, an immediate shortage is threatened.

After Iran, it is reckoned that America, now totally reliable on Middle East oil to keep going, would not hesitate to use force to protect its industrial lifeblood.

Russia, unlike the American giant, is not saddled with the threat of an immediate oil shortage, should anything go wrong in the Persian Gulf.

The USSR has known oil reserves of 71 000m barrels, more than enough to meet demand for the next few years. It also has the biggest proven reserves of gas in the world.

But what it has not got is skilled people and the technical knowhow to get at the reserves lying under Siberia's inhospitable wastes and off-shore inside the Arctic Circle. This is where a continued embargo by the West of technical exports to Russia may hit hardest and force the Bear, in time to look elsewhere for supplies and cause more waves in the oil barrel.

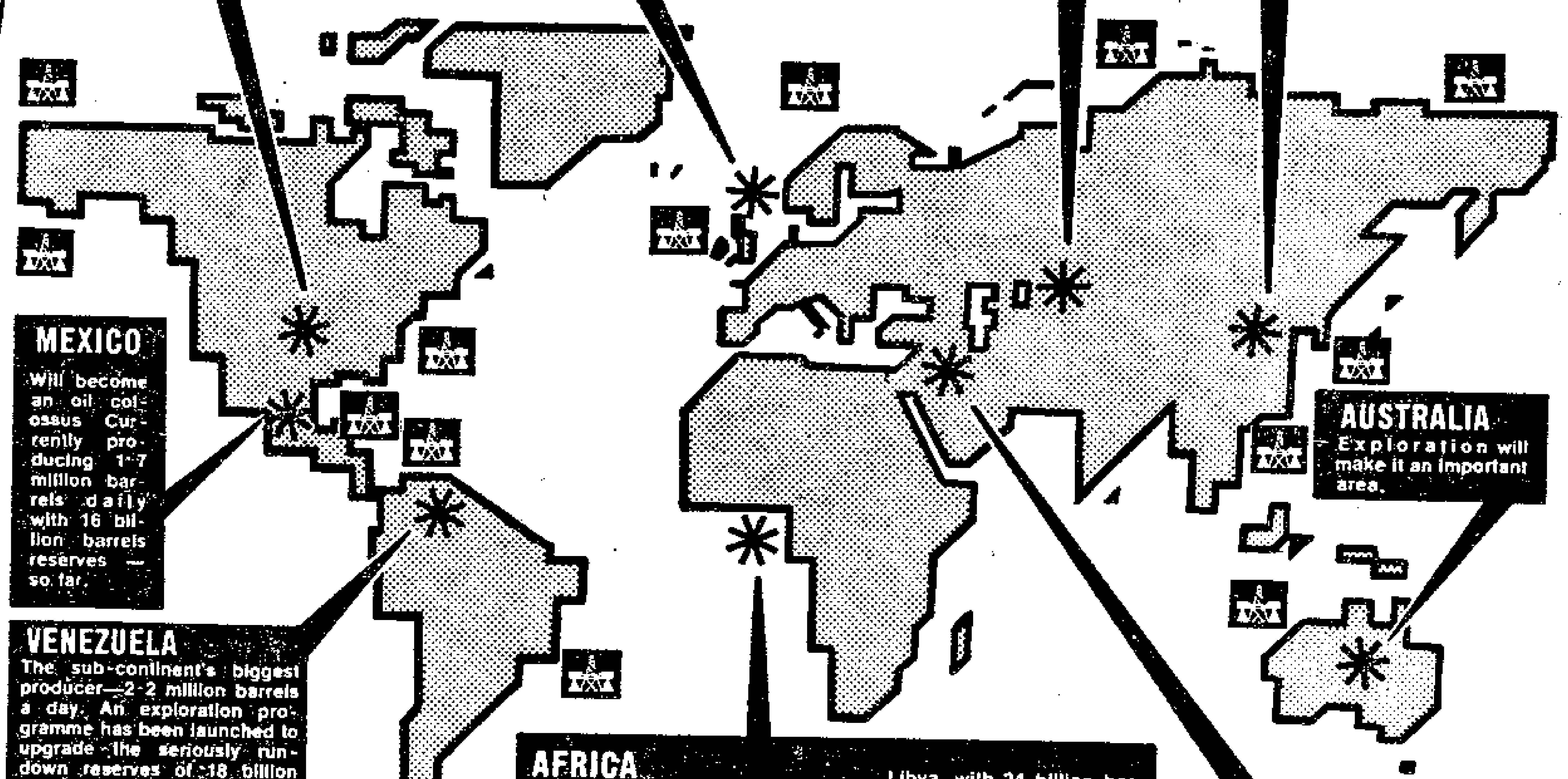
Where they will look, of course, depends upon many factors — most of them political.

But unless there are some startling new discoveries in the USSR they will look on their doorstep — the Middle East.

And that means the Organisation of Petroleum Exporting Countries (OPEC) dominated by Saudi Arabia.

For OPEC controls some 57 percent of the world's oil reserves.

And try as they may, the industrialised nations of the West are never going to break its grip completely.



U.S.A.
AMERICA, once self-sufficient for oil, now imports more than half its daily needs of 18·5 million barrels, mainly from Saudi Arabia. Its reserves total 29 billion barrels.
Offshore work is underway in the Gulf of Mexico and the East and West Coasts.
Soaring OPEC oil prices will make development of the oil shale and tar sands of Wyoming and Alberta, Canada, an economic possibility.

BRITAIN
NOW nearing self-sufficiency. Production from the 14 North Sea oilfields has reached 1·7 million barrels a day. Proven reserves total 16 billion barrels — with more to come.
Several companies are to drill for oil off the west coast of Ireland. And valuable strikes have been made on land in the South of England. One find near Basingstoke, Hants, is estimated to be as good as some of the wells in Texas.

U.S.S.R.
CURRENTLY Russia produces more than 11 million barrels daily from the deposits in Siberia and the north east of the country.
Russia has proven reserves of 71 billion barrels but is short of technical know-how and skilled oilmen needed to get the oil out. Production increases have slowed and exploration in the icy north of the country will be hampered by the embargo on the West's technical exports.

CHINA
CHINA so far has discovered 20 billion barrels of oil and produces around two million barrels against a need of some 1·8 million barrels a day.
Several Western oil companies, including BP, have been invited to carry out survey work offshore in the South China Sea. China intends to buy machinery and know-how from the West and aims to double its oil output by the late eighties.

MEXICO
Will become an oil colossus. Currently producing 1·7 million barrels daily with 16 billion barrels reserves — so far.

VENEZUELA
The sub-continent's biggest producer—2·2 million barrels a day. An exploration programme has been launched to upgrade the seriously rundown reserves of 18 billion barrels. Major oil companies including BP involved in offshore exploration.

AFRICA
COLLECTIVELY the African producers are the second largest exporters. Nigeria pumps 2·1 million barrels daily from proven reserves of 18·2 billion barrels. Libya, with 24 billion barrels in reserve, produces two million barrels and Algeria, with 6·3 billion barrels is producing one million barrels. They lead OPEC's hard-liners on pricing policy.

AUSTRALIA
Exploration will make it an important area.

MIDDLE EAST — HALF THE WORLD'S RESERVES
DOMINATED by Saudi Arabia, the area holds 370 billion barrels — more than half the world's proven reserves. Saudi Arabia has 166 billion barrels and pumps out 9½ million barrels of oil a day, most of it for export to the U.S.
It controls 11 of the world's biggest oilfields, including the giant Ghawar field, which produces 4 million barrels daily. Iraq is the second biggest producer with 3½ million barrels now that the flow from Iran has been cut from five million to under two million.

OFFSHORE EXPLORATION

US ENERGY

It's go for synfuels

55 FM 15/8/80

A fortnight ago, President Jimmy Carter signed into law the Energy Security Act (ESA) which is to hasten America's independence from Opec oil by developing a greater domestic supply of synthetic fuels.

The programme to perfect synfuels technology, Carter said, "will dwarf the combined programmes that led us to the moon and built our entire interstate highway system." The president's pardonable boast was correct on one point at least. The American government is now prepared to spend money on wresting hydrocarbon energy from its mountains of tar sands, coal and oil shale at a scale that will truly dwarf the Mercury and Apollo projects of the Sixties and Seventies. Whether the programme will succeed is the subject of still hot debate.

But even if Washington fails to take the pioneering work done at SA's Sasol plants and turn it into the commercially workable flow of hundreds of millions of oil barrel energy equivalent it needs to break Opec's stranglehold, it won't be for lack of money. Earlier this month the administration's Department of Energy announced research and development grant funds worth $300m. Awards of $200m were announced a few weeks later. A further $5 000m in grants, loans and price guarantees will be offered in mid-September, and that is just the beginning.

The law Carter signed authorises spending up to $88 000m over the next 12 years, primarily to support private ventures that otherwise would be too risky or expensive for firms to attempt. The programme will fund or assist nearly every venture into synfuels imaginable.

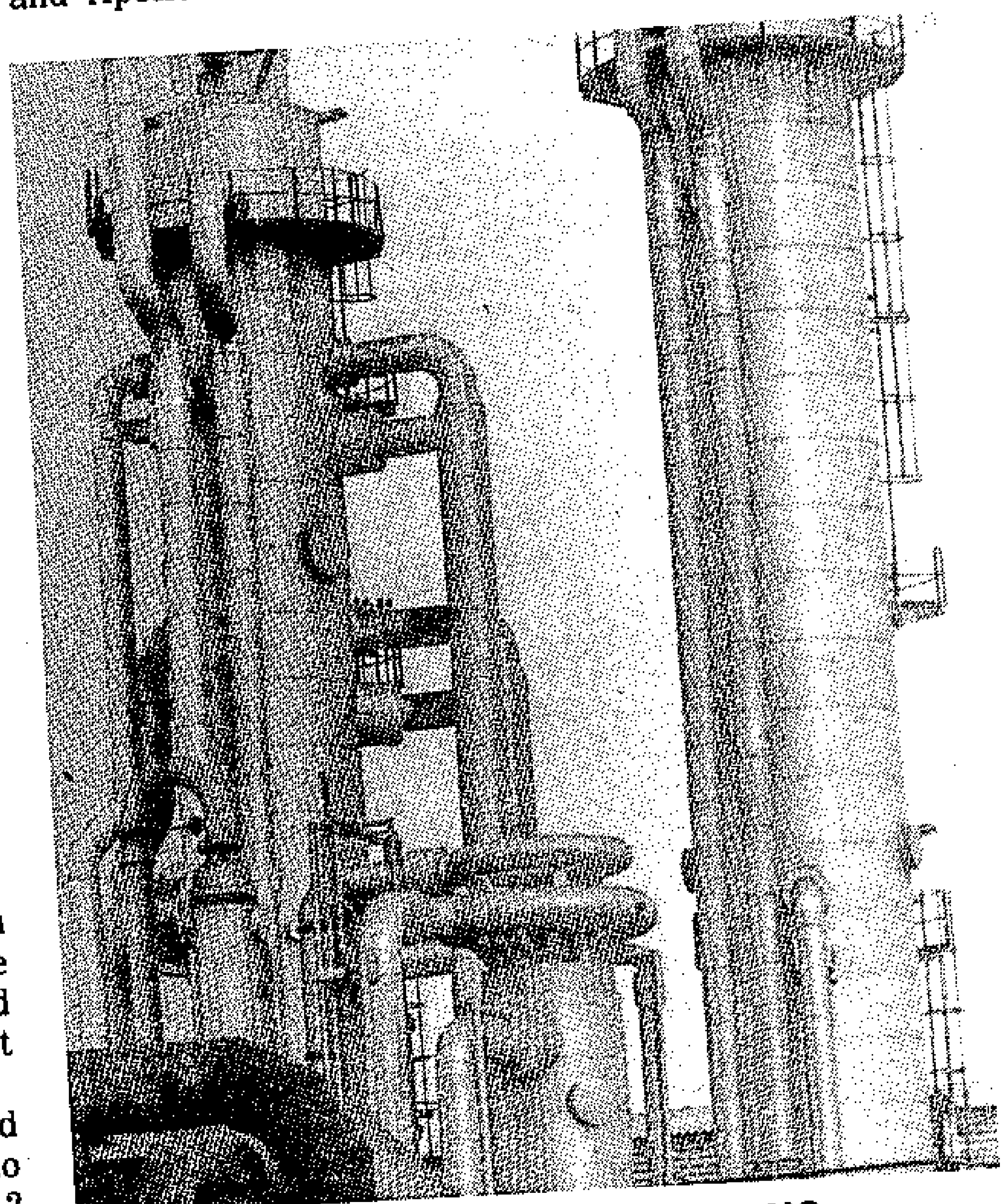
A sizeable synfuels effort based on domestically-developed technology is already going full-steam ahead. But at least one project is planned to utilise Sasol technology in a $3 700m commercial plant targeted for completion in 1986-87.

Texas Eastern Corp and Texas Gas Transmission Corp have contracted with Sasol and the California-based Fluor Corporation to conduct a feasibility study on construction of a Sasol plant in Kentucky. The plant would convert Illinois basin coal into 56 000 barrels per day of liquid fuel.

"The economics look reasonable and we have plenty of coal," Texas Gas Synfuel Corp. vice-president Paul Fedde told the *FM*. Some 15 000 tons of the coal have already been sent for compatibility testing to SA.

"We made the decision that the country needed a commercial coal-to-liquid plant before 1990," said Fedde, and since Sasol was already successfully on-stream, it was chosen to provide the proven technology.

The Texas Gas synfuels project may not remain alone in the use of Sasol technology for long. Fluor has been licensed by Sasol to promote its wares in the US, and it has just begun to do so.



Sasol . . . opportunities in the US

But the technology does have some sturdy competition as the Sasol process is not suited to all types of American coal.

□ Ashland Oil is starting up a US government-financed experimental plant in Kentucky that will convert 600 t of coal into 18 barrels of liquid fuel per day. At the same time, says Duane Chapman, assistant manager of Ashland's synthetic oils division, the company plans a full commercial plant that would convert 23 000 t of coal into 50 000 barrels of fuel daily.

□ The Tennessee Valley Authority plans a $2 000m plant in Alabama that will transform coal into high-energy gas for local industrial use as boiler fuel. A North Dakota plant will convert lignite into the same natural-type gas.

□ The Colony shale-oil project in Colorado will be built just as soon as the government loan guarantee can be arranged. The project, to be run by Tosco Corp and Exxon, is designed to produce 46 000 barrels per day of fuel.

□ Subsidiaries of Gulf Oil Corp, in conjunction with West German and Japanese companies and the three respective governments, are expected to build the world's first commercial-size direct hydrogenation plant to produce fuel from coal. The plant is to be sited in West Virginia with a target completion date of 1984. The process to be used, solvent refined coal, differs from the Sasol process in that it reduces coal directly to liquid fuel. Sasol plants use an indirect method whereby coal is processed to yield raw gas which is converted into oil.

□ Westinghouse's new synthetic fuels division is counting on the Department of Energy to finance a 15-40 ton-per-hour coal-to-liquid plant in Pennsylvania to succeed a small unit that has been operating there since 1975. Westinghouse, while not in the business of providing fuels for sale, is a supplier of components and systems.

The nascent industry is not, by any means, without its problems. First and foremost, the new bureaucracy is slow in moving. The Carter administration is having difficulty recruiting a chairman for the money-dispensing Synthetic Fuels Corporation, to be run by seven presidential appointees, since the job might last only as long as the Carter administration itself.

And then there's the bottom line question, put by Milton Russell, an energy economist for Resources for the Future, Inc. He asserts the Carter administration's goal of 2m barrels a day of oil equivalents in 1992 is "wildly optimistic." Whether the synthetic fuels programme will significantly enhance American fuel independence will remain to be seen.

NUCLEAR TECHNOLOGY

New plant for SA

FM 15/8/80 (55)

A R3,5m gamma irradiation plant is currently being built at Isando near Johannesburg. The installation will be run by Iso-Ster, a new company owned on a 60-40 basis by Federale Volksbeleggings and the Industrial Development Corporation (IDC), and should be commissioned by July 1981.

Iso-Ster will be undertaking radiation processing for various industries, including the sterilisation of medical supplies and improvements in the quality of specialised plastic insulated wiring and cables used in electronics.

During the process, pre-packed medical supplies pass through a chamber where they are exposed to the energetic and ionising electro-magnetic energy released by radioactive cobalt 60 in the form of gamma rays.

When various materials, such as plastics and rubber, are exposed to this electro-magnetic energy, biological and permanent chemical changes occur without any significant temperature changes.

Unlike atomic materials used in nuclear power reactors, the gamma irradiation from cobalt 60 isotopes does not transfer any radioactivity to the products being processed. It also has a relatively high penetrating ability but can be shielded by dense materials such as concrete or lead. Because the cobalt is housed within the reinforced concrete structure which forms part of the irradiator, the radiation field is contained within the irradiator.

Gamma irradiation is believed to be superior to the generally used ethylene oxide sterilisation method, as it has no product packaging restrictions. Containers can be packed and then irradiated and will remain sterile until reopened, resulting in a considerable reduction in post-sterilisation microbiological testing and treatment and in the quarantine period.

"The saving in manpower through gamma-radiation has lead to increased demand for disposable medical products in hospitals throughout the world,"says Tony Barnes, GM of Federale Volksbeleggings, who states that Iso-Ster will provide the last part of the manufacturing process for the medical product manufacturing industry. In essence, these manufacturers will be sub-contracting the final part of their process to the firm.

Since 1971, a pilot plant at Pelindaba, headquarters of the Atomic Energy Board (AEB), has been sterilising disposable syringes, surgical gloves and other medical instruments. The AEB found the pilot plant to be so successful that they invited the IDC to tackle it on a commercial scale. Although there was great interest from oversease concerns, the IDC decided to form a wholly SA consortium for the project.

STAR 18/8/80

'Fuel hike forced Putco fare rises'

Own Correspondent

The huge hike in the fuel price last year forced Putco to apply for increased bus tariffs.

This was said by Mr A P W de Klerk, representing Putco at a National Transport Commission hearing in Pretoria today.

The application follows a Supreme Court ruling in November which set aside tariff increases in the Witwatersrand area which were approved by the local Road Transportation Board in Johannesburg in October last year.

Mr de Klerk said the average increase being asked for was 22,2 percent. The highest was 28 percent and the lowest nothing.

He said last year's increased fuel prices pushed up the cost of Putco's fuel in the Witwatersrand area by R4,3-million. Putco has 1 075 buses operating in the area.

Replying to a question by Mr B Slabbert, chairman of the commission, Mr de Klerk said similar increases were approved for the Pretoria area and would be implemented by the end of November.

(Proceeding)

C. Times (55) 20/8/80

No SA fuel price rise yet

Industrial Reporter

WEAK world oil markets have ended any possibility of a petrol price rise in South Africa in the short term.

Reliable sources yesterday disclosed that the equalization fund, established to cushion the country from the affects of erratic movements in non-contract or spot oil prices, was now in surplus. Technically it could even withstand a small reduction in the petrol price, but the sources said this would eventually cause a larger than necessary rise when the market hardened.

The South African petrol price is based on a mix of those posted by Opec, spot prices charged by world oil brokers for cargos often already on the seas, and official government selling prices (OGSP) — the price charged by governments of producing countries not adhering directly to Opec charges.

Spot market prices have softened by several dollars a barrel in recent weeks and now stand far below levels ruling a year ago. But the benefits of this decline have been largely offset by OGSP increases.

"We could possibly knock half a cent a litre off the petrol price," said one source yesterday, "but this would reduce the cushion against any further increase in OGSP and Opec prices, which would in any event probably lead to a price rise here." There were currently no other factors that could cause petrol prices in South Africa to go up.

STim 21/8/80 (???/55)

Escom comes under fire

DURBAN — High line fees for Escom power came under heavy fire from National Party delegates at the Natal party congress yesterday.

Delegates from rural areas appealed to the Minister of Energy, Mr de Klerk, to initiate a productivity study into Escom's workings and to end the life-long charges for power lines paid by farmers.

One delegate, Mr E G Bester, said: "When the Escom people come calling they arrive in long black cars wearing thick glasses and carrying shiny briefcases.

"When we complain to them they say it is the Government's problem, yet when we come to the congress the Government throws the problem back to Escom."

Farmers now wanted to know what would be done about high line fees, Mr Bester said, "because if there was one corporation that was ineffective, it was Escom."

In reply the Minister, said a preliminary study into productivity at Escom had already been undertaken by the Board of Trade and Industry.

Escom had been requested to give urgent attention to its productivity and to report back on a regular basis.

The Minister said Escom's image was perhaps not what it should be, but people should remember Escom was under tremendous pressure and had to carry out an extraordinary development programme with exceptional demands.

SYNTHETIC FUEL (55)

Kiwis strike out

FM 22/8/80

There's been an important synthetic fuel breakthrough in an unlikely place — New Zealand. Mobil will build a $500m plant to convert to petrol the off-shore natural gas deposit at Maui, near New Plymouth, North Island. The deposit — discovered as long ago as 1969 — had been "mothballed" by the New Zealand government pending a decision on how best to use it. An earlier proposal to export it in the form of liquefied natural gas (LNG) was rejected.

The natural gas will be converted to methanol, from which synthetic petrol will be produced using the Mobil catalytic process, which is claimed to be technically effective and cheap. By 1985, the plant should be producing 12 000 barrels of synthetic petrol per day, enough for one third of New Zealand's expected requirements.

Apart from being the first major synthetic plant, world-wide, since Sasol I, the project has possible implications for SA. AECI has a local licence from Mobil for the use of the new process, which is also applicable to the synthesis of important petrochemical intermediates. Although there is not the slightest suggestion that the Mobil process could be applied locally in the foreseeable future for fuel synthesis, AECI says that it is "looking at it actively" as part of its policy of converting, where possible, to coal-based chemical feedstocks.

A major local disadvantage of the Mobil process, if used to synthesise fuels, would be its inability to produce synthetic diesel fuel, of which SA is currently more in need than of petrol.

According to Andrew Stratton of ICI (quoted in *The Economist* of July 26) the Mobil process enjoys a big cost advantage over Sasol's Fischer-Tropsch process. When the further cost advantage of natural gas against coal as raw material is included, Straton calculates that synthetic petrol made from Maui gas will be less than half as expensive as Sasol's.

Despite the diesel fuel limitation, the Mobil process may yet find long-term application in SA, where the intermediate — methanol — can be made in large quantities from coal.

It's highly probable, medium-term, that the New Zealand type of operation will be duplicated in other parts of the world, especially where there are large, remote deposits of natural gas, difficult to transport over great distances in an unconverted form.

R650-m methanol plant will end the diesel crisis

STAR 28/8/80

(55)

By Jaap Boekkooi

Joint plans by three industrial giants for a R650-million methanol plant on the Eastern Transvaal highveld will finally rid South Africa of its five-year-old diesel crisis.

The plan's first phase, announced today, joins AECI, Shell and Anglo American in the venture to produce 1 000-million litres of methanol, a diesel oil replacement.

The plant's capacity, one-tenth of liquid fuel output of Sasol 1, 2 and 3 combined, will be able to wipe out the imbalance between demand for diesel and that for petrol.

Although information is classified, it is known that in the past South Africa had to import extra crude oil supplies to meet the demand for diesel — and had to export excess petrol.

The demand for diesel, compared with that for petrol, is still rising, mainly because of greater use of agricultural machinery and road transport.

In a report earlier this year the Energy Research Institute at the University of Cape Town named methanol as the most energy-efficient, and least expensive, of petrol and diesel substitutes.

After unique research in South Africa methanol can now be used to power diesel engines.

AECI chemical engineers have fired diesel engines on methanol by so-called citane improvers, a breakthrough chemical component which improves the octane rating of the fuel.

Anglo-Shell link up in giant fuel probe

55

RDM 28/8/80

By DAVID CARTE
Deputy Financial Editor

A MAMMOTH plant in South Africa costing more than R650-million which would produce 1 000 million litres of methanol a year — and take the country a long way from dependence on imported diesel fuel — is to be investigated.

It was announced yesterday that the investigation will be undertaken jointly by AECI, Anglo American Coal and Shell SA.

The announcement, by the Anglo American Corporation — parent company of AECI and Anglo American Coal (Amcoal) — said the plant, if built, would be only the first phase of "a major methanol manufacturing and distribution project".

The methanol would be used mainly as a replacement for diesel fuel — but also as a chemical feedstock for AECI.

South Africa's total diesel consu-

AECI and Anglo American Coal have expressed interest in a methanol plant for some time, but a major stumbling block had been the question of marketing and distributing it.

Fuel companies have been reluctant to distribute other fuels because they could pose a threat to their own sales. The involvement of Shell as a partner in the project overcomes this obstacle.

Mr Denys Marvin, managing-director of AECI, said a decision to go ahead with Phase 1 of the scheme would be taken in 12 to 15 months.

Mr Graham Boustred, chairman of Amcoal, said AECI already had the technology to make methanol from coal. The major technical problem still remaining was to make the methanol useable in conventional diesel engines.

He said research into this was already advanced, but the next six months would be crucial.

Mr Marvin said the plant should not cost significantly more than the R450-million originally estimated by AECI and Amcoal. However, Mr Boustred said that though estimates had not been completed, it could cost "quite a bit more than this".

The estimates exclude the cost of a new coal mine to produce two million tons of coal a year — which would be required for the scheme.

Coal industry sources said this mine alone would cost R150-million to R200-million.

Amcoal's major coal deposits are in the Bethal and Witbank regions of the Eastern Transvaal, and these were cited as the most likely locations for the plant.

Mr Marvin said the trio of companies were ideally qualified to get the project off the ground. AECI had the technology, Amcoal had the coal reserves, and Shell had 75 years of fuel marketing and distribution experience in South Africa — as well as considerable fuel and lubricant technology.

One of the major questions still to be resolved, said Mr Marvin and Mr Boustred, was the price the Government would allow the fuel to be sold at, and the excise duty it would levy.

"Before going ahead," Mr Marvin said, "we would have to be satisfied with the return we would get on our capital."

GENERAL NEWS

Motor oil price rise due

STAR 28/8/80 55

By Charlene Beltramo,

The price of motor oil is set to rise by between five and 10 percent a litre on Monday, September 1. Industry sources refused to comment on whether or not a petrol price hike was also imminent.

An industry source said retailers had been informed to enable them to stockpile in advance.

Shell refused to comment, but Mr G J F Bond, chief executive of Castrol said additives had gone up 10 percent in the last six months.

He would not confirm the date of the price increase but said one was due soon, as the last increase was six months ago.

"Ever since 1973 the prices of base oil, containers and additives have risen as part of the inflationary spiral.

"Base oil constitutes 60 percent of the price of motor oil and additives form 40 percent. The base oil prices has been stable but additives have gone up," Mr Bond said.

He said a price increase in the region of 10 percent could be expected.

Informed speculation has it that a petrol price rise could be announced on Friday to come into effect on Monday too.

The present selling price of motor oil varies from about 98c to R1,04 for 500 ml or about R8 for 5 litres.

Industrial giants to probe methanol project

(55) C.T. 25/3/81

Own Correspondent

JOHANNESBURG. — South Africa took a major step towards independence in diesel fuel yesterday with the announcement that AECI, Anglo American Coal and Shell South Africa, are to investigate a huge 1 000 million litre a year methanol plant that could cost more than R650 million.

An announcement by Anglo American Corporation, parent of AECI and Anglo American Coal (Amcoal), said this plant, if built, would be only the first phase of "a major methanol manufacturing and distribution project".

The methanol would be used mainly as a replacement for diesel fuel, but also as a chemical feedstock for AECI.

The country's total diesel consumption is classified information, but experts said the new plant, if built, would make a "very significant" contribution to the country's diesel needs.

AECI and Anglo American Coal have expressed interest in a methanol plant for some time, but a major stumbling block has been marketing and distribution of the product.

The involvement of Shell as a partner in the AECI-Amcoal project overcomes this particular obstacle.

NUCLEAR POWER (55)

Alive and well . . .

FM 29/8/80

Three countries — apart from the staunchly pro-nuclear French — are pressing on strongly with nuclear power, according to recent announcements. The most important, the Soviet Union, intends to double the annual growth of its nuclear energy production over the next five years.

According to Fyodor Sapozhnikov, Deputy Minister for Energy and Electrification, Russia plans to increase its nuclear energy production by 7m-10m kW annually during the next five-year plan which begins in January 1981. Five pressurised water reactors with the very large capacity of 4m to 6m kW each are being built in European Russia.

The Soviet Union's energy planning is hampered by the location of a great proportion of its admittedly vast reserves of coal, oil and natural gas — in the remotest regions of Siberia. So, nuclear power plant, conveniently located near the vast Soviet industrial centres in western Russia, has a vital role to play.

In East Asia, Taiwan is to construct its fourth nuclear power plant, with an initial capacity of 1,8m kW. Nuclear power capacity in use or under construction totals 5,1m KW.

The companies competing to supply the new plant in Taiwan are Framatom of France, Kraftwerk Union of Germany and Westinghouse, General Electric Corporation and Combustion Engineering of the US.

And the Philippines, which had suspended construction work at its first nuclear power plant after the Three Mile Island accident, will soon resume construction. Finance Minister Cesar Virata says the Philippines government was satisfied with extra safety features installed in the light of the accident.

These independent announcements strongly fortify the view that Three Mile Island will eventually turn out to have had a positive influence on nuclear power, rather than prove the death blow which the anti-nuclear lobby naively believed it would be.

METHANOL (55) FM 29/8/80

Massive venture

Three large local concerns have announced a joint venture to manufacture methanol on a large scale and distribute it. According to an announcement by Anglo American Corporation, the three concerns are Anglo American Coal Corporation (Amcoal), AECI and Shell SA.

The announcement is cautiously worded, saying that the project "is being studied." Reading between the lines, though, there seems good reason to believe it will get the go-ahead.

If the venture is launched, it will be massive — the first phase would embrace the construction of a coal-based methanol plant with an annual capacity of 1 000m litres.

This phase would also require "the development of methanol as a diesel fuel replacement." This could mean the development of a commercially effective additive to enable methanol to be used in unmodified diesel engines through giving it combustion characteristics similar to conventional diesel.

Alternatively, it could mean persuading diesel fleet owners to modify their engines (especially through the incorporation of spark plugs) to enable them to burn pure methanol. In the light of earlier news that AECI is working on methanol additives, it seems more likely that the consortium aims at producing a fuel which could be burned in essentially unmodified diesel engines.

Professor Richard Dutkiewicz of UCT's Energy Institute has published a policy paper in which he argues very convincingly the technical and economic case for a large-scale methanol programme in SA. Official thinking does not appear to be much out of sympathy with Dutkiewicz's ideas.

As diesel fuel is the weakest link in SA's energy chain, any move to diminish dependency on this vital input must be welcomed, provided (as always with alternative energy schemes) that the technology and economics really can stand on their own feet.

Methanol can also be used as a petrol substitute, but its priority use in SA would be in place of diesel.

3AAN (35) STAR 29/8/80

BACKGROUND

Soweto's giant power plan gets moving at last

By Anthony Duigan

After more than four years of talking, politicing and manoeuvring, Soweto's giant electrification programme effectively moved into gear today.

The R22-million contract for reticulation was signed today. Pilot work on the project has already begun and wiring of an initial 8 100 houses starts soon.

This enormous undertaking which will bring electricity to close on a million people in more than 80 000 homes in three years or less was conceived in the aftermath of the 1976 riots when improving the quality of life in Soweto became an imperative.

At present an estimated 20 percent of Soweto's approximately 100 000 homes have electricity. The rest use a variety of gas, coal and paraffin appliances which keep Soweto blanketed in an unhealthy haze of pollution.

Bureaucracy and politics played their part in delaying Soweto's electrification.

In 1976 three large companies, Roberts Construction, LTA and Siemens — put their heads together and came up with a plan for the scheme. A consortium of four big banks backed the plan with a guarantee of the finance needed — between R50-million and R60-million at 1976 costs.

The plan came adrift when the West Rand Administration Board did its own calculations and decided Soweto residents couldn't afford electricity. WRAB decided another feasibility study was needed.

More time passed, costs escalated and the Soweto Council, first of the Government-initiated community councils, decided to flex its muscles over the issue. It appointed another consortium called Ecoplan to draw up a blueprint for Soweto's development and its electrification.

Ecoplan submitted i[...] plan to the Soweto Cou[...] cil in mid-1979. But t[...] catalyst that got t[...] bureacratic wheels movi[...] was Soweto's planni[...] supremo, Mr Louis Rive.

Today is his last day [...] South Africa's Postmast[...] General, a position he h[...] filled with distinction f[...] many years.

Lasy year he was appointed Soweto's overall planning chief by the Government to cut through the red tape holding up development in Soweto. He has already shown himself an effective choice.

A year ago the target date for the completion of Soweto's electrification was set at 1985 and its estimated cost has risen by close on 300 percent since 1976 projections.

Today Mr Rive has set a completion date at mid-1983 and he estimates that R40-million can be pruned from the cost of the scheme.

But more important for the development of Soweto are the 3 000 to 5 000 jobs that will be created by the reticulation contract. A special recruiting office is to be set up at New Canada just outside Soweto and many of the thousands of jobs available will provide training, leading to careers in electrical and other work.

SA medical schools 'accept mediocrity'

21/8/80 STAR 64

By Bob Kennaugh
Medical Correspondent

Fewer young doctors are interested in research as a career and research activities in South Africa are declining, says Professor A R Rabson.

He was giving his inaugural lecture in Johannesburg as professor of immunology and head of the department of immunology in the school of pathology, Witwatersrand University and SA Institute for Medical Research.

He said private practice was glorified and the clinical teacher not the investigator had become the model for the young.

"Together with the serious medical manpower shortage and medical emigration problem, research activities in South Africa are declining," he added.

"This will adversely effect our ability to teach young medical students and we are already accepting mediocrity in many of our medical schools."

It had been suggested that South African medical research work should stop and that it should be left to researchers in North America and other Western countries to make the discoveries. "I find this approach unacceptable," said Professor Rabson.

"We have unique opportunities for research in this country and these must be exploited.

"We need to encourage our young researchers and provide adequate funds not only for their training but also in order to maintain their interest in and commitment to medical research."

There had been an explosion of knowledge in immunology in the past few years. About 25 000 immunological papers were published in English internationally each year and there were about 15 000 professional immunologists in the world.

"We are all involved in a scientific revolution in medicine that will ultimately yield the ability to prevent most diseases and effectively treat almost everything."

Professor Arthur Rabson . . . inaugural lecture.

Consumer takes brunt of higher power tariffs

EAST LONDON — The increased electricity tariff resulting from Escom's charges going up 7.5 per cent in the Border undertaking from July 1, have come into effect.

Organised industry and commerce, the East London City Council and Border members of Parliament protested strongly but without effect when country-wide increases were announced by Escom in April.

In most places, including East London and King William's Town and towns like Beacon Bay and Gonubie which are supplied directly by Escom, the full 7.5 per cent has been passed on to the consumer.

In East London, the increase means the account of a householder using 700 kilowatt hours a month goes up from R24,[illegible] to just over R26.

In Grahamstown, a five per cent increase was imposed last month and typical accounts have risen from R22,21 in May to R23,97 in July for householders. — DDR

Up to 8 000 jobs on Soweto scheme

By DERRICK LUTHAYI

THE lowest paid worker employed by the Industrial Electrical Company for the Greater Soweto Electrification project will be paid R40 a week.

A joint announcement by the Greater Soweto Planning Council, Tesacon and the Industrial Electrical Company said that between 5 000 and 8 000 jobs will be filled at the peak period of activity in June 1981.

Approximate numbers of those required for the semi-skilled and skilled categories and earning capabilities are: Administration = 300 (from R30 a week); Security = 100 (from R40); Technical Supervisor = 500 (from R60); Potential artisans and other skilled workers = 600 (from R45); and semi-skilled = 1 500 (from R40).

In addition, the major sub-contractor on the project, IEC, will employ 3 000 to 5 000 self-employed entrepreneurs.

A R22-million contract for the entire installation of cables, street lights and equipment for the project was signed this week between Tesacon, the main contractor, and IEC, to whom the installation contract has been awarded.

Workers in all categories will be referred to the employer, IEC, by the West Rand Administration Board, through their offices in New Canada.

Job-seekers can also apply to Diepmeadow, Dobsonville and Soweto councils, township managers, which will in turn refer them to the New Canada recruiting office.

The managing director of IEC, Mr Tony Orbach, this week said people with all standards of education and experience will have a career as well as job opportunities.

"Hundreds of jobs will be available. Skills learnt will be needed for continuing maintenance and expansion in Greater Soweto. The need for housing and services all over the country make more opportunities," said Mr Orbach.

Preference will be given to applicants from Soweto, but posts which cannot be filled will be given to people from other areas.

ENERGY

1 APRIL 1980 — 30 April 1980

BUSINESS

55

Star 1/4/80

Ethanol plant prospectus to be 'revamped'

Own Correspondent

SA Ethanol Fuels, a Pinetown company seeking to raise R1,4-million from the public to build a new ethanol plant, did not allocate shares yesterday as planned.

Following reports that the commerical branch of the police had been called in to investigate the firm's prospectus, managing director Mr R H Ottignon said yesterday that the prospects was being "revamped."

"We don't want to breach the law on purpose," he said. "We have discovered the prospectus has a technical error and therefore it is being revamped, following which it will be re-registered."

The prospectus had apparently not been registered although it had been lodged with the Registrar of Companies for three months, he said.

Meanwhile, his plans came under renewed fire from the Stanger business association which says it lodged the original complaint with the commercial branch of the police.

The association's president, Mr Haniff Manjoo, claimed from Stanger that financial projections made in the prospectus were completely out of line with market prices (Mr Manjoo's association has itself announced the possibility of launching a rival plant).

The prospectus, he said, projected a purchase price of R6 a ton for cane tops to be used as raw material for conversion to ethanol. In fact, Mr Manjoo claimed, existing prices were R18 to R20 a ton and R6 a ton would not even cover transport costs.

Mr Manjoo said that selling of shares had started before registration of the prospectus. This, he said, was in violation of the Companies Act.

Replying to Mr Manjoo, Mr Ottignon said he could obtain cane tops "which are basically trash" for R6 a ton. He disputed that transport costs would exceed this sum.

He also said shares had not been offered to the general public — only private subscriptions had been invited at this stage.

Commenting on claims in the press that negotiations to buy the old masonite factory at Canelands had "fallen through," Mr Ottignon said he had a "different interpretation." In fact, he still had the option of buying one of two sites, he claimed.

Mr Ottignon admitted he had been a director of a company called Animal Growth which operated in the Transvaal in about 1973 or 1974. The company, which involved public investment in pigs, had folded.

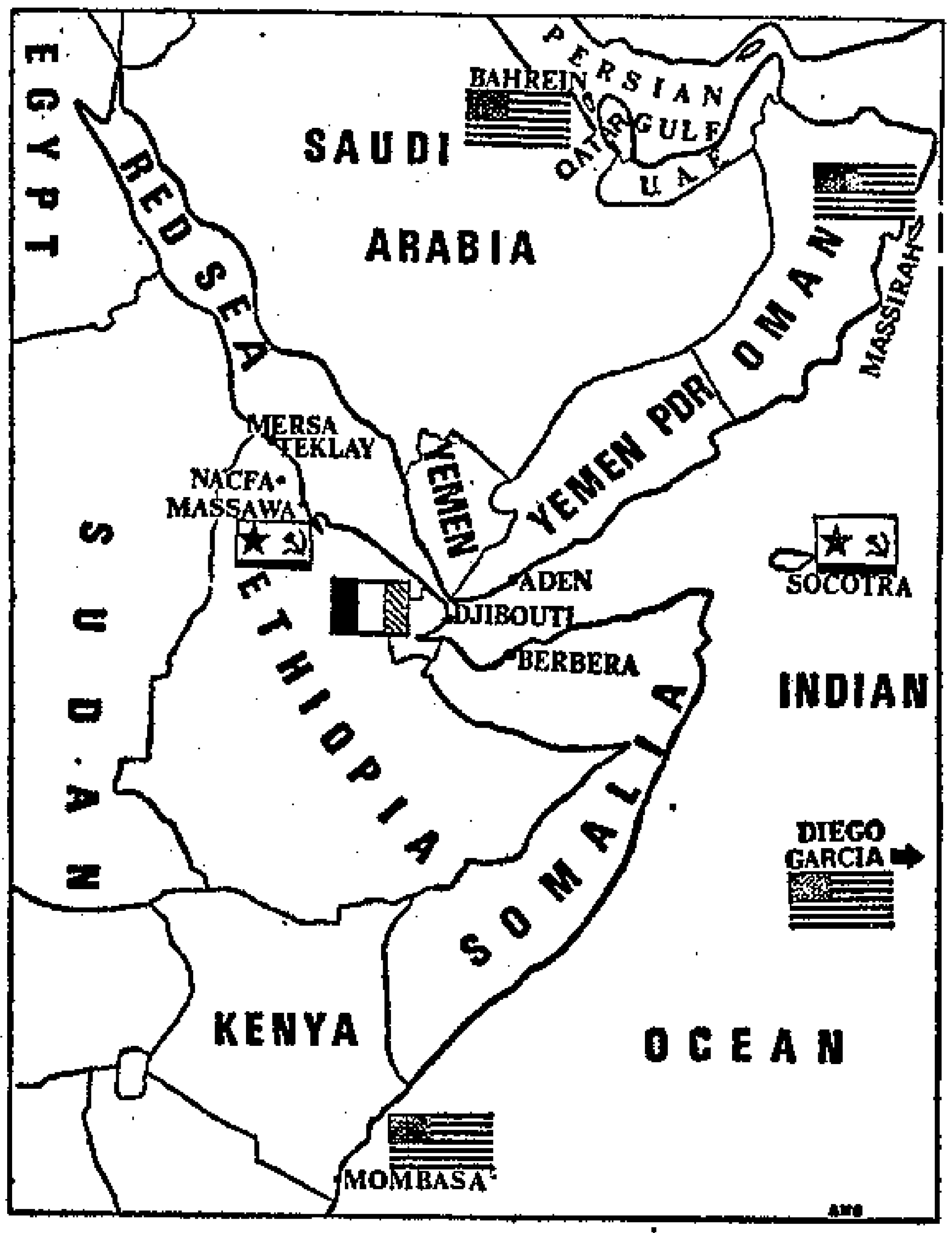
Mr Ottignon said he had left the company before this happened.

COLD WAR

Battle for oil routes

Star 2/4/80. 55

Events in Iran and Afghanistan have cast a new urgency on the big power cold war for the Horn of Africa. The second of a three-part series, by HENRY REUTER, of The Star's Africa News Service in Nairobi.



"Somalia and the United States are now engaged in fresh negotiations on how to ensure stability and security in the region" — President Siyad Barre of Somalia in a speech to his national assembly on March 6, 1980.

"Somalia has never given any bases to any country because this is against our policy and we do not intend to do so" — Barre in Doha, Qatar, on March 6 1980.

"Three countries on the Indian Ocean — Oman, Kenya and Somalia, have agreed to allow United States forces to use their military bases to protect the oil route" — US Defence Secretary, Harold Brown, on March 12 1980.

These quotations sum up the confused state of the East-West one-upmanship struggle for control of the Horn of Africa sea routes since the area became the cold war front line as a result of events in Teheran and Afghanistan.

The confusion is compounded by third party intervention from the Arab oil states who are seeking to use cash instead of navies in pursuit of their own declared aim of turning the vital Red Sea link between the Indian Ocean and the Mediterranean into "an Arab lake".

At the moment all the signs are that the cash is winning the war for allegiances while, with one exception, the Kremlin is conquering on the land while the US is winning the non-war at sea.

For several years the US naval force in the Persian Gulf area consisted of a command ship, two frigates and from time to time an oiler, all of which were part of the Middle East fleet operating out of Bahrein.

Recently the US increased its force in the Indian Ocean to two full-scale aircraft carrier battle groups.

These were joined by an amphibious warfare force of seven ships capable of carrying 10 000 marines, making the US navy by far the most powerful force in the Indian Ocean.

From a Nato viewpoint this is backed by a strong French fleet.

The Soviets, with an average of 20 naval ships in the Indian Ocean, of which 13 to 15 are combatant, are greatly outnumbered.

The US show of force is regarded by Horn country cynics as more a prelude to the US elections than a naval battle for oil routes.

So far, in the competition for Indian Ocean naval bases America has clinched only one deal — with Sultan Qaboos of Oman for the use of Massirah.

bases for anybody" statement followed his acceptance of offers of "significant amounts" of military and economic aid from Iraq and of financial aid from Saudi Arabia.

Kenya agreed to extend facilities always offered to US naval ships to include more frequent calls because of the greater numbers of US warships now in the Indian Ocean, but has made it clear that a "facility" is not a base and that the only American constructional work it is likely to accept at Mombassa is the building of a bigger port water storage tank.

American officials have said Kenya will always be considered more important to the US than Somalia, should their interests clash.

The net outcome of all these negotiations is that the US will have to continue using far away Diego Garcia as its main Indian Ocean base.

Against this, the major Soviet naval and submarine base is well established on the strategically sited Socotra Island. It has the use of Massawa and it recently signed a friendship treaty with South Yemen which makes this country a virtual Russian satellite and prepares the way for a sophisticated Soviet base to be set up in Aden.

Policy

US Government strategists now admit that by their move out of Somalia into Ethiopia at the end of 1977, thus ousting the US from Ethiopia and closing the Kagnew satellite station there, the Russians notched up an important cold war victory.

Today the Russians are virtually running Ethiopia. Latest estimates say there are more than 1 000 Soviet and 150 East European equilibrium occurring

As we may [illegible] always a
year below [illegible] start off
a position [illegible] of a particular
product p.q. [illegible] the suppliers
are prepared [illegible] - is a surplus
and the price [illegible] the following
year there will be a shortage as the
suppliers will produce less so the price
will rise and as we can see this
will tend to equilibrium position.
This might not necessary happen
in practice as we have other factors
such as floods, draughts etc. ~~which~~ which may
upset this tendency towards equilibrium.

[illegible] Secretary Brown's assertions it has made no deal yet for Berbera.

In return for the use of this (non-existent according to Barre) Soviet-built base with its excellent port, two airfields, fuel and missile storage facilities, barracks and high frequency communications sites, Barre demanded in recent talks heavy US financial aid and a massive arms lift.

When the US began speaking of "defensive arms" only, Kenya, which fears a Somali invasion of its north-east region issued warning signals, asking "what's a defensive army anyway?"

Meanwhile Barre was being wooed in Arab oil money. His "no

[illegible] military advisers in Ethio[illegible] plus more than [illegible] Soviet civilian advisers [illegible] to hold key posts in every ministry and dictate policy at all levels.

In addition, thousands of Cuban troops in Ethiopia are deployed mainly in running military training establishments.

Nevertheless, in Eritrea, in the north of the country the past year has seen significant reverses for the Soviets and their allies.

● The third and final article in this series tomorrow will describe how Soviet and Cuban noses have been bloodied in both Eritrea and Ethiopia's region and the political repercussions of these military defeats.

SA to make all its own fuel

55

Star 2/4/80

By Jaap Boekkooi

Two South African chemical giants are to produce enough motor fuel to help make South Africa virtually independent of outside sources and to justify the manufacture of a special methanol-burning car engine in this country.

AECI and Sentrachem are to manufacture another 1,1-million tons of motor fuels a year — almost three-quarters of the projected output of Sasol 1 and 2.

Apart from making South Africa self-sufficient in motor fuels, this could cut oil imports to a trickle.

AECI [illegible] also linked [illegible] with two [illegible] companies, Shell and Volkswagen, to produce cars in South Africa running on locally developed Methanol engines.

Methanol is a motor fuel extracted from low-grade coal.

The first of the two cars will be a feature of the Rand Show which today opened to industrial viewers.

AECI has also launched a massive research programme to perfect the use of methanol fuels in other engines, such as petrol and diesel.

Showpiece

Another showpiece at Milner Park will be a methanol-powered bus which has completed a 20 000 km trial run in West Germany.

[illegible] which has

cohols as motor fuels, also announced a big step into the methanol field today.

The company said that early next year it will start building a new ammonia plant which will enable it to produce about 300 000 tons of methanol a year from about 3,5-million tons of coal.

Added to an envisaged production of 800 000 tons a year by AECI, this will add up to 1,1-million tons, compared with Sasol's present projected output of 1,5-million tons.

Unique

AECI has come up with a unique way to develop 100 percent methanol engines, by adding an explosive-like "chemical spark plug" to methanol fuels, thus improving its ignition.

This research has been done in the past year and a number of patents have been taken out.

Driving a methanol-powered car in South Africa is likely to be 10-15 percent cheaper than a petrol car, Volkswagen's head of product engineering, Mr Waldemar Geiger, said today.

If sold today, methanol would cost some 26c a litre, much lower than the petrol price.

intensity in the production processes, affording opportunities for the development of a high degree of skill in workers, characteristically in this part of the country, while in the other industrial areas of the country the momentum for their higher rate of growth was derived from the capital intensive heavy industries that are less sensitive to the volatility of consumer spending.

The geographical distribution of manufacturing employment per magisterial district in the Western Cape is shown in table 2.4 with further analyses in table 2.5.

2.4 The cyclical characteristics of the Western Cape economy

In illustration 2 the level of economic activities in the most important metropolitan areas of the Republic is shown on monthly basis from January 1970. Since January 1970 the graph for the Cape Town metropolitan area reflects a sustained backlog relative to economic activity levels in other metropolitan areas of the Republic.

The present economic recovery is largely based on a revival in consumer expenditure on durable goods, and although the Cape metropolitan area benefitted to some extent from this the levels of local activity are already showing recurring signs of weakening.

2.5 The increasing secular vulnerability of the Western Cape economy

The main contributing factors to the declining competitive ability of the Western Cape manufacturing sector are the growing tendency towards concentration in the retail trade, and cost disadvantages relating to local manufacturing especially, es[illegible] ch are relatively more [illegible] than to the remainin[illegible]

Transvaal petrol price up 2/4/80

PRETORIA — The petrol price was increased on the Pretoria Wiwatersrand-Vereeniging complex yesterday by two-tenths of a cent a litre.

The reason, according to the Director of the Motor Industries Federation, Mr Jannie van Huyssteen, was the budget increase in rail rates on petrol by 3,8 per cent and 4,1 per cent for diesel.

He added that the MIF was "reasonably" confident that the price of fuel would now remain stable until at least the end of the year. — DDC.

CAPE TIMES 3/4/80

Methanol plan could make SA independent

(55)

Own Correspondent

JOHANNESBURG. — Production of methanol on a scale large enough to make this country independent of petrol imports is being examined by three of South Africa's largest industrial concerns.

AE&CI, Shell and Volkswagen are to examine the possibility of erecting a R450 million methanol production plant capable of producing 800 000 tons of methanol a year, that together with other similar projects, "could make South Africa independent of imported energy by the year 2000," a spokesman for AE&CI said yesterday.

Visitors to the Rand Show yesterday saw two Volkswagen Golf cars and a bus being run on methanol produced by AE&CI.

The bus has completed 20 000 km trouble-free in Germany.

Millions may be spent on research

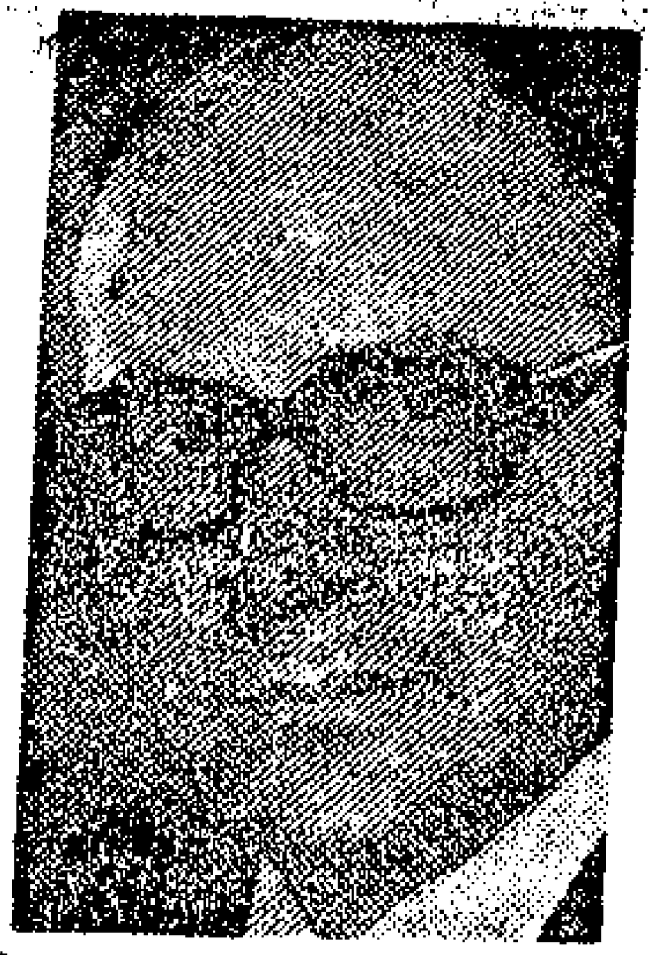
An AE&CI spokesman said yesterday that during 1980, R500 000 will be spent on research. This figure could eventually run into millions of rand.

In the short-term, AE&CI wish to convert their entire fleet of vehicles to methanol, in order to establish whether methanol can be used as a replacement for diesel.

In addition to the two South African-built Golf cars in display at the Rand Show, AE&CI have eight more on order.

The engines used in the methanol-powered Golf are Volkswagen 1600 units fitted with special carburettors.

Modifications were required, and it took approximately twice as much methanol as petrol to produce the same energy.



Professor D J Kotzé of the Institute of Energy Studies, RAU.

RAU plans energy course

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~~54~~

Star 3/4/80.

The Rand Afrikaans University will introduce South Africa's first degree course in energy management next year.

The one-year honours degree is designed to produce energy planners — people who can tell corporations how to meet their future energy needs.

"We have established that there is a demand for this training," said Professor D J Kotzé, who will run the course. "It is especially needed by people employed in the planning departments of the civil service and petrol, mining and chemical companies."

Students will study energy economics, technology, resource allocation, the geographical and political implications of power sources, and the formulation of energy policies.

Cheap and fragrant meth fuel by 1985

55 Star 3/4/80

No petrol as I test-drive into the methanol age of SA motoring

By Jaap Boekkooi

By 1985 you may drive the ol' jalopy to your friendly meth station around the corner; ask the jock to "fillerup" — and zoom away in a cloud of pollution-free, scented exhaust fumes.

That will be the dawning of the Methanol Age for South African motorists, at last freed from the capers and caprices of crude oil sheiks.

AECI, the South African chemical giant in which De Beers and ICI have major stakes, has announced it is testing methanol-driven cars made out of local odds and ends in Uitenhage.

R20 TO CHANGE

I tested one of the cars, a 1 600 cc German type which with methanol has enough vooma to equal a 2,5 litre sports, and found it otherwise no different from the conventional one in a Main Street showroom, except for a slightly more pleasant smell from the exhaust, reminiscent of motorcycle racing tracks.

Below the bonnet the engine compartment looks no different. Plastic pipes have been replaced by rubber ones impervious to alcoholic corrosion, the carburetter has been modified, the distributor given a single vacuum.

New hot-plugs replace the older types inside the engine, and there are high-pressure pistons to give the 12-to-one compression ratio. Total cost of all changes from a petrol-driven to a methanol-driven car: R20.

The car, says Volkswagen's head of product engineering, Waldemar Geiger, will probably be cheaper to drive as well, despite needing a bigger fuel tank (you need 1,7 litres of methanol to equal the energy of 1 litre of petrol).

As the Minister of Energy, Mr de Klerk, promised that homemade fuels would be taxed solely on their energy content, and methanol cars use energy better with their high-compression ratios, Mr Geiger says he expects the cost of driving from A to B in a meth jalopy will be 10 to 15 percent lower than in its petrol-powered cousin.

There are some other advantages as well. You may still put that old "Pardon my exhaust" notice in the rear windscreen, but scribble below: "But it contans no lead, smells better and is low on nitrogen monoxides even though the carbon monoxides are slightly up."

Motor manufacturers and methanol producers are naturally hoping that the Government will encourage methanol-driving by (a) converting all official vehicles to this alcohol and (b) getting diesel owners to switch to the new stuff and (c) allowing the liquid to be sold below petrol prices and 24 hours a day.

Pretoria has promised nothing, but the men involved wink over secretive smiles and say: "The chaps in Pretoria are so co-operative ..."

The new fuel will not be with us for another five years, for neither AECI nor Centrachem has decided yet which low-grade coalfields will be the sites of their plants or when to turn production switches.

But when all their plans reach reality the Sasols, the methanol factories and a few ethanol mills will probably turn out some 70 to 80 percent of all the fuel burning in internal combustion engines all over the country.

STRATEGIC

This alone will put South Africa in an impregnable strategic position.

The experts themselves still differ much over when South Africa may be completely self-sufficient in transport fuels.

Said Mr D N Marvin, AECI's managing director: "It is not an impossible challenge to get there by next decade."

Contradicted John Kilroe, a Shell oil chief: "The end of the century might be a good target, but it might be later."

If the experts disagree, let's hope for meth motoring by 1985.

ENERGY FM 6/4/80

Silver streak

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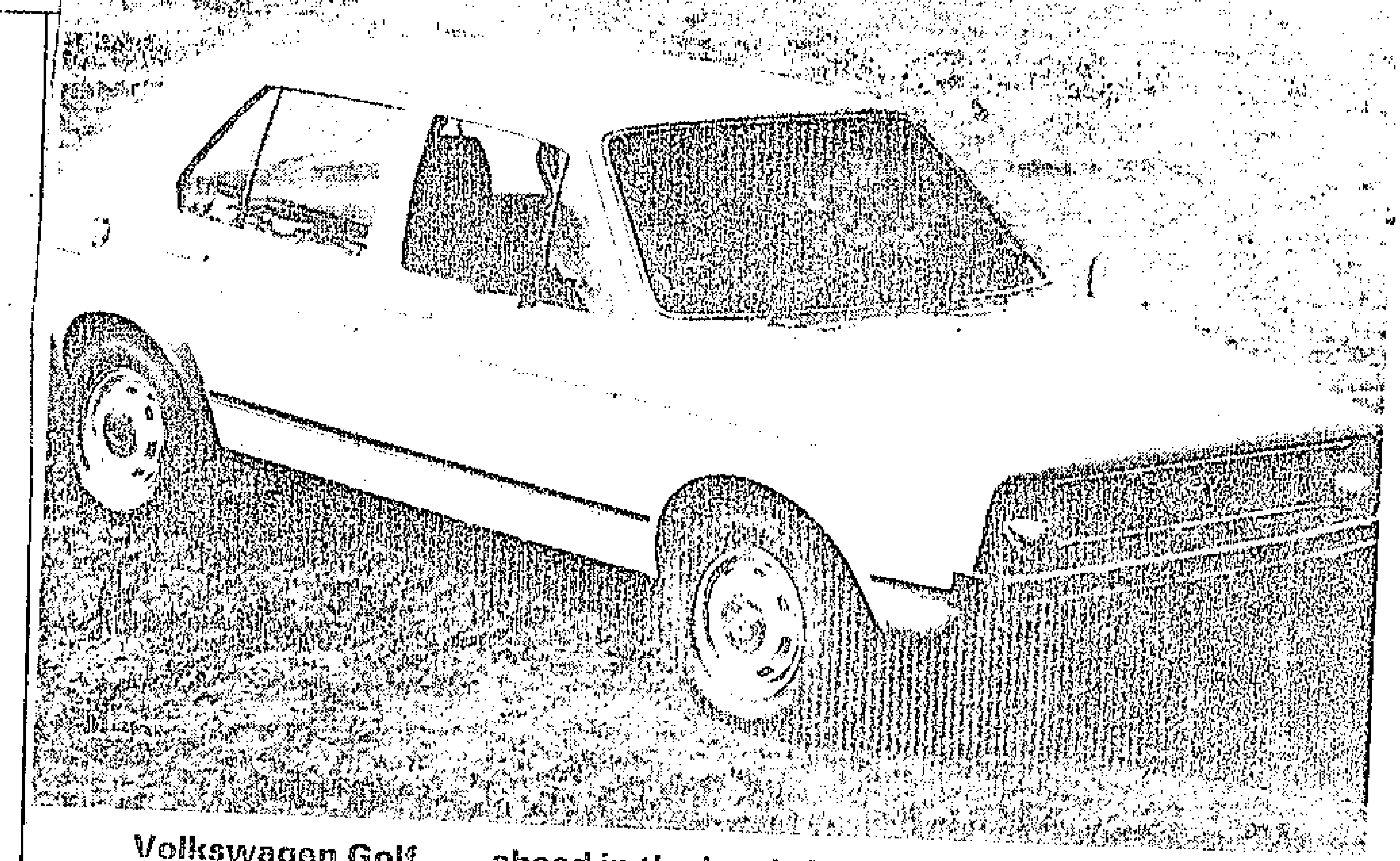
The most innovative exhibits at this year's Rand Show are almost certainly the AECI/Volkswagen/Shell methanol-powered, Golf "Silver Streak" cars.

These are the first SA vehicles designed from the start to run on pure methanol.



Volkswagen Golf . . . ahead in the local alternative fuel stakes

According to Volkswagen product manager, Waldemar Geiger, "The engines had to be redesigned and a number of components substituted to enable the two cars to run on M 100 (pure methanol)."

Volkswagen 1600 engines, fitted with special carburettors, were used. And modifications to the engine, carburettor, accelerator pump, fuel lines, manifold system, and ignition system were necessary.

Changes were required because of the combustion characteristics of methanol, and natural rubber substitutes replace synthetic plastic and rubber components.

Geiger claims: "No great cost was involved. When standard production of these cars gets underway, even these marginal cost factors will be greatly reduced."

Modifications to the carburettors focused on:

The doubling of the fuel jet area; the reduction of air correction jets to approximately a half to one-third of that used for petrol; and an increase in the delivery volume of the accelerator pump.

These modifications were vital, as it takes approximately twice as much methanol as petrol to produce the same energy.

Geiger stresses that "this does not necessarily mean the methanol-powered engine's fuel consumption will be double that of its petrol counterpart. The engine operates more efficiently on methanol due to the higher compression ratio. The torque is also improved by approximately 12%."

Modifications were also carried out to the ignition and spark timing; and fuel system among other items.

Says Geiger: "Development is also required in additional areas. These include carburettor adjustment, improving performance from cold starts, prevention of vapour locks on hot days, and so on. But we can achieve these improvements at a fast pace," he avers.

Shell's participation was motivated by a need to obtain experience in handling methanol on a commercial basis.

AECI regards methanol as an exciting replacement for petroleum-based chemical feedstocks, in addition to being a very good motor fuel.

It has operated the only coal-based low-pressure methanol plant in the world for about five years — a plant which now produces some 60 000 ℓ of methanol a day. Although this is not much, AECI could produce vastly increased qualtities should it decide to build a fuel methanol plant.

The existing plant is attached to a 1 000 t per day ammonia plant and draws synthesised gas from its Koppers-Totzek gasifiers. The technology used for the manufacture of ammonia is very similar to that used for the production of methanol.

A fuel methanol plant would probably be designed along similar lines to AECI's No 4 ammonia plant.

SA pays Shell for Salem oil cargo

CAPE TIMES 4/4/80

5-5

~~280~~

~~327~~

Own Correspondent

JOHANNESBURG. — Shell International Petroleum Company Limited has accepted a "substantial sum" from the official South African oil purchasing agency, SFF Association, as the agency's full settlement for crude oil which the tanker, Salem, discharged in Durban in December.

Dr Schalk van der Merwe, the Minister of Industry, Trade and Consumer Affairs, last night forbade the press to publish the actual sum paid to the company.

This is the first time the port at which the Salem secretly docked to discharge part of her cargo before being scuttled off the west coat of Africa, has been officially named. Till now the press had been restricted to references of "an African port".

Shell statement

In a statement from Shell International in London, the company said:

"Shell International Petroleum Company Ltd (Shell) and SFF Association (the official SA oil purchasing agency) have settled between them their dispute over that part of the cargo of crude oil discharged from the Salem at Durban in December.

"Shell has, after obtaining advice on their rights of recovery under South African law, accepted a substantial sum in full and final settlement of all

company which owned the tanker, for compensation for the light crude oil. Mr Soudan's Oxford shipping company is centred in Monrovia, Liberia, but also operates from an office in Houston where Mr Soudan is executive vice-president of American Polomax International.

Other developments were:

● The captain of the Salem, Mr Dimimitrious Georgoulis, was named as master of a Greek ship, the Alexandros K, which sank mysteriously last year after being diverted to Lebanon where her sugar cargo was sold while en route to Saudi Arabia.

● Two senior Scotland Yard investigators arrived in South Africa at the end of February to probe a possible local link in the saga. They said, as far as they could establish, that no South Africans were involved in anything illegal.

● The Afrikaans Sunday newspaper, Rapport, published a report in February saying that Mr Soudan attempted to

To page 2 A

55 (280) (327)

A From page 1

get loan facilities in South Africa to buy the Salem. Volkskas Bank furnished him with a credit letter enabling him to borrow R12,3 million for the ship. The transaction was carried out by the Marine Midland Bank of London who, in turn, guaranteed the money to the ship's owners, Pimmerton Shipping Ltd of Monrovia, Liberia.

● Volkskas Bank admitted issuing the credit letter for the purchasing of "commodities", but said it was unaware it was to be used for the Salem deal.

● Captain Georgoulis and the chief engineer, Mr Antonio Kalomiropoulos, were extradited from Senegal to Monrovia and have been charged under a section of Liberian law covering the licensing of ship's officers.

claims against SFF, and SFF have accepted a release by Shell in respect of all claims to the oil discharged from the Salem in Durban.

"Shell intends to pursue other claims in respect of the loss suffered. The inquiries into irregularities by third parties are being pursued by police authorities."

The mysterious circumstances surrounding the scuttling of the Salem and the disappearance of her cargo of crude oil, have been part of an international fraud probe, involving police in eight countries.

On December 10 the ship sailed from a Middle Eastern port, bound for Genoa, Italy, where it was to deliver the oil to Pontoil Ltd.

Four days out of the port, the oil was sold to Shell Oil International in accordance with normal open market methods.

The ship then docked at a port — now named as Durban — and pumped ashore part of the cargo. The huge tanks were then filled with sea water.

Listing badly

On January 17 a tanker, British Trident, spotted the Salem off the coast of Dakar on the bulge of Africa. She was listing badly in the calm seas but sending out no distress signals.

Five minutes after the captain of the British ship spoke to Salem, there was an explosion and minutes later the 24-man crew of Salem headed for the Trident in lifeboats. She sank 30 hours later.

The resulting oil slick was 38 km long and 8 km wide — far smaller than would be expected from a tanker carrying a full load.

The giant marine insurance house, Lloyds of London, the underwriters, instituted an investigation into suspected fraud and piracy.

Then began a four-nation probe into the circumstances of her sinking.

Shell International issued a writ against Mr Fred Ed Soudan, a director of the tanker

BUSINESS

The 3-prong thrust for a new fuel

(55)

Star 5/4/80

By Stephen Suckley

Steps to make South Africa self-sufficient in terms of motor fuels have been given a further boost with a concerted involvement of the private sector in producing methanol.

Certainly, one of the major steps to this end is the announcement by AECI, the country's chemical giant, that it is to intensify its research programme into the more effective use of methanol as a fuel in diesel and petrol engines.

The fruits of AECI's labour in this field will be to convert the group's fleet to methanol and the research and results will be made available for the benefit of the country as a whole.

Together with Sentrachem, AECI will produce between them another 1.1m tons of motor fuels a year, which will go a long way towards severing South Africa's dependence on costly imports of oil.

Sentrachem through one of its subsidiaries has erected a complex to produce amonia from coal at the same time paving the way for the group to produce some 300 000 tons of methanol.

In what can only be described as a concerted effort to get methanol established as a real and viable substitute to oil based petrol, AECI has teamed up with Shell SA and Volkswagen SA.

Also involved in the programme, the largest of its kind seen in the Republic, are the German diesel engine manufacturers Deutz and MAN, and the Energy Research Institute of the University of Cape Town.

AECI's research involves the road testing of ways in which methanol can be used as an alternative for diesel and compression ignition engines.

Work on hand at the moment includes the development of ignition improvers, co-ordination with the energy research institute for the conversion of a diesel engine to run on methanol.

Special diesel/methanol engines have been acquired from Germany for trial purposes.

At this stage of the development AECI has also converted existing fleet vehicles to run on a 15 percent methanol/petrol blend.

Also as part of the research programme, AECI has ordered 10 passenger car vehicles from Volkswagen with 100 percent methanol engines. At present AECI produces methanol from coal at the rate of some 30 000 tons a year and the company sees the move into this type of programme as a natural extension of its activities.

MYSTERY

A brief description of how methanol is obtained may take away some of the mystery of this commodity which has become somewhat of a household word since the fuel crisis reared its ugly head is recent times.

The method of obtaining methanol from coal falls under the processes known as indirect liquefaction. The coal firstly undergoes a gasification process when steam and oxygen is introduced and the product that is formed is known as a synthesis gas — a mixture of carbon monoxide and hydrogen. The gas is then converted into liquids using a suitable catalyst.

In the reaction methanol is produced with few by-products. Because the process is relatively simple in terms of equipment needed the production of methanol is the most cost effective of current commercial coal liquefaction in use.

But what are the advantages of using methanol to replace — eventually — the use of petrol or diesel fuels.

According to tests conducted the product has been proved to be a good spark ignition motor fuel with a very high octane rating which will allow engines of greater compression ratios to be designed.

But by the same token methanol is a poor diesel fuel but there are ways of getting around the problem. These include using what is known as a dual fuel engine where methanol is injected into the engine along with some diesel.

The insertion of a spark plug into the engine which then operates as a high compression spark ignition unit is another method.

EXPERIENCE

The involvement of Shell in the research programme will give the company invaluable experience in the handling of methanol as an alternative fuel on a commercial basis.

According to Shell, expert handling knowledge will be required so that safe and reliable supplies of the commodity can be maintained when alternative fuels are introduced.

Shell will use its existing bulk storage facilities, handling distribution and dispensing arrangements. These will be upgraded and modified as experience is gained through the research programme.

VW believes that motor vehicles operating on pure alcohol fuels such as methanol and ethanol are practical and if everything moves according to plan could be marketed in South Africa in a very short time.

According to VW SA's managing director Peter Searle "VWs range of vehicles in South Africa can already operate on blends of methanol and petrol with only minor adjustments being made.

"However, the engines used on the 10 vehicles ordered by AECI will be running on 100 percent methanol using parts supplied from Germany and local suppliers."

But said Mr Searle, diesel fuel which is by far the most efficient, is a bigger problem than petrol."

"Even the blending of methanol and diesel does create problems but there have been very encouraging results of late by the Chemistry Department of Wits in the use of a third agent to facilitate the mixing of these two fuels.

With South Africa's vast coal reserves and a firm commitment by Government (through Sasol) and the private sector through such companies as AECI and Sentrachem in seeking a viable alternative to oil-based fuel is as sensible as it is commendable.

The world's oil reserves are dwindling and as they become more rare so they will be subject to ever escalating price increases.

The urgency of finding an alternative for oil-based fuels is gaining momentum throughout the world — perhaps more so in this country because of the high price that is paid for oil.

Certainly if the use of methanol gets the stamp of approval through successful research then the country will see the end of the vagaries that imports of the present types of fuel bring to bear.

Running your motorcar on methanol will be no cheaper — in fact initially it may well prove more expensive but certainly over the longer term industry, commerce, and the private motorist will benefit in as much that the price of this fuel will be more stable and only subject to price increases through local inflationary pressures.

Salem hits headlines again—but not in SA

55

Star 7/4/80

The British Press is reporting fully this long weekend on the mystery of the oil tanker Salem giving facts, figures and details which are censored here on the grounds that they are "secret."

The secrecy exists only for South Africans who may not be told of the allegations being made, because this information is banned by a ministerial ruling in terms of the Petroleum Products Act.

"GAGGED"

Dr Van der Merwe, Minister of Industry, Trade and Consumer Affairs, was not available for comment on the overseas reports. One of these reports, by the Insight Team of the London Sunday Times, makes specific allegations about Sasol and deals at length with the Salem mystery.

Other newspapers report on the repayment made to Shell by SSF Association (the official SA Oil purchasing agency) in connection with the Salem incident. They publish a specific figure paid to Shell, but this information is also censored in South Africa.

Earlier reports were also censored, and Opposition spokesman Mr David Dalling protested in Parliament. While the SA Press was being gagged, the rest of the world was being enthralled by details of one of the greatest and most audacious thefts in modern history, he said.

DISPUTE

The Government continues to ban information on the grounds that publication could affect the supply of oil to South Africa . . . even though the same information is published throughout the world. However, the following official statement has been allowed:

"Shell International Petroleum Company Ltd (Shell) and SFF Association (the official SA oil purchasing agency) have settled between their dispute [illegible] Salem at Durban in December.

"Shell has, after obtaining advice on their rights of recovery under SA law, accepted a substantial sum in full and final settlement of all claims against SFF, and SFF have accepted a release by Shell, in respect of all claims to the oil discharged from the Salem in Durban.

OTHER CLAIMS

"Shell intends to pursue other claims in respect of the loss suffered. The enquiries into irregularities by third parties are being pursued by police authorities."

The sinking of the Albahaa B, and the Mycene of Senegal is widely reported in overseas newspapers this weekend. Many papers try to draw a parallel with the sinking of the Salem.

But the Albahaa B's operators say: "The fact that the tanker visited South Africa might be embarrassing to her owners, but there was nothing sinister about it."

'NO PARALLEL'

Mr Michael Steele, managing director of Wallem Ship Management, said in London "It might cause problems for the owners with their suppliers but as far as we are concerned, as operators, we take instructions as to where a ship is to go and that is what we do as long as it is not illegal or dangerous."

He said there was no parallel with the loss of the Salem.

He said the explosion in the Albahaa B occurred during tank washing, possibly through a build-up of static electricity.

The Natal Mercury

MONDAY, APRIL 7, 1980

55

MAKE IT SIMPLE

THE NEWS that two of the country's biggest chemical groups plan to manufacture motor fuels on a scale that eventually could make South Africa self-sufficient in this vital commodity, points to the quickening pace with which the country's industrial and technological resources are mobilising to meet the energy crisis.

If the reported expectations of AECI and Sentrachem are fulfilled, then another 1 100 000 tons of home-produced motor fuels will be added annually to the projected capacity of Sasol 1 and Sasol 2 - enough to enable the country to cut its oil imports to a relatively token amount. With such an impressive new prospect being aired it would be gratifying to know that Government policy-making concerning the energy situation was geared to the same high level of efficiency and advancement.

Unfortunately that does not seem to be the case. On the contrary, reports abound on the lack of co-ordination in the Government's energy programme. A report just issued by the Energy Research Institute of the University of Capetown has echoed a criticism often expressed by Opposition spokesmen in Parliament — that the energy scene in South Africa is blanketed with excessive secrecy.

One effect of this is that energy analysts in the private sector are being deprived of essential statistics and other information which scarcely need to be cloaked in secrecy. Frequently this data is culled from outside sources. Moreover, although the Government has given the green light to private enterprise to manufacture motor fuels, and it is clear that private industry will have to play a key role in the country's energy future, there is no meaningful machinery to give this sector a say in policy matters.

One spokesman in the private sector has pointed out that there are some 16 different committees, departments, institutions, boards and Government undertakings that are concerned with energy affairs. 'So the set-up for energy here is unfortunately so fragmented that effective and co-ordinated planning and action is almost impossible.'

To all intents and purposes bureaucracy has taken over. And unless something is done to loosen its grip its deadly tentacles will reach out to strangle initiative wherever it is found. What is needed, surely, is some central energy authority to which all sectors can relate. The present cumbersome structure of the Government's planning advisory committee seems to be doing more to bemuse than give clear direction.

Source: Escom

TABLE 3

COST BREAKDOWN OF DISTRIBUTION UNDERTAKINGS (CENTS PER kWh) - 1976

Cape Western	Eastern Transvaal	Natal	Rand/OFS
		0,059	
	,5	0,359	0,345
	3	0,435	0,416
		0,019	0,001
		0,852	0,762
		0,035	0,024
		0,120	0,087
		0,113	0,060
		0,268	0,171
		0,008	0,002
		1,128	0,935

Genmin bid to ease the diesel problem

C.T. 9/4/80 ~~219~~ ~~232~~ 55

By ADAM PAYNE

JOHANNESBURG. — In the recent merger of General Mining and Union Corporation, one aspect of enormous importance that was virtually ignored — because no projected earnings were possible — was the exploitation of Genmin's Springbok Flats coalfield for oil and chemicals.

I am told that when this project comes to fruition the accent will be on providing a product suitable for diesel production and the project would thus be a powerful weapon in reducing the shortage of diesel fuel which threatens to become a serious problem from 1983.

Already South Africa is a net exporter of petrol from time to time because more petrol than needed is refined to obtain the much-needed diesel fuel. Two important milestones lie ahead in Genmin's drive to launch its coal liquefication project:

- Before the year ends, Genmin will know if its coal performs well in coal liquefication demonstration pilot plants overseas, which produce a few tons a day.
- Also, during the year the process developers overseas, who have spent probably up to R1 000-million on research and development, will get the first results from their experiments in scaling-up the size of their pilot plants to commercial-size plants.

It is obvious that this project will have national strategic implications, and that normal commercial considerations will not be the only criteria in launching it. It would be most surprising if Genmin were not already in close consultation with the government.

One can expect that the final decision will be an amalgam of strategic and commercial considerations, which might easily involve government financial involvement.

Genmin is not aiming to build another Sasol. The Sasol process, which involves synthesis of gases, produces the lighter, or white spirits, petrols, with very little of the heavier fuels.

Methanols also supply the top fraction of the barrel.

The combination of these two could well lead to a situation where South Africa has to import excessive quantities of crude oil and re-export both the top of the barrel fractions — petrol, and the bottom of the barrel — bunker and heavy fuel oils — to get the required volume of diesel in the middle of the barrel.

This is the case for the production of synthetic crudes instead of simply multiplying Sasols.

The direct method of coal conversion, with which General Mining's experiments are concerned, broadly involves the crushing of coal and the combination of this with a heavy oil base to form a slurry. The hydrogen-deficient coal paste is then gradually broken down to molecular level by very high temperaures (between 400 and 600 degrees C) in a hydrogen-rich "soup" suitable for normal fractionating and refining.

I am told that the direct liquefaction processes have worked fairly well in small-scale demonstration plants producing up to a few tons a day.

The remaining problems to be resolved lie in the field of enginering scale-up from a few tons a day to hundreds or even thousands of tons a day.

This is not simply a matter of making things bigger — the engineering is extremely complex. Various overseas comanies and governments have spent sums approximating R1 000-million in total on research and development into these and related processes.

To do this is clearly beyond the scope of South Africa's resources, so Genmin will be seeking to license technology once it is proved. The first scaled-up plants are due to start test running overseas this year.

Genmin coals have been encouraging in laboratory tests and the company has announced that sufficient coal is being sent overseas for fairly long runs in the demonstration plants which produce a few tons a day.

Assuming that Genmin is told this year that (1) its coal is suitable for liquefaction in a demonstration plant and (2) that scaling-up experiments by the developers have ben successful, the next logical step would be for Genmin coal to be tested on a large scale in the scaled-up plants.

If this is successful then, subject to financial viability, the project would be ready to go. If eveything goes right, one could guess this stage being as late 1981.

Should further rsearch work be needed at any step the project will obviously move backwards in time.

Given the world liquid fuel position, it should be more a question of "when" rather than of "if" the project gets under way.

The size of the undertaking is speculative at this stage. I am told that even Genmin cannot evisage any particular size.

The diesel shortage is so serious that the equivalent of a Sasol 4 could be justified costing between R3 000-million and R4 000-million.

On the other hand, it might be prudent with a complex new process to start with the first unit of a modular scheme and build up later. A great deal will depend on oil politics and economics.

Genmin at its press conference reporting on the Springbok Flats coalfield disclosed that in partnership with Trans-Natal Coal Corporation it has already invested R13 200 000 on the project, building up a picture of the reserves in the area and researching the alternative ways of exploiting them.

Briefly, the reserves fall into four fairly distinct zones: an area of blend coking coal, areas of medium quality steam coal showing significant concentrations of uranium, extensive areas of medium low-grade steam coal and, lastly, smaller areas of poor-quality coal.

Of great ihterest is the fact that certain of these coals are more reactive to chemical processing than coals in established fields.

The company's plan for exploiting the coalfield falls into three separate operations:

1. The coal mining phase which will involve general mining (45%) in partnership with Trans-Natal (55%) in the benficiation and production of a washed product.
2. The exloitation of the carbonaceous content of this coal which has Sentrachem holding a 49% participation with General Mining and Trans-Natal each having a 25,5% share.
3. The metallurgical project which processes the uraniferous ash produced by the carbonaceous operation. In this case particpation is split evenly between General Mining and Trans-Natal. Only part of the coalfield contains the higher concentration of uranium.

As to the oil situation generally, even after allowing for various economic and conservation measures, the minimum growth rates for petrol and diesel needs are now estimaed at 2% and 5% annually respectively.

Satisfying the country's diesel needs is already a problem and one which is likely to be exaggerated once Sasol 1,2 and 3 are all on steam.

If the traditional refineries set their imports of oil at a level which, with Sasol, will satisfy South Africa's total liquid fuel needs, then given the limitation of the breakdown of crude oil by South African refineries, there will be a considerable over-supply of petrol and a critical shortage of diesel from 1983.

The government's awareness of this problem can be seen in the additional incentives which are being offered to domestic synthethic fuel processes which specifically favour the production of diesel. The gap has to be filled.

Shocks to follow power price rise

(244) (55) NM 9/4/80

Mercury Reporter

A 5,26 PERCENT increase in electricity charges announced by Escom yesterday will almost certainly be passed on to consumers in Durban.

And some experts fear that the increase will have a ripple effect on many other prices.

Mr Dennis Fraser, Durban's City Electrical Engineer, said: 'Costs are going up and it is unlikely that the council will be able to avoid passing the increase on to the consumer.'

Mr Jan Smith, chairman of Escom, said yesterday that the increase, which was the first for 18 months, had become necessary to ensure the financial stability of Escom to keep pace with rising costs and to contribute to Escom's capital development fund.

Mr Smith said that Escom had ended its last financial year with a surplus of R80 million but, because of rising costs, it expected to end the current year with a deficit.

Escom had kept its promise not to introduce tariff increases which exceeded the rate of inflation. If the increase had been left to next year, it would have been 'double digit'.

Mr John McCarthy, acting president of the Durban Chamber of Commerce, said that the increase had to be seen against its proper background in Natal.

Over-charged

The Province had been over-charged for electricity in the past and that was why there had not been an increase for 18 months.

The Chamber had not seen figures but would like assurances that the transfers to the capital development fund were reasonable.

'The final cost to the consumer could be more than the Escom increase.

'In addition, electricity is an input to so many costs and it will have to work its way through.

'Inflation will be the great issue this year. In this connection the Minister of Finance gave an assurance in his Budget speech that there would not be any further increases this year.'

Mr Roland Freekes, the executive director of the Natal Chamber of Industries, said that Natal was getting the lowest tariff ...

Power shock

NM 9/4/80 (55) (244)

FROM PAGE 1

recreational clubs when the commission was predicting that it would end the current financial year with a deficit.

She also attacked the projected improvements at Escom's indoor garden at Megawatt Park, estimated to cost between R200 000 and R400 000.

'Escom is blatantly flaunting its monopolistic and privileged situation in our faces. We are sick and tired of the Government sitting back helplessly and watching what Escom is doing.'

Mrs Joan Hemson, an official of the National Council of Women, queried the necessity for an increase when Escom had declared a profit for the last financial year of R80 million.

'I think they can live off their fat for a few years,' she declared.

And she continued: 'I think the public has the right to know all the facts and a breakdown of expenses before they accept the increases in the acquiescent manner which has become part and parcel of our daily life. We have become a very flaccid society.'

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THE NAME MEANS A GOOD DEAL

Some of Escom rise to be absorbed

STAR 9/4/80

266 260

5-5-

Fair Deal Reporter

The Electricity Supply Commission (Escom) says it cannot absorb its increased costs "in the normal business manner" but local municipalities will.

Johannesburg is increasing its already intended 10 percent July 1 increase by 2,81 percent as a result of the Escom cost rise.

Johannesburg, unlike its fringe neighbours Sandton and Randburg, which are wholy reliant on Escom power, relies on the commission for only a third of its needs.

On top of the 8,17 percent increase in tariffs for Witwatersrand and Free State users, will be an additional increase due to cost structure changes.

In Randburg and Sandton this will be an additional five percent, lifting their total increased costs to 13 percent.

A small Johannesburg householder using 800 units of electricity a month, now pays R19,06. His bill will rise to R21,85 after the July increase for the same number of units. July is a peak electricity consumption month.

A Sandton consumer using 800 units a month now pays R27,43. After the July increase he will pay R30,13 — an increase of 10 percent.

Mr Tony Hugo, town electrical engineer for Sandton, said that, although they had additional costs to bear, they would absorb them.

The Randburg town electrical engineer said he had not had enough time to calculate the effect.

Escom said it did not consider the increases would have a bad effect on the inflation rate. "Electricity's cost input into the economy is only 3 percent of the gross domestic product."

The increases are expected to have an inflationary effect on agricultural products, particularly produce and dairy products.

A spokesman for the SA Agricultural Union said electricity made up a large proportion of costs for these farmers.

● Page 3: Escom tariffs up — more to come.

● Page 4: Escom has no fear of efficiency probe.

ic film section, consisting of 5 films and 5 lectures, will be
r John van Zyl of Witwatersrand University who recently
in the U.S.A. studying ethnographic film. The cinéma
ill be presented by Mr Freddy Ogterop of the Provincial
10 is one of the most knowledgeable experts in this field.
erefore comprises carefully selected films and lectures
most up-to-date information available in this exciting

IC FILM:

reveals one society to another may be regarded as an
m. Any film which reveals the texture of human life on as
ossible: the appearance of a people and their surroundings,
ities, the quality of their interpersonal relationships, the
society and their values, is not only a valuable historical
lso increases society's knowledge of the present. There is,
hortage of this kind of film material in South Africa.
suggest some of the strategies and problems involved in
n-making.

The need for context. Film: *The Nuer* (70 min.)
Whole acts. Film: *Rivers of Sand* (88 min.)
History as it happens. Film: *Chulas Fronteras* (59 min.)
Backyard Ethnography. Film: *Daguerrotypes* (78 min.)
The local scene. Film: *Bushmen of the Kalahari* (50 min.)
OR a selection of local films

nk of cinéma-vérité, or direct cinema, as a modern
camera, that is, recording life as it is lived by means of
and natural sound. It was, interestingly, a film style
nological developments and then evolved into a social
applicable to documentary film-making, the phrase was
e Jean Rouch and Edgar Morin's *Chronique d'un*

been applied to many films that employed the tech-
cessarily subscribing to the philosophy. The first 2
es will explore the idea of cinéma-vérité as it emerged
and the United States and the third will discuss possible
latively recent development, the committed, local-issue

The observer: The fly-on-the-wall approach
Film: *Chiefs* (20 min.) or *A happy Mother's Day* (26 min.) *Running fence* (57 min.)
The catalyst: Acknowledging one's presence
Film: *The moontrap* (84 min.)
The militant: Fighting the good fight
Film: *It's ours whatever they say* (39 min.)
films related to this course will be screened each after-
It is advisable to see as many of these as possible. Fee:
he programme will be available in the final Summer

y change some of the film material listed above,
is available from abroad.

Escom tariffs up—more to come

STAR 9/4/80 55 ~~260~~ ~~266~~

Fair Deal Reporter

Escom yesterday revealed a bad-news package for consumers — electricity tariffs up an average of 7,26 pecent on July 1 — and almost got away with concealing worse news, that the cost rise will in fact be higher.

The Escom statement gave details of, for example, the 8,17 percent tariff increase in July for the Witwatersrand and Free State. This, the highest overall increase is for two areas that consume 60 percent of all electricity.

What it failed to mention was that additional increases would arise due to Escom's changing cost structure.

SANDTON

The Sandton and Randburg areas, for example, will each have an extra increase of five percent as a result of the structure change.

This will bring the total electricity cost increase for these areas to approximately 13 percent. An Escom spokesman said this would not necessarily be passed on to consumers. It would depend on the municipalities concerned.

But he said the structure changes would benefit large users with high load factors — they might have slight decreases due to structure changes, but would still be faced with the tariff increases.

APPROVAL

The proposed change in the tariff structure still has to be approved by the statutory Electricity Control Board. But, as Escom points out, such an application has not been turned down by the board since 1952 or 1954.

Mr I D van der Walt, senior general manager of Escom, said this would be the first and last increase to consumers this year.

Mr Jan Smith, Escom's chairman, said the tariff increase last year had been 6,1 percent per kw/h.

"Escom honoured its promise made in 1978 that the increases in electricity prices would not exceed the inflation rate. The increase for the last half of 1980 is considerably lower than the present inflation rate," he said.

But Mr Smith's comment did not take into account the possible effects of the proposed Escom cost structure changes.

The increases in tariff charges will bring an additional R60-million revenue to Escom. Officials said the cost structure changes would not supply additional funds, as costs to certain consumers would probably drop.

ORIGINATES

Johannesburg has already announced an increase of 10 percent in electricity tariffs from July 1. A third of Johannesburg electricity originates from Escom.

Escom claims Johannesburg could not have been aware of the Escom price rises beforehand, so prices could possibly rise marginally more in Johannesburg.

The average price per kw/h sold has increased from 1,535c in 1977 to an average of three to four cents per kw/h at present.

STRUCTURE

July tariff increases for areas not already mentioned — and not including cost structure changes — will be:

Eastern Transvaal 6,67 percent. Natal 5,26 percent — the lowest cost increase despite its distance from the Transvaal coalfields, a supposedly inflationary factor.

Western Cape 7,14 percent. Northern Cape 5,88 percent. Border 7,50 percent. Orange River 6.90 percent. Eastern Cape 6.90 percent.

Silence on reported flight across border

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lost 9/4/80

WINDHOEK — **The head of the SWA Electricity and Water Corporation has declined to comment on reports about an alleged daring flight by a local pilot across the Namibian border to close the sluice gates on the Angolan side.**

The gates are on the giant Ruacana Hydro-Electric Scheme along the Cunene River.

The Kunene forms the border in part between Angola and Northern Namibia.

According to some reports reaching here, a Windhoek pilot, Mr Jacques Migoette, had succeeded single-handedly in lowering the sluice gates on the Angolan side of the R261-million power scheme, causing millions of litres of "lifeblood" water to be diverted to Namibia.

Other reports stated that the pilot had been assisted by four young soldiers in his daring venture.

Mr Brand said yesterday afternoon he could neither confirm nor deny that the alleged flight had ever taken place.

"All I can say is that one man alone could not close the gates and, if it did happen, it was not on instructions," he said.

The incident allegedly took place on January 9.

Meanwhile a spokesman for SWANEC has confirmed to newsmen that the sluices on the Angolan side of the hydro plant had been opened. He declined, however, to elaborate.

Mr Migeotte who allegedly flew a helicopter across the border and closed the sluice gates, refused to comment on the matter when approached yesterday afternoon.

DELICATE

Political observers said yesterday the Ruacana scheme was a very delicate issue and, if the incident had taken place, it could further damage South Africa's already delicate relations with the Angolan MPLA administration.

The MPLA has resolutely refused to close the gates with the result that the millions of litres of life giving water which should be diverted to the extremely arid Namibia are lost — most of it spilling into the Atlantic Ocean at the mouth of the Cunene.

Namibia is able only to operate the Ruacana plant at full capacity for about six months out of each year, during the rain the Cunene is in full flow.

During these periods, Ruacana is able to supply all or most of Namibia's power needs. — Sapa.

spent on domestic consumption, R0,3 million is withdrawn
to bring about a R1 million initial increase, it will be
necessary to reduce taxes by R1,43 million. This is a
deficit financed method of closing the deflationary gap.
The government can increase G & T by the same amount
to remove the deflationary gap. This will not result in
a deficit. If increase G & T by R1 million, there will
be a nett increase of R0,3 million if only R0,7 million
would have been spent on domestic consumption and
R0,3 million on imports or saved. Increase in balanced budget
policy is equal to the amount that would have
been withdrawn from the circular flow had the
income remained in private hands. If the marginal
propensity to spend tax money is higher

circular flow had it remained in private hands.

7/10.

C.T. 9/4/80.

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'Thousands of experts' decided on Koeberg

Science Reporter

THE authorities would have placed the Koeberg nuclear power station on the same site, even after what had happened at Three Mile Island, a consulting engineer and member of the nuclear safety advisory panel told a lunchtime seminar at the University of Cape Town yesterday.

Mr H B Malan, speaking on the impact of Koeberg on development in the Western Cape, said this was because "thousands of experts" had discussed the matter in full over a number of years and had taken all possibilities into account.

Koeberg was "the greatest advent in the Cape since Van Riebeeck", yet many Capetonians opposed it. When it came on stream it would provide electricity at Johannesburg rates to users in the Cape who at present paid 66 percent more for their electrical power.

The Western Cape had a potential for industrial growth that had not been realized. This was because Cape Town people had more interest in preserving their environment than in providing for future needs. What few people realized was that nuclear power was the cleanest and least polluting power source available.

Asked from the floor what provision had been made to monitor infant deaths and genetic defects such as those allegedly found recently at Harrisburg, Mr Malan denied news reports of these findings and said Three Mile Island had been "blown up out of all proportion".

Dr K F Bennett, of the UCT Energy Research Unit, told the symposium that the main sources of energy in South Africa were coal and oil. Of the two, coal was the major source and nuclear power could only be a supplement. Alternative forms of energy such as hydro, solar, wave, tidal, wind and geothermal were being studied and developed but there was no substitute for coal until at least the end of the century.

It was possible to reduce energy needs by conservation and possibly decentralization. People did not save energy, they saved money, and energy savings could only be enforced by a change in price structure, Dr Bennett said.

The seminar, arranged by the Science Students' Council and open to the public, will continue each lunchtime in the Leslie Building until Friday. Speakers will talk on reactor safety and the economics of nuclear power today.

Tomorrow, the health, thermal and insurance effects will be examined and on Friday Professor R Fuggle of the School of Environmental Studies will chair a panel discussion.

'Mutants' question nuclear safety adviser

DEFORMED "mutants" carrying anti-Koeberg slogans on placards invaded the UCT science students symposium on nuclear power yesterday and engaged one of the speakers in a cross-talk at question time.

"Have you hugged a mutant today," asked one placard. Another pointed out that the sun didn't cost R2 000m, a reference to the estimated final cost of Koeberg while a third described Koeberg as "a bomb disguised as a power station".

The demonstrators questioned a member of the nuclear safety advisory panel, Mr H B Malan, on arrangements made for monitoring of the infant death rate and genetic changes in the Western Cape after the reactors are activated in two years time. He told them that "the whole area will be monitored continously by the Atomic Energy Board.

Asked to name a geneticist on the monitoring panel, Mr Malan said that the Department of Public Health had a representative on the "safety committee". "Better people than you or I have decided that there will be no environmental damage," he told questioners.

betref - 'n onderdeel van die ontwikkelingstrategie wat gevolg behoort te word. Aldus sou 'n bykomende bydrae tot verhoging van die basiese kapasiteitsbelading van die plaaslike vervaardigingsektor verseker kon word, met positiewe gevolge vir eenheidskoste van produksie, waardeur die ekonomiese bereik van plaaslike vervaardiging afstandsgewys vergroot sou word.

In sommige teoretiese betoë oor ruimtelike ontwikkelingsstrategieë, word die doelmatigheid betwyfel van groot kapitaalbelegging in 'n streeksverwantskap sonder onderskraging van aanvullende maatreëls wat spesifiek gerig is op ontwikkeling d.w.s. vergroting en diversifisering van die omgrensende mark, meer bepaald die mark vir verbruiksgoedere en -

Escom to raise electricity tariffs

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C.T. 9/4/80

JOHANNESBURG. — The Electricity Supply Commission (Escom) yesterday announced an increase in electricity tariffs averaging 7,26 percent with effect from July 1, and said that yearly increases could be expected till 1984.

The chairman of Escom, Mr Johannes H Smith, said in a statement that Escom had considered not applying any tariff increases this year. However, rising costs were such that if tariff increases had been postponed further it would have meant an increase next year of more than 10 percent. This was "obviously unacceptable", said Mr Smith.

Escom expected to receive R60 million from the higher tariffs in the last six months of this year, but even so there would be a deficit for the calendar year which was expected to wipe out the R80 million surplus which it had at the start of the year.

Although the countrywide average increase will be 7,26 percent, the figures for different areas vary from 8,17 percent for the Rand and Free State to 5,26 percent for Natal.

Other percentage increases: **Western Cape** 7,14 percent; Border 7,5 percent; Orange River and Eastern Cape 6,9 percent; Eastern Transvaal 6,67 percent and **Northern Cape** 5,88 percent.

Mr Smith said that as the new 1980 tariffs would apply for only six months, the average sales price for the year would be only about five percent higher than the 1979 figure. — Sapa

W Cape pays most for power

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Argus 9/4/80.

THE Western Cape's electricity will still be the most expensive in South Africa, an Escom official said today.

And even though the Cape Town municipal rates — which rose 6,3 percent on March 1 — will not go up again this year, the rest of the Western Cape's rates will rise by 7,14 percent on July 1.

Those most affected in the Western Cape will be domestic users in the northern suburbs and other municipalities, and agricultural and industrial users.

The countrywide increase of 7,26 percent breaks down as follows: Rand and Free State, 8,17 percent; Border, 7,5 percent; Western Cape 7,14 percent; Orange River and Eastern Cape, 6,9 percent; Eastern Transvaal 6,67 percent and Northern Cape 5,88 percent.

NOT HIGHEST

Although the increase in the Cape surcharge of 7,14 is not the highest, Cape rates are already higher than other regions.

A spokesman for Escom's Western Cape office, said the rates were higher to cover the cost of transmitting power from upcountry sources.

Mr Brian McLeod, secretary of the Cape Town Chamber of Commerce, referred to a resolution taken by the congress of chambers of commerce in the Western Cape at the end of last year and said he believed the reasons for the increases had not been made clear.

The Cape Town City Electrical Engineer, Mr D C Palser, said his department had anticipated an increase — although not as much as that announced, and this was built into the 6,3 percent increase which started in March.

Academic: total cost of Koeberg not known

CAPE TOWN — Nuclear power was uneconomical and the full costs of building and operating the Koeberg nuclear plant had never been made public, an economist told the Science Students' Council symposium at the University of Cape Town yesterday.

Mr Bill Robb, a lecturer in the department of economics and chairman of Koeberg Alert — an organisation opposed to the siting of Koeberg close to Cape Town — said the capital costs of nuclear power were "substantially higher" than for coal. It was hoped to gain on the operating costs but recent experience had indicated even these may increase drastically.

He predicted the final capital cost of Koeberg, first estimated at R500 million, would exceed R2 500 million.

The nuclear industry drew funds and expertise away from research on safer and more economic energy sources. Overseas researchers had found that in many cases new findings on alternative sources of energy were "purposefully suppressed."

Rising costs, better information on the dangers of radiation, increasing opposition both within and outside the administration and the poor strategy of allowing Koeberg to be dependent on foreign fuel supplies and reprocessing made it doubtful the station would ever be economically operated — if it ever got as far as actually generating power.

There was still the ultimate accident which Escom claimed could not happen. — DDC.

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F. SPECIAL PROBLEMS (1973)

1. TRANSPORTATION -

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CT 10/4/80

Full costs of Koeberg 'not made public'

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Staff Reporter

NUCLEAR POWER was definitely uneconomic and the full costs of building and operating Koeberg had never been made public, an economist told the Science Students' Council symposium at the University of Cape Town yesterday.

Mr Bill Robb, a lecturer in the department of economics and chairman of Koeberg Alert — an organization opposed to the siting of Koeberg close to Cape Town — said that the capital costs of nuclear power were "substantially higher" than for coal. It was hoped to gain on the operating costs but recent experience had indicated that even these may increase drastically.

He predicted that the final capital cost of Koeberg, first estimated at R500 m, would exceed R2 500 m.

The nuclear industry drew funds and expertise away from research on safer and more economic energy sources. Overseas researchers had found that in many cases new findings on alternative sources of energy were "purposefully suppressed".

Rising costs, better information on the dangers of radiation, increasing opposition both within and outside the administration, and the poor strategy of allowing Koeberg to be dependant on foreign fuel supplies and reprocessing made it doubtful that the station would ever be economically operated — if it ever got as far as actually generating power.

Other hidden expenses included social costs, the expense of waste storage which could require glass, steel and gold shielding to make it safe, and increasing restriction of freedom due to security requirements.

There was still the ultimate accident which Escom claimed could not happen. "I dispute the official figure of 6 000 deaths. By the end of the century the population in the immediate area, including Atlantis, will reach more than 2 m," Mr Robb said.

Dr C M Bartle, a senior lecturer in the department of physics, told the symposium the standards of nuclear safety were continually being raised and further safeguards were being developed. The finest safety measures would be incorporated into Koeberg.

He agreed with a questioner that no emergency core cooling system had ever been tested to destruction to find how it would behave in extreme emergencies.

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Financial Mail

FM 11/4/80 ~~183~~ 55

ALCOHOL FUELS

One for the road

Last Friday, Environment and Energy Minister F W de Klerk conferred with potential producers to lay down guidelines for the development of an alternative (specifically alcohol) fuel industry.

It was undoubtedly the most significant SA development in fuel supply since the 1951 decision to build Sasol 1.

The government has now decided to run with alcohols, making it a real and practical possibility that the country could be completely independent of imported oil by the end of the century — a mere 20 years ahead. It has (tentatively) made the choice between methanol and ethanol — and opted for methanol — and has decided to give private enterprise its head in this highly strategic field.

De Klerk told the would-be and actual alcohol producers, which included such technological leaders as AECI and Sentrachem, as well as Anglovaal and General Mining, that he was open to proposals.

The Minister has given interested parties 12 to 18 months to submit their schemes for approval. The government's Energy Policy Committee will review all applications and will make a ruling on what taxes and duties will be applicable.

Alcohol fuels will have uniform excise and other duties as presently applied to Sasol, based on the energy content of the fuels. In practice, methanol will enjoy an advantage of roughly 4c a litre of petroleum equivalent over fuel derived from imported crude oil.

Additionally, the government is to give a further duty reduction to licensed producers for contributions to the replacement of diesel fuel only. This will be related to production, storage and distribution costs and demand factors.

The aim, says De Klerk, "shall be the lowest level of incentives which will result in an appreciable production and use of the alternative for diesel fuel."

And he warns: "The government will accept no responsibility for the profitability of any undertaking."

It is now clear that, as forecast by Cape Town University's Energy Research Institute, ERI, (*FM* March 14) methanol is destined to play a major role in SA's future energy equation. De Klerk is talking of alcohol fuels providing 15% to 20% of liquid fuel requirements, but the ERI's Professor Richard Dutkiewicz believes it could be as much as 50%.

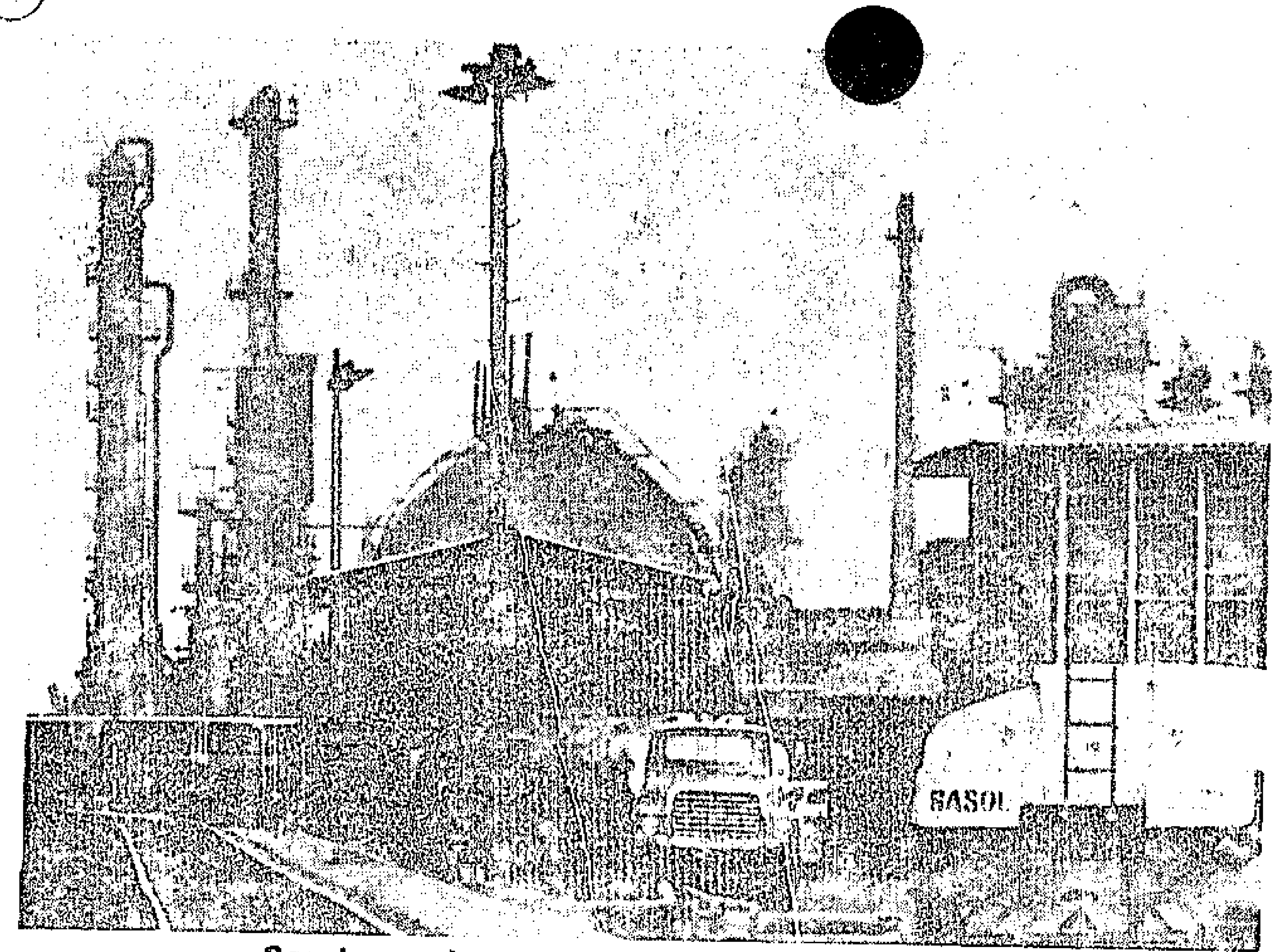
Because of the diesel/petrol imbalance, with the consequent shortage of diesel, the quantity of crude oil which has to be imported is determined by the demand for diesel fuel. Imports can thus only be lowered, says De Klerk, to the extent that alternative fuels can replace or augment diesel fuel.

"Steps by the government, and possible incentives should, therefore, in the first instance, be aimed at encouraging and assisting the private sector to augment and replace diesel fuel," he says.

"Comprehensive investigations have left the impression that methanol, derived from coal, emerges as a stronger possible alternative fuel to ethanol derived from agricultural products."

Reasons given for the thumbs-down to ethanol are the price instability of fertilisers, weed-killers, agricultural machinery and the like, the high energy input in ethanol production, and the possible con-

AECI's Denys Marvin, Shell's Ken Geeling, VW's Peter Searle . . . three-way co-operation on the road ahead



Sasol . . . private enterprise may well enter the field

flict in demands between food and fuel production.

Excessive dependence on ethanol could not be permitted. But the Minister is prepared to allow some production of ethanol from agricultural products and to offer the same assistance as to methanol because of the conviction that the percentage of the total provided by ethanol will be relatively small.

Special consideration is also being given to farmers who might want to set up small fuel plants.

It is clear that the Sasol route is no longer seen as the only way to fuel self-sufficiency. De Klerk says a theoretically justifiable policy decision merely to build further Sasol plants, or others based on variations of the technology, would be wrong.

Significantly, too, he opens the door to the possibility of private enterprise developing Sasol-type or other synfuel operations.

Industry's response to the government's policy statement has been prompt. First off the mark was AECI, which has on the drawing board a R450m, 800 000 t/year methanol plant which could be in production by 1984.

AECI has also intensified its research programme, on which R500 000 has already been spent, to perfect the use of methanol as fuel. In the programme, run in conjunction with Shell and Volkswagen, VW Golf cars converted to methanol have been tested and AECI plans to convert its truck fleet to methanol as well. Four existing vehicles have been converted to run on a 15% methanol/petrol blend.

The company is concentrating its efforts on the (diesel-powered) truck application, which offers the best hope for solving the most crucial problem in the national fuel equation: the diesel shortage.

The scenario, already spelt out by the ERI in its document *Energy 1980*, sees the conversion of diesel trucks to methanol as the first step towards fuel self-sufficiency by the year 2000. Initially, methanol would be used either in duel fuel configurations with diesel (methanol does not mix easily with diesel, and has to be injected separately), or in 100% alcohol engines, and later would be introduced in private vehicles.

Pure methanol cannot be burned in unmodified diesel engines as it has significantly different combustion characteristics from those of dieseline. But it can be used in diesel engines relatively inexpensively modified, mainly by fitting spark plugs.

Perhaps it would be more correct to call this sort of engine a "high-compression, heavy-duty, internal combustion methanol engine."

It is to be hoped that the Industrial Development Corporation, which is pushing ahead with the Atlantis Diesel Engines factory in the Cape, is taking heed of the methanol developments. At this stage, it might make more sense for ADE to produce methanol engines than diesel engines.

The advantage of this approach is that the huge capital investment in the existing national vehicle fleet, oil refineries and distribution facilities is not wasted. Cars continue to run on petrol until the end of their normal lives, and Sasol petrol will continue to be the preferred fuel for certain applications.

Moreover, it does not become necessary immediately to establish a national network of methanol distribution outlets. Main users would be fleet owners, who normally fill their tanks at their own facilities.

With Sasols 2 and 3 coming on stream between now and 1985, dependence on petroleum could be reduced to 64% by 1985, 30% by 1990 and zero by 2000.

According to the ERI, production costs (in a small plant with a capacity of 2 500 tons a day) work out at 28c per litre for petrol with oil at $35 a barrel, 45,5c for Sasol synfuel, 43,1c for ethanol, and 32,7c for methanol.

However, though methanol contains less energy per litre than petrol, engines run more efficiently on it, and the efficiency of energy conversion from coal to methanol is higher than from coal to Sasol petrol. Thus the methanol coal-to-wheels route gives 43% more kilometres per unit mass of coal than the Sasol route.

Taking this into account, production costs (again based on a small plant) break even with imported crude oil at a price of $34 a barrel. In a big plant, break-even point would be lower. Current Opec prices are in the $25 to $29 range, with spot prices around $35.

But it must be pointed out that economies of scale can bring these production costs down significantly for both Sasol synfuel and methanol (though not ethanol). Sasol's cost is about half the quoted figure.

Wrong horse

The government's decision to opt for methanol has undoubtedly been an embarrassment to Sentrachem, which has been backing the ethanol horse. In an attempt to recover its position, Sentrachem issued an announcement to coincide with AECI's last week, declaring that it is to set up a new ammonia-from-coal complex which "paves the way" for methanol manufacture.

But it is clear that AECI is ahead of the game.

Another contender is Anglovaal, which has been examining the feasibility of methanol production (from its substantial coal deposit in the Witbank area) for 2½ years, and has been sponsoring research at the ERI for a year.

Anglovaal can't export coal because it has no capacity on the Richards Bay line, and the price-controlled local market doesn't exactly offer scintillating profit potential. There's no word yet on Anglovaal's precise intentions, but a methanol plant would have to be at least as big as AECI's to make it economic.

Anglovaal has three methanol-fuelled trucks under test, it's taken out patents, and has a working understanding with Caltex which may soon be turned into an agreement. It's not hard to put two and two together and conclude that the mining and industrial conglomerate may soon be in methanol production.

Another alternative fuel project has been mooted by General Mining, which is contemplating an oil-from-coal project on the Springbok Flats based on direct hydrogenation — the major alternative to the Sasol process.

The developments are significant for a number of reasons. For the first time, alternative fuels are to be produced in SA on a fully commercial basis. None of these interested companies will go into schemes which offer inadequate returns on investment.

Central to AECI's plans will be the possibility of exporting methanol for use in existing power stations which will have to be converted from oil. There have already been preliminary discussions with potential foreign buyers.

This would take up the slack in local demand during the early stages, and possibly offer better prices.

The involvement of oil companies is noteworthy. Caltex is believed to have plans for an extensive distribution network. Shell has supplied methanol storage facilities and dispensing equipment at AECI's Modderfontein factory and is supplying the petroleum products needed.

Its rationale for participation is to obtain first-hand practical experience in the handling of methanol as a fuel on a commercial scale.

The programme will be another feather in the cap for SA, the country which pioneered oil-from-coal technology, and which is now demonstrating itself to be possibly the only country in the world which has a practical policy to deal with the Opec threat.

The US, for one, could take a few lessons.

ESCOM TARIFFS

Electric shock

The pain at the latest round of electricity tariff increases is considerable, especially for Johannesburgers, who suffer under the additional impact of municipal tariff increases.

But, in assessing the significance of the announcements by Escom and the Johannesburg City Council, two vital factors should not be ignored. Firstly, the general level of increases is still meaningfully below the inflation rate. So long as high inflation rates continue, South Africans will have to absorb the idea of measuring their own earnings and cost increases against the current rate.

Any cost that rises, on an annual basis, at a significantly lower rate is actually decreasing in real (constant money) terms. This is the general case with electricity tariffs.

Johannesburg has known for a long time that it would eventually have to pay electricity tariffs approaching the Escom basis, so the latest round of increases, taken as a whole, should occasion no surprise. It's fair to query, though, whether the decision to subsidise householders so heavily at the expense of commerce and industry was taken on the basis of cold-blooded economic reasoning or as a political gesture. (Domestic consumers in Johannesburg will have to pay 12.72% more for power as the result of the two tariff increases, while industrial and commercial users will pay 22.62% more.)

The West should by now have learned the long-term folly of efforts to shelter consumers from energy cost increases through the mechanism of subsidies. These simply put off the evil day when economies have to be made in the use of scarce resources.

Escom's average rate of increase is 7.26%, but regional increases will vary between 5.26% for Natal and 8.17% for the Rand and OFS region.

It also seems from the wording of Escom's announcement that SA (outside Johannesburg) has got off comparatively lightly this time round. This results from recent improvements in capital markets which have lessened the contribution to the capital development fund required to be made from current earnings. The implication is clear that any return to the grim capital markets of 1976-77 would necessitate more severe tariff rises.

Gas could have caused sinking

55 RDM 12/4/80

DURBAN. — A gas build-up in the holds is thought to have caused the explosion which ripped apart the sunken Liberian oil tanker, Albahaa B, off the Tanzanian coast in the early hours of April 3, initial investigations being conducted by the Salvage Association in Durban have indicated.

The investigations into the cause of the supertanker's sinking continued yesterday, with Lloyd's Register of Shipping holding an in camera inquiry on behalf of the Liberian Bureau of Maritime Affairs.

The Indian captain of the Albahaa B spent four hours in consultation with a Salvage Association surveyor, Mr Ian Lloyd, on Thursday.

"We haven't come to any definite decision as to the cause of the sinking, but the explosion occurred during tank cleaning operations, and you do tend to get a buildup of gases which could be ignited by static electricity," Mr Lloyd said.

The nine-year-old tanker was 320 nautical miles off Dar es Salaam at the time, and took less than three hours to sink after breaking in half.

The Liberian tanker, Olympic Action, picked up the survivors from life boats and spent several hours searching for the six crewmen who disappeared.

The 37 crewmen and a wife of one of the officers, were airlifted by helicopter to Louis Botha Airport on Wednesday and the crew have been staying at a beachfront hotel. They are expected to leave at the weekend when investigations are completed. — Sapa.

THE BIG N-REACTOR DOUBTS

Medical science has no real counter to hazard — doctor warns

MEDICAL SCIENCE is in the area of the 'big unknown' when it comes to the dangers of nuclear radiation, a doctor has warned.

And psychiatrists and psychologists agree that it is doubtful if better training and worker selection will ever eliminate the 'human error' factors in nuclear reactor accidents the doctor told the Nuclear Power seminar at the University of Cape Town this week.

'Furthermore,' said the doctor who may not be identified, 'we don't know if the combination of radiation with other environmental toxins will produce effects together more lethal than any single component acting alone.

'We don't know which people are especially at a high risk. We don't know how best to treat affected people or how to monitor genetic changes.

'All this doubt alone is reason enough to halt the nuclear programme without even considering numerous studies which link disease and death directly to reactors,' he said.

Toxic

Substantiating this last point, the doctor cited a Canadian Ministry of Health finding which showed that each radioactive atom is 10 million to 100-million times more toxic to developing embryos than a molecule of the most dangerous drugs such as thalidomide.

After the Three Mile Island (TMI) accident, he said, the infant mortality rate rose from an average of 17 a 1 000 to 311 a 1 000 — nearly doubled. The reasons for this were still being studied.

The recent Pennsylvania Department of Health study on the TMI accident showed that thyroid abnormalities in children rose five-fold in a six month period.

Findings in Colorado around the Rocky Flats processing plant where a leak occurred following a fire in 1969, showed that figures for cancer in men rose by 24 percent and women by 10 percent in an area of 150 000 people.

Bone cancer

Different fission by-products have different effects. A minute amount of plutonium 239 has been shown to cause lung and bone cancer.

'At this stage, no research has been able to show whether a minimum safe level for Pu 239 exists.'

'Nobel prize winner for biology, George Wald, stated that any dose of radiation is an overdose — in other words, even the routine emissions from Koeberg could be dangerous.

'Most radiobiologists agree that no minimum threshold for radiation exists at which no effects occur.'

In fact, it was the only point on which they did agree, the doctor said.

Why control board blocked Escom's last tariff increase

By KITT KATZIN

LAST October Escom applied for a restructuring of its tariff formula — but the Electricity Control Board said it would have been unfair on consumers.

The increase would have been considerably higher than the 8,17% increase announced this week.

It would have affected hundreds of thousands of householders on the Reef, the Eastern Transvaal, and the Free State.

The application was rejected after the control board, a statutory body which must endorse applications for tariff increases, said it believed the request to restructure tariff formulas would have met strong opposition from municipalities.

They, too, would have been compelled to pay more for Escom's power at source, before transmitting it to consumers, at a time when electricity tariffs had rocketed by more than 18% a year over the preceding three years.

The control board's thumbsdown came only six months after the Board of Trade and Industries claimed Escom made too much profit and lacked effective management and control methods.

The board found a major factor contributing to rising tariffs had been Escom's policy of greater self-financing of capital investments and the creation of a development fund.

It believed the commission's own capital should account for a relatively small percentage of total assets and the extent to which profits were used for financing should be reduced considerably.

This week Escom hit the headlines again when it announced an 8,17% rise in tariffs for the Reef and Free State, and slightly smaller increases for the rest of the country.

Escom's chairman, Mr Jan Smith, said the increases were the inevitable result of general cost jumps but said the rate of increase was still below the inflation rate.

The application has still to be considered by the control board at a meeting in Pretoria on Tuesday.

Although it seems certain Escom will run out winners this time, municipalities and other interested parties can lodge objections.

What Escom failed to mention was that the 8,17% increase does not include other hidden "built-in" additional increases due to the corporation's overall changing cost structure.

Sandton and Randburg, for example, which are totally dependent on Escom for their electricity, will have to contend with an extra increase of 5%, bringing the total electricity cost increase for their consumers to a staggering 13%.

But Escom argues that the changes in structure will benefit large users with high load factors (in other parts of the country) and that municipalities may not necessarily pass on the extra increases to consumers.

Further chilling news for consumers is that they can prepare for yet another possible rise in tariffs next year.

The corporation's 44 000 employees will probably demand higher wages if the July increases are not satisfactory.

In this event Escom, already suffering a critical shortage of technical staff, and faced with a R11 000-million expansion programme to double its output over the next 10 years, may be compelled to meet the wage demands. To do this, tariffs may again have to be increased.

Although Mr Smith said this week tariff increases would never exceed the inflation rate, informed sources doubt whether Escom could honour the pledge next year if it was forced to meet fresh wage demands.

In addition, Escom is under pressure to reduce the wage gap between its 18 000 White and 26 000 Black employees.

Despite these problems, Escom officials say they are producing 12 times as much electricity as in 1950, with only four times the number of staff.

But, they add, with South Africa ready to enter a boom, fresh economic pressures and priorities could bring about rapid changes in the overall energy supply setup.

The demand for power by the mining industry is expected to increase sharply over the next two years, well beyond present capacity projections.

Meanwhile, Escom is going ahead with its R32-million phase two project at its Megawatt Park headquarters in Sandton — which includes another two elaborate indoor "Babylonian" garden complexes for R100 000 — and is in the throes of constructing another four power stations costing R6 000-million.

● Last year Mr Smith, then Escom's general manager, accused the Board of Trade and Industries of damaging Escom's credibility and its ability to raise capital overseas.

This week Mr Smith said Escom had no objection to the appointment even of a parliamentary committee to probe its efficiency.

Insurance: Pooling Risks

Because of risks of losses of wealth from physical damage (such as from fire or flood or theft), people often insure. They *share* losses by spreading them over the group that bears the losses in the form of sure, regular, small fees, called the insurance premium. These accumulated premiums are supposed to be large enough to pay sufferers of any insured, actual losses. In general, insurance trades each person's small chance of a large loss for the certainty of a small loss—the insurance premium.

Insurance also may induce people to change the probability of the contingent event. Each insured person is often required to take special precautions as a condition of getting insurance. Otherwise, precautionary incentives might be reduced with insurance; for without insurance, we may devote more resources and care and anxiety to protection than with it. So insurance may either decrease or increase total social accidental losses. Yet even if total losses are greater with insurance than without (as they may well be), the avoidance of precautionary resource-use and the reduction of anxiety may exceed the increase in accident losses.

Some accidental losses are not insurable because they are not accidental enough. Insurance against bad business or loss of customers would entice a retailer to be less productive while relying on the insurance to indemnify him for his increased shirking. He could too easily and covertly "influence the chances of the loss." This "moral" hazard diminishes the feasibility of insurance. Claims for indemnity against losses would exceed the insurance premiums an insurance company could get from voluntary insurees.

Risk Allocation by Ownership Allocation

Though many hazards are not formally insurable, other methods are used to escape the risks. You can't buy insurance against your oilwell going dry, or *not* finding gold on your land, or having other people's tastes and demands shift away from your services, or divorce, or dull children, or marital infidelity. You can't *buy insurance* against these risks, yet you can *insure* for some of these events. For example, the risk of an oilwell's unexpectedly drying up can be transferred to someone else. Just sell the well to him. You will get the present value of that oil that other people *expect* is there. If the oil well does dry up, the buyer bears the loss, not you; if it lasts longer he gets the profit.

By choosing not to own certain goods, you avoid the hazards of changing values (profits and losses) of those goods. With a private-property system, risks can be transferred to the most willing, optimistic people—the new owners. People can exchange ownership entitlements to goods and the risks to bear on them on a selective, discretionary, personally preferred basis. By renting a house monthly instead of owning one, you avoid having so much of your wealth depend on the future service potential of that house. By renting goods, a person can select his ownership of goods and risk-bearing more independently of his consumption patterns.

C.T. 15/4/80 (55)

SA at world energy talks

JOHANNESBURG. — About 24 South African delegates will attend the 11th World Energy Conference in Munich from September 8 to 12.

Representatives from Escom headed by the chairman, Mr J H Smith, the CSIR, Sasol, the Fuel Research Institute and the Department of Minerals and Energy will be among the South Africans.

NM 15/4/80

Corporation hit by huge staff crisis

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Municipal Reporter

A CRITICAL staff shortage — which will probably worsen — is threatening the efficiency and safety standards of Durban's electricity department.

In a strongly-worded plea to the Durban City Council's Management Committee for better wages and job conditions, the City Electrical Engineer, Mr Denis Fraser, said his department would need to recruit 123 professional and semi-professional staff over the next 10 years.

His warning comes only weeks after the City Engineer, Mr Don Macleod, warned that his department faced a crippling staff shortage which could cost ratepayers R5 million a year because planning was suffering.

Mr Macleod, too, blamed the council's pay structure for high turnover.

Recruitment of sufficient men in the electrical engineering department would be impossible, Mr Fraser said, unless the department could compete against the private sector.

At present, there were 46 professional engineers to fill 60 posts, and 53 semi-professional staff for 71 posts.

In the professional ranks there would be 21 retirements over the next 10 years. 21 new posts would have to be created to cope with a 3 percent annual growth rate, and Mr Fraser estimated there would be six resignations — a total of 62 vacancies by 1990.

The semi-professional staff situation was almost the same, with 18 vacancies, nine retirements, 24 new posts and an estimated 10 resignations, adding up to 61 recruits needed.

Moreover, the department faced 'an almost complete inability to recruit technical and engineering assistants, from whose ranks future section and assistant section engineer appointments are usually made'.

Potential

With eight of the department's senior engineering management staff due to retire over the next 10 years, only a few existing staff 'presently exhibit definite potential ability to fill these posts'.

Planning for the next decade, when electricity consumption was expected to double, was being seriously hampered, Mr Fraser said.

There was an 'excessive number of vacancies' in the distribution planning branch, and all technical and engineering assistant posts in the district sections of the works branch were vacant.

About 60 percent of the artisans worked on maintenance, and the shortage could have dangerous consequences, particularly if there were an accident involving death or injury.

The situation had been reached, he said, where the City Council had to act. It was likely to deteriorate still further if the economy improved, and there was a good chance that the department would not be able to function properly.

R360m Escom order for British group

RDM 15/4/80

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Financial Reporter

LONDON. — Escom has awarded a R360-million (over £200-million) contract to the British GEC group for six 600 megawatt turbine generators.

This was announced in London by Mr Robert Davidson, the managing director of GEC Turbine Generators.

A statement released in Johanesburg said: "GEC South Africa is pleased to announce that the Electricity Supply Commission has given a letter of intent to GEC Engineering (Pty) for the supply of six 600 MW turbine generator sets complete with feed-heating and condensing plant for a new power station to be known as Tutuka.

"The contract is one of the largest single orders ever to have been placed for turbine-generator plant and will be in excess of R360-million.

"GEC Engineering will sub-let the contract to GEC Turbine Generators in the UK and the manufacture of the equipment, which will extend over six years, will provide valuable work for GEC plants at Rugby, Manchester and Stafford.

"As on the Duvha contract, there will be considerable local content to this order and work will be placed not only with local GEC companies but with associated companies such as Barlow Heavy Engineering in Benoni.

"The Tutuka Power Station will be located 150 km south-east of Johannesburg and will utilise coal from the Standerton area.

"The first unit is scheduled to enter commercial operation in early 1985 and the remaining units at nine-month intervals.

"The turbine generating units will be duplicates of the six 600 MW units which GEC are supplying to Escom for the Duvha Power Station.

"The first of these units has recently been commissioned and has already carried full load.

"The execution of the Duvha contract was obviously an important factor in GEC's winning of this important contract against strong international competition.

"Finance for the project is being arranged by Hill Samuel."

Govt won't equalise petrol prices

(55) RDM 15/4/80

CAPE TOWN. — The Government has decided not to equalise petrol prices in South Africa and that Escom will be allowed to continue its system of surcharges and discounts on a limited basis.

This was announced in a statement yesterday by the Minister of Industries, Commerce and of Consumer Affairs, Dr Schalk van der Merwe.

The Minister issued the statement to spell out the Government's decision's regarding the investigations, conducted by the Board of Trade and Industries, into the equalisation of the petrol price and the tariff policy and cost structure regarding the supply of electricity.

The board's report, tabled in Parliament last year, stated that the Railways' administration had made substantial profits from oil pipelines and was implementing its policy switch to "cost of service" rather than "value of service" very gradually regarding pipelines.

The Government had referred the report to the SAR for its information and comments, the Minister said.

"Other than a review by the appropriate authorities of Railways' pipeline tariffs, with a view to greater measure of cost orientation, the board has found and recommended that no action towards further geographical uniformity in the prices of petroleum products was necessary or desirable in the national interest."

The Government agreed in broad outline with the board's report regarding tariff policy and cost structure of Escom's electricity supply, but had reservations about the proposed substitution for the redemption funds, capital reserve funds and capital development

R760m orders for Tutuka plant

STAR 15/4/80

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Escom announces that it is to place orders for six 600Mw turbine generators and for the associated boilers for the Tutuka power station.

The contract value of the orders will be more than R760m.

The announcement said that, subject to current negotiations being successfully completed, the turbine order would go to GEC Turbine Generators and the boiler order to L and C Steinmeuller Africa (Pty).

The turbine order will be worth more than R360m and the boiler order more than R400m. A substantial part of the boiler money is to be spent in South Africa.

The Tutuka power station, one of several large coal-fired power stations to be erected by Escom during this decade, is to be constructed north of Standerton, Transvaal, on the new Denmark coal field.

The first turbine generator and boiler is scheduled for commercial operation there early in 1985. The remaining units are planned to come in at intervals of nine months.

The order was won against competition from Man of West Germany and French manufacturers at a time of low international and domestic demand for turbine generating plants.

GEC Engineering will sublet the contract to GEC Turbine Generators in Britain and the manufacture of the equipment, which will extend over six years, will provide valuable work for GEC plants at Rugby, Manchester and Stafford. The turbine generating units will be duplicates of the six 600 mw units which GEC is supplying to Escom for the Duvha power station.

As on the Duvha contract there will be a considerable local content, and work will be placed not only with local GEC companies but with associated companies such as Barlow Heavy Engineering in Benoni.

Contract means jobs for 8500

The Star Bureau

LONDON — About 8 500 GEC workers would have lost their jobs but for the South African contract, said Mr R J Davidson, managing director of GEC Turbine Generators.

Work on the generator order would employ about 1 000 workers for the next six years.

With the new order, GEC will have won 80 percent of South African contracts for turbine generators since 1975. The company said this was "a considerable achievement when it is recognised that there are 10 world competitors all after this business."

Finance for the project is being arranged exclusively in the United Kingdom by Hill Samuel, the merchant bankers, and backed by the Export Credit Guarantee Department.

Depressed British demand for generators in recent years has forced GEC to look abroad for the bulk of its business.

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Plea to Escom to lower rates

STAR 15/4/80

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Pretoria Bureau

The Transvaal Municipal Association today issued a strong plea to Escom to introduce a special reduced electricity tariff for municipalities for the benefit of householders.

The plea was made at a hearing of the Electricity Control Board which met to hear Escom's application for a revised tariff structure.

This new structure will apply to the Witwatersrand, Free State and Eastern Transvaal.

It is designed to benefit consumers who make more economic use of electricity.

The new structure is expected to take effect on July 1, and is in addition to the average 8,2 percent increase which comes into effect on the same day.

DEMANDS

The new structure could hit many municipalities which have high peak power demands.

These high peak demands mean Escom has to provide expensive power plant which may lie idle for much of the time.

Householders traditionally use more electricity in winter, leaving surplus, unused plant in summer.

But Mr Max Clarke, Town Electrical Engineer of Randburg, representing the TMA, told the board that summer lulls in power demand enabled Escom to overhaul plant, and were essential to Escom.

He suggested that municipalities receive a discount to relieve the burden on householders.

The TMA has suggested a discount of between five and 10 percent for municipalities.

boat (which is the same as total rent since we assume the boat is costless to operate). He charges a fee of 2.8 fish per person for the right to be on board. With an average catch of 6.8 out of which each pays 2.8 and keeps four, only five persons will want to be on board. Now the 14-fish rent (social gain) goes to the government and is distributed however the government sees fit. It would appear that the only difference between this and the private-property control system is in who gets the 14-fish gain. The private owners, seeking personal profits, also achieved the maximum social output.

However, if our government agent takes life easier and doesn't charge the right fee, what will he lose? The loss is imposed on the public as a whole. But who in the public or government has an incentive as strong as a private owner to detect opportunism or shirking of prescribed duty? In contrast to the private owner, a political authority suffers less loss of potential personal wealth in being less attentive to nonownable gains. And if there is uncertainty about the potential catch on board, he would permit extra people on board if that made him more popular and enhanced his hold on political office. Or to make his personal life easier, the authority might allow too few on board because that permits shorter working hours for him (like closing on holidays and earlier in the afternoons) and not operating the boat as fully as would maximize profits. Soon we shall see how *incentives* and *uncertainty* about future potential production are critical influences on methods for coordinating and controlling joint production activity.

But when has a government agency been supposed to maximize *profits?* It is usually, or always, told to "maximize public welfare and benefit." (The agency might be a nonprofit corporation for hospitals, colleges, or the post office.) How is "maximize public welfare" interpreted? In our example, maximize the number on board? Or maximize the catch on the boat? Or the social total? Maximizing the catch *on board* would, as we have seen, result in marginal products on board that are less than on shore, thereby reducing the social total—a *social* waste.

The ambiguous goal "maximum public benefit and welfare" is sturdy and widespread, because its ambiguity permits the authorities wide latitude of interpretation and hence of measuring performance. It is commonly mandated for government authorities who control access to the television and radio electromagnetic spectrum, air space for airplanes, postal service, highways, national and state parks and beaches, airports, harbors, schools; it is even applied to federal forests, offshore oil, and federal land. Zoning commissions that control the use of land (such as how congested it can be) are similarly instructed to maximize public usefulness. But hardly any government authority is instructed to maximize profits: not the post office, or the water, electricity, gas, or bus company. All are instructed to "serve the public," or "break even"—with consequences that are now more explainable.

Imperfect Predictability of Performance: Risk Bearing

For two reasons the actual productivity of any group cannot be predicted perfectly. First, natural

Anglovaal plan to join in methanol production

STAR 17/4/80 183 55 280

By Jaap Boekkooi

Another South African mining giant, Anglovaal, is planning to enter the motor fuel-from-coal field on a massive scale with a plant near Witbank.

Anglovaal announced today it had reached a working agreement with Caltex Oil to jointly investigate the production and distribution of methanol.

It would have to produce about 800 000 tons of methanol a year to make the project economically viable.

Recently AECI announced plans to produce 800 000 tons of methanol from coal as well, and demonstrated methanol-driven cars and a bus at the Rand Show.

Combined production of the two fuel-from-coal giants could thus reach 1 600 000 tons a year — equal to the total output of liquid fuel by Sasol 1 and Sasol 2.

Ironically, the stage could be reached where South Africa, the only country in the world suffering an official oil boycott, could reach overproduction of its own substitute motor fuels.

Anglovaal, which has been sponsoring the University of Cape Town Energy Research Institute programme to run diesel engines on a pure methanol, or methanol/diesel dual fuel systems, has now taken out provisional patents on several aspects of these conversions.

Here's cheers!

NM 17/4/80

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South Africa's motorists will be able to travel on an alcohol mixture

Parliamentary Correspondent

CAPE TOWN—A BLEND of petrol and alcohol is to be marketed in South Africa, the Minister of Commerce, Dr Schalk van der Merwe, said yesterday.

The sales of the new blend would take place through premium-grade petrol pumps at service stations, the minister said, replying to a question tabled by Mr Nigel Wood (NRP, Berea).

'The mixture would not be marketed on a country-wide basis initially, but only in a limited geographical area, namely the Reef,' Dr van der Merwe said.

Arrangements for the marketing of the new blend had progressed so far that it was expected it would be marketed on the Reef by September.

Mr Wood later welcomed the announcement because it would lead to greater self-sufficiency in liquid fuels for South Africa. It was most important that diesel/alcohol blends were perfected and he hoped a high priority would be place on this.

'I believe that the Republic is well placed to become almost totally independent of imported crude oil and in fact this should be our ultimate aim. Our second major goal should be to investigate all technologies fully so that all cost-reducing factors can be incorporated with a view to paying the least possible amount for our fuels.'

Anglovaal, Caltex in coal-methanol study

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RDM 18/4/80

ANGLOVAAL has agreed with Caltex Oil to investigate jointly the production and distribution of methanol from coal.

It says: "For some time now Anglovaal has been sponsoring the University of Cape Town's Energy Research Institute programme, part of which involves the conversion of Perkins and Mercedes diesel engines to run on methanol/diesel dual-fuel systems and, more recently, pure methanol.

"After undergoing bench tests, the converted engines have now been put into trucks supplied by Unity Longhauls (Pty) for road testing under normal operating conditions.

"The research has resulted in provisional patents being taken out by Anglovaal on several aspects of diesel engine conversion.

"The agreement with Caltex is a logical step in Anglovaal's programme to investigate the economical production of methanol from the group's coal deposits in the Witbank area."

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DEPARTMENT OF INDUSTRIES

No. R. 797 18 April 1980

PETROLEUM PRODUCTS ACT, 1977
(ACT 120 OF 1977)

REGULATIONS RELATING TO THE PURCHASE, SALE, SUPPLY, ACQUISITION, POSSESSION, DISPOSAL, STORAGE, TRANSPORTATION, RECOVERY AND RE-REFINEMENT OF USED MINERAL OIL

I, Schalk Willem van der Merwe, Minister of Industries and of Commerce and Consumer Affairs, hereby, in terms of section 2 (1) of the Petroleum Products Act, 1977 (Act 120 of 1977), make the regulations set out in the Schedule hereto.

S. W. VAN DER MERWE, Minister of Industries and of Commerce and Consumer Affairs.

SCHEDULE

Definitions

1. In these regulations, unless the context otherwise indicates—

"Act" means the Petroleum Products Act, 1977 (Act 120 of 1977);

"additive" means a chemical or chemical compound which may be added to new oil to improve its performance characteristics;

"bulk consumer" means a local authority as contemplated in section 84 (1) (f) (1) of the Republic of South Africa Constitution Act, 1961 (Act 62 of 1961), a bona fide farmer, a cartage or transport contractor and any other person who, during any period of six consecutive calendar months, purchases on an average more than 20 litres of new oil per calendar month;

"controlled area" means a magisterial district or municipal area referred to in Annexure A;

"crude oil" means a naturally occurring mineral oil consisting essentially of a mixture of petroleum hydrocarbons;

"distributor" means any person, other than a reseller, who manufactures or distributes new oil and who in the course of or as part of his business sells it to any other person;

"foreign matter" means any solid or fluid matter foreign to or usually not an element of new oil, excluding any additive;

"Minister" means the Minister of Industries and of Commerce and Consumer Affairs;

"new oil" means mineral oil which has been refined from either crude oil or used mineral oil and which may contain any additive, but which has not been used subsequent to such refining;

"permit" means a permit issued by the Secretary to any person in terms of regulation 10;

"petroleum product" means a petroleum product as defined in section 1 of the Act;

"re-refined oil" means new oil obtained from the re-refining of used mineral oil by a re-refiner;

"re-refiner" means any person who re-refines used mineral oil, whether for commercial purposes or not, and to whom a registration certificate has been issued in terms of regulation 9 (1), or who in terms of regulation 9 (4) is deemed to be carrying on such business;

"reseller" means a person who obtains new oil from a distributor for sale in the course of or as part of a business carried on by him;

DEPARTEMENT VAN NYWERHEIDSWESE

No. R. 797 18 April 1980

WET OP PETROLEUMPRODUKTE, 1977
(WET 120 VAN 1977)

REGULASIES IN VERBAND MET DIE KOOP, VERKOOP, VERSKAFFING, VERKRYGING BESIT, BESKIKKING OOR, OPBERGING, VERVOER, HERWINNING EN HERRAFFINERING VAN GEBRUIKTE MINERAALOLIE

Ek, Schalk Willem van der Merwe, Minister van Nywerheidswese en van Handel en Verbruikersake, vaardig hierby kragtens artikel 2 (1) van die Wet op Petroleumprodukte, 1977 (Wet 120 van 1977), die regulasies uit wat in die Bylae hierby uiteengesit is.

S. W. VAN DER MERWE, Minister van Nywerheidswese en Handel en Verbruikersake.

BYLAE

Woordomskrywing

1. In hierdie regulasies, tensy uit die samehang anders blyk, beteken—

"beheerde gebied" 'n landdrosdistrik of munisipale gebied vermeld in Aanhangsel A;

"bymiddel" 'n skeikundige stof of skeikundige verbinding wat by nuwe olie gevoeg kan word om die werkverrigtingseienskappe daarvan te verbeter;

"distribueerder" enige persoon, uitgesonderd 'n herverkoper, wat nuwe olie vervaardig of versprei en wat dit in die loop van, of as deel van sy besigheid aan enige ander persoon verkoop;

"gebruikte mineraalolie" mineraalolie wat aan die oorspronklike gebruik daarvan onttrek is, en wat as gevolg van sodanige gebruik met vreemde stof besoedel is;

"grootverbruiker" 'n plaaslike bestuur bedoel in artikel 84 (1) (f) (1) van die Grondwet van die Republiek van Suid-Afrika, 1961 (Wet 32 van 1961), 'n bona fide-boer, 'n besteldiens- of vervoerondernemer, en enige ander persoon wat gedurende enige tydperk van ses agtereenvolgende kalendermaande gemiddeld meer as 20 liter nuwe olie per kalendermaand koop;

"herraffineerder" iemand wat gebruikte mineraalolie herraffineer, hetsy vir handelsdoeleindes al dan nie, en aan wie 'n registrasiesertifikaat kragtens regulasie 9 (1) uitgereik is, of wat kragtens regulasie 9 (4) geag word so 'n besigheid te dryf;

"herraffineerde olie" nuwe olie wat verkry is deur die raffinering van gebruikte mineraalolie deur 'n herraffineerder;

"herverkoper" iemand wat nuwe olie van 'n distribueerder verkry om in die loop van of as deel van 'n besigheid wat deur hom gedryf word, te verkoop;

"Minister" die Minister van Nywerheidswese en van Handel en Verbruikersake;

"nuwe olie" mineraalolie wat geraffineer is van òf ru-olie òf gebruikte mineraalolie en wat enige bymiddel mag bevat, maar wat nie na sodanige raffinering gebruik is nie;

"permit" 'n permit deur die Sekretaris ingevolge regulasie 10 aan iemand uitgereik;

"petroleumproduk" 'n petroleumproduk soos in artikel 1 van die Wet omskryf;

"ru-olie" mineraalolie wat in die natuur voorkom en wat hoofsaaklik bestaan uit 'n mengsel van petroleumhidrokarbonate;

"Sekretaris" die Sekretaris van Nywerheidswese;

NM 18/4/80 (55)

Energy crisis in S A

Bill Faill, Science Correspondent

ANNOUNCEMENTS of the past few weeks, taken in conjunction with the long-standing Sasol commitment, make it abundantly clear that coal holds the key to South Africa's energy future.

Careful examination of the available facts and figures also make it clear that we can be completely independent of imported crude oil — our long-standing Achilles heel — by the turn of the century.

At present, we are less bedevilled than most countries by energy problems, since coal provides about 70 percent of the country's power, mainly in the form of electricity. It is on the 30-odd percent of petroleum products that we use that attention must be focused. This latter percentage adds up to a figure of more than 10 million tons a year, split roughly equally between petrol and diesel fuel.

Liquid

Although almost all statistics relating to liquid fuel have been kept secret for a number of years now, many valid deductions can be made, based on the last year for which full figures were issued, 1974. It is generally known, for instance, that Sasol II's output of petrol and diesel will be about 1,5 million tons. Production is due to start this month and the plant will be working at full capacity by 1982.

Sasol III is a replica, which will be making its contribution later in the 1980s, bringing fuel production up to three million tons a year. And there is talk of a Sasol IV.

To this must be added a further 1,1 million tons of fuel promised in the form of methanol by two of South Africa's largest industrial groups. Although home-produced fuel is only a trickle at present, we can look forward to more than four million tons, roughly 40 percent of our needs, in the relatively near future.

Critical to this, of course, is the state of our coal reserves, for the four million tons mentioned up to this point are completely based on this mineral.

A conservative estimate of saleable South African coal still in the ground is 75 000 million tons. By the year 2000 we could be using as much as 450 million tons a year for all purposes, including exports. But this includes very generous export figures and is in reality likely to be much less than this. However, at worst, simple arithmetic shows that there is enough coal to last, prodigally used, for almost two centuries.

And much of South Africa is still unexplored from the mineral point of view. It is likely that the figure for reserves of 75 000 million tons will have to be substantially increased as time passes.

The coal, of course, will in the end be exhausted. But when one considers how far we have advanced technically in the past two decades, let alone the past two centuries, it is not being unduly optimistic to suggest that totally new energy techniques, based perhaps on solar power or nuclear fusion, will become available in the not too distant future.

However, 40 percent of our liquid fuel needs would imply very severe shortages in the absence of imported petroleum. So where is the balance that will ensure our complete independence to come from?

Well, waiting in the wings is a proven ethanol technology which will use as its raw material base sugar cane, maize, and cassava. It has been calculated that if the same amount that we export of the first two of these was used for ethanol production we could make a further 20 percent of our fuel requirements. We could also retain these valuable exports, for there is land available to produce the necessary surplus.

And this still leaves timber out of the picture. Plans are well under way to produce methanol from surpluses of this renewable raw material. Responsible sums related to this have also been done and it has been claimed that we could produce 40 percent of our fuel needs from timber.

It has been cautioned that we should not become too dependent on crops which due to the vagaries of weather can fail. But even in the worst years, failure is only partial and should not affect these percentages too severely. In any case we do not lack vast stockpiles of conventional fuel which would cover any shortfall.

All this adds up to 100 percent but this is still not the end of the story. A great deal of research and development is going on all over the world into battery-driven vehicles. By the turn of the century, energy experts calculate that the present problems will have been solved and that ten percent of road vehicles will be battery-powered.

Mercy

So, ironically, a country now at the mercy of oil exporters could by the turn of the century be exporting fuel.

In these calculations much has been left unsaid. Their implementation is going to require a great deal of planning and co-ordination. The costs of the different fuels vary. Conventional petrol is still the cheapest, Sasol fuels the most expensive, with methanol and ethanol in between.

The power output of them varies as well. Sorting this out so that all consumers pay the same in terms of kilometres driven will be a complex task, as will phasing in the vehicles adapted to the use of various fuel combinations.

The conclusion to be drawn now is that we must get on with the job along the various lines indicated and that energy policy implementation must be in the hands of one central authority.

Getting ready for Koeberg

S Times (55) 20/4/80

HEATER tube bundles for Koeberg Power Station undergoing tubing prior to complete assembly.

The materials are mainly of stainless steel. Most operations are carried out in a controlled environment and are subject to rigid quality standards.

Heat Exchangers Africa, a subsidiary of the Murray & Roberts Group, are the only manufacturers in southern Africa busy with this type of high technology heat exchanger fabrication, worth around R1-million.

Heat Exchangers Africa was commissioned by Delas Weir of France to build 12 units for the Koeberg Nuclear Power Station. Delivery of the first units is expected in mid-May 1980.

'Petrohol' may cause problems

Argus 21/4/80

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A MIXTURE of petrol and a Sasol II by-product called 'ethialol' will be released on the Reef soon but it is believed at this stage that the fuel mix could produce a number of problems.

Fuel experts in Cape Town say the Sasol by-product was used in Sasol petrol when Sasol I came on stream many years ago.

This caused corrosion problems in carburettors, especially in older cars, and fuel systems which contributed to the alcohol being withdrawn from the mix.

'When they knew Sasol II would be coming on stream, they had to find a use for the alcohol by-products again and this is why they are being added to petrol now,' one expert said.

MINISTER'S REPLY

Last week, Dr Schalk van der Merwe, Minister for Consumer Affairs, told Parliament in answer to an Opposition question, that the 'petrohol' mix would be introduced in the Transvaal soon.

The mixture is to be marketed by all major fuel companies.

It is understood Sasol called for all motor manufacturers to send them samples of their fuel systems for testing with the new mix.

WATER SOLUBLE

Alcohol is attracted to water and is water soluble. This promotes corrosion in fuel lines and systems.

Sasol has declined to release details of the blend, and the fuel companies have agreed to let Sasol reply to queries. They refuse to supply answers to questions about the fuels, so it is impossible to determine whether these difficulties, among others, have

Iran the wild card in the oil pack

157 55 RDM 21/4/80

LONDON. — Oil supply and demand should be reasonably balanced in 1980, but the Iranian crisis could trigger a new price explosion, says the head of the Royal Dutch/Shell oil group, Mr Dirk de Bruyne.

Mr De Bruyne spoke at a news conference introducing an annual report which showed the world's second biggest oil company trebled its net income in 1979 to £3 050-million.

He said that in 1980 in spite of production cuts by some members of the Organisation of Petroleum Exporting Countries, the oil supply should be reasonably balanced.

"Barring accidents the oil is going to be there. Stocks are high. As long as people believe there is a reasonable balance, we may see a far less dramatic price explosion than in 1979 (when prices more than doubled).

"But Iran may provide such an accident."

Mr De Bruyne said Iranian exports had declined — analysts believe they are down to about 1 500 000 barrels daily, or 2% of world demand — and "they are fickle".

Enough oil was in the system to enable it to cope without Iran, "except that it might create a frame of mind, a psychosis, that might drive the price of other crudes up".

Mr De Bruyne said supply would need to exceed demand by about 2-million barrels a day for the market to get out of what he called an anxiety zone.

He and other Shell executives explained their assessment that, until Japan and some West European buyers were sure that the surplus was indeed that big, they would anxiously scramble to stockpile oil, keeping up prices.

Group managing director Mr Robert Hart said he had expected the world to emerge from this anxiety zone this summer, but because of the Iranian crisis, he could only hope it would.

Mr De Bruyne said much depended on whether Saudi Arabia kept output at its present high level of 9 500 000 barrels a day. He thought the Saudis wanted to keep up output to stabilise the market and get Opec to return to a unified pricing system when Opec oil ministers met in Algiers on June 9.

Mr De Bruyne said the Shell group's capital investment in 1980 would run at about £2 500-million, mostly on exploration and development of oil and gas resources.

Trading results in the first quarter of 1980 had been acceptable in spite of retroactive price rises imposed by Opec countries which could not be passed on to the market.

(Shell, together with British Petroleum and 13 Japanese importing firms, has challenged a new Iranian price rise of $2,50 a barrel).

BP has held what it said were inconclusive talks with the Iranians. Mr De Bruyne said some Japanese negotiators were now in Iran, and a Shell team would follow before the end of April.

* * *

VENEZUELA'S President Luis Herrera Campins told the EEC Parliament in Strasbourg that the 1979 oil-price rises hardly compensated for losses caused by the fall of the dollar and inflation in the industrialised world.

"It would be a grave illusion to plead for an oil price which is not adjusted to the supply and demand situation on the energy market."

Opec, of which Venezuela was a founder member, had been a moderating factor in the energy market "while oil multinationals speculated on the spot market", he said.

The international economy was in its most critical phase since the great depression.

"In addition to the monetary chaos of the last decade, we now have a revival of protectionism in the industrialised economies."

* * *

MAJOR Opec countries seem to be changing their investment policies insofar as they have ceased to invest their funds exclusively through commercial banks, says a Credit Suisse executive board member, Mr Ernst Schneider.

He told a gathering of international bankers and treasurers at an Asia-Pacific finance seminar in Singapore that under the influence of increased credit risks, these countries were seeking new investment possibilities.

These include the holding of balances with central banks, the purchase of government bonds of industrialised nations denominated in hard currencies and deposits in the planned substitution account of the International Monetary Fund, provided the terms were suficiently attractive. — Sapa-Reuter.

The value of inflationary profits is reflected in the money values of the assets producing flows of net money income or in the money prices of financial titles to such income flows. Changes in the prices of assets provide the most conspicuous forms of inflationary gains and losses. In order to reflect increases in real profits during periods of inflation an asset would have to increase in money value by more than the ~~general~~ increase in prices generally.

It should however be clear that relative prices, including the relationship between inflows and outflows and costs and sales may change for a variety of reasons. Real demand or supply factors may change over time. Real savings may increase or decrease causing changes in the real cost or investment. Real monopoly powers may strengthen or weaken. Real taxes or their burden may change over time. The effects of these real changes are also reflected in changes in the money value of assets and are independent or the rate of inflation.

In essence therefore inflationary gains or losse ... ble from ordinary true economic profits or losses. The ... economic uncertainty. More particularly they are functi ... out the future money prices of the inputs and outputs ec ... sell. If the future were known with certainty then the pr ... ld be established at one point in time for all time an ... conomic profits or losses. This proposition would also be vali ... ertainly expected to increase over time. True profits in ... opposed to the accountants', understanding of the term are t ... ainty bearing. Profits are thought to reflect the ability to hav ... ed better than competitors, the outcome of economic develop ... the values of costs and sales.

It may therefore be said that if everything about ... with certainty including therefore the future ... ationary profits o ... he "correct" structure ... erefore be concluded ... rices that are respo ... y or non-inflation ... e transpires to be high ... ion or consumptio ... before they sell ... the equivalent ... price increases is lower th ... of course typically the firms which buy or hire

Smooth bottom for plane-sailing

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352

WM 31/10/80

THE FIRST South African liner vessel to be treated with a revolutionary marine coating which cuts fuel consumption at sea has left Durban's drydock.

The 14 000 dwt multi-purpose Safocean Auckland spent seven days in the port's maintenance facility, during which her underwater section was grit blasted, primed and treated with six coats of paint — the final three being an advanced composition developed by International Marine Coatings.

It is this self-polishing copolymer (SPC) composition which will result in savings for Safocean.

Captain Bruce "Swish" Ashworth, general superintendent of Safocean, explained how SPC would increase the line's fuel efficiency at sea.

"The coating automatically polishes itself to a smooth surface as the ship moves through the water, thereby removing hull roughness," he said. "This reduces the frictional resistance to the ship's movement through the water and this reduces fuel consumption".

He estimates that up to 80% of a ship's resistance is caused by hull roughness.

Captain Ashworth said that the cost of the SPC treatment, including drydocking, grit blasting and painting, would be about R110 000.

"Safocean have studied cost savings achieved by international carriers that have been similarly treated and we are confident that not only will our ships save fuel, but futher cost reductions will result from increased intervals between drydockings and expenditure cuts on hull cleaning and surface preparation."

Safocean, a joint venture by Nedlloyd Lines and Safmarine, provides shippers with the only regular, scheduled service between South Africa and Australia including Mauritius on westbound sailings. Managing agents are Nedlloys Agencies SA.

RDM 21/4/80.

Local authorities get black petrol rebates

55 255 343

By HARRY MASHABELA

BLACK garage owners in urban areas lose thousands of rands — money they ought to receive from petrol companies as rebates for selling petrol — to local authorities each month.

This was the claim of Mr Richard Maponya, chairman of the Black Garage Proprietors' Association, after a meeting between his organisation and petrol company representatives yesterday.

The meeting, held at the Zenzele YWCA centre in Dube, Soweto, was called by the garage operators to find out why petrol companies paid rebates to local authorities instead of to black petrol dealers.

Mr Maponya said that in Soweto alone the 25 garages were losing to the West Rand Administration Board (Wrab) an estimated R88 000 in rebates monthly.

"It is fact that the board receives a rebate on petrol sold in the townships. This forms the basis of the land use for petrol filling stations in black areas, Wrab's chief director, Mr A H Stander, commented.

"I don't know how the rebate is determined. But I take it that black petrol dealers will not be in a worse position than their white counterparts."

Representatives of Mobil, Shell, Trek and British Petroleum told the meeting that it was their policy to pay rebates to the operator because only he could improve the service to the community.

However, in the case of black urban areas rebates were paid to administration boards because they owned the sites on which petrol was being sold. If black petrol dealers could buy the sites, companies would pay rebates directly to them.

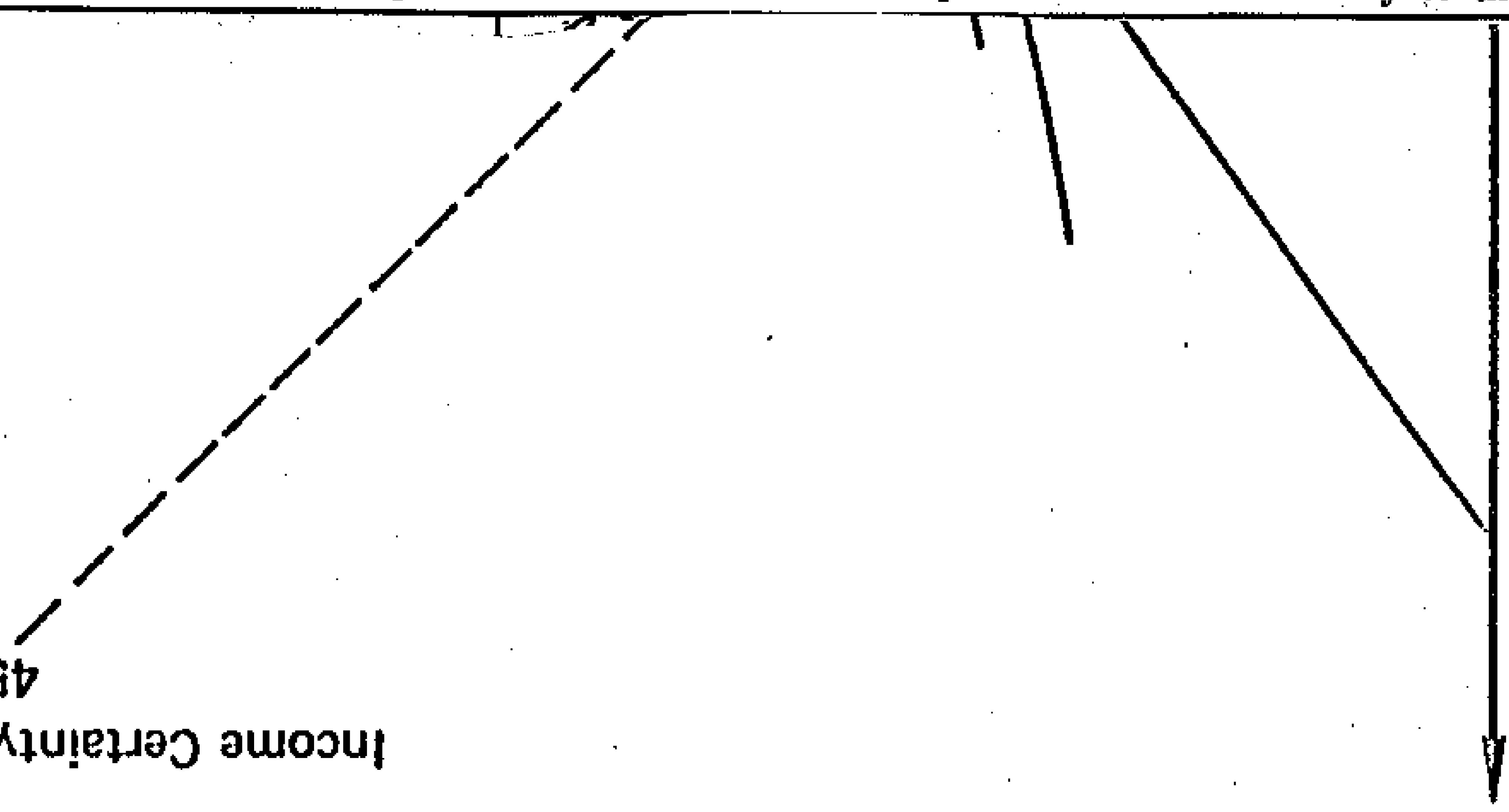
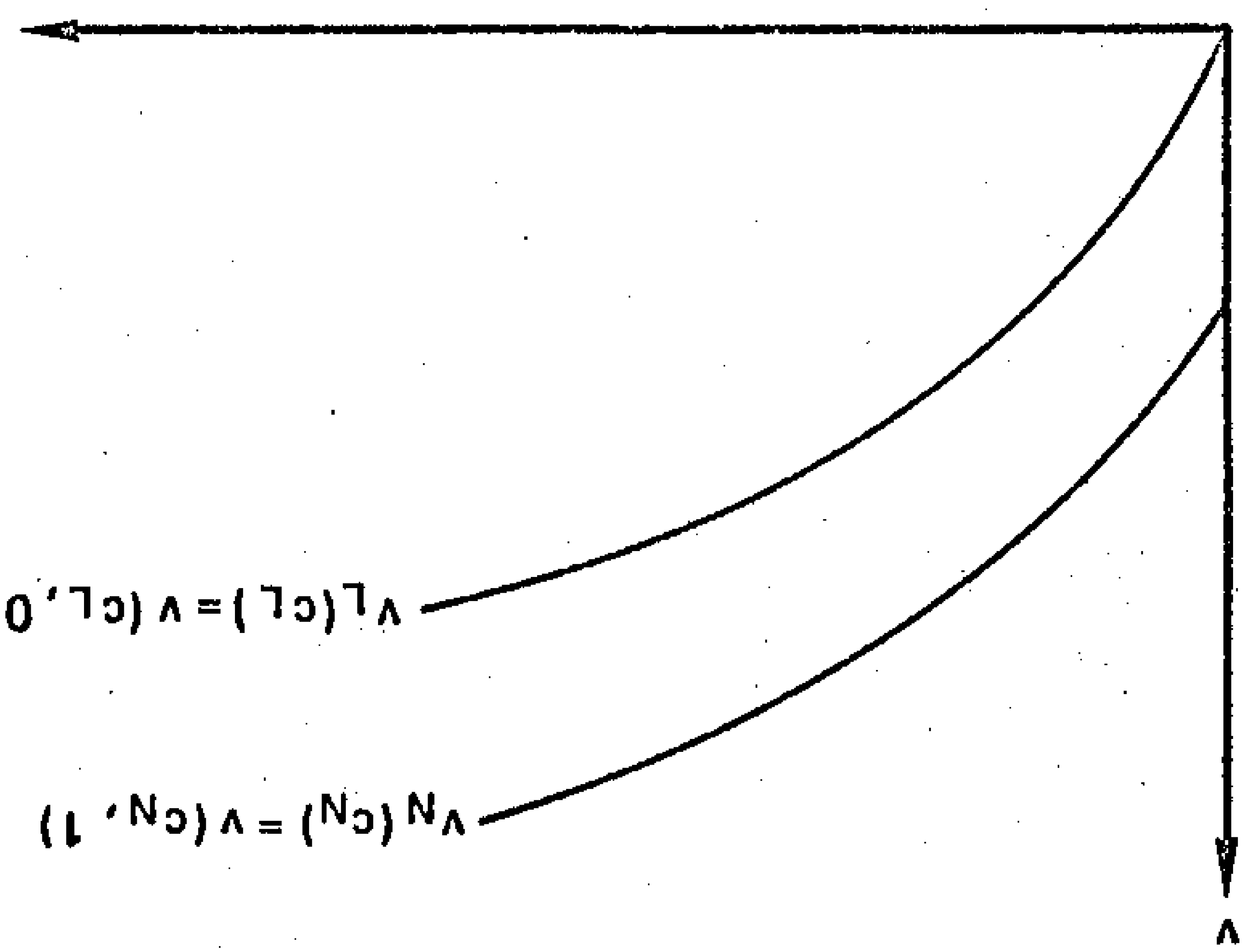


Fig. 5a — State-Dependent Utility



Jojoba bean oil can be used in motor industry

C.T. 2/14/80

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By STEPHEN WROTTESLEY

MANY of South Africa's fuel problems could be alleviated in the next five years by the mass growth of an American bean, the Jojoba.

A City businessman who plans to grow the Jojoba bushes in Mossel Bay, Riversdale and in the Northern Transvaal says that in the next few years oil from bean could be found in most car differentials.

The bean has the same properties as sperm whale oil. Its growth on a large scale, both inside South Africa and in other parts of the world, could bring about a cutback in the number of whales killed annually by Japan and Russia for the oil.

Already the International Whaling Commission has clamped down on the factory ship killing of sperm whales. However, shore-based operations can still kill sperm whales, a species that has been on the endangered species list of the United States for a number of years.

Employment

Outlining the benefits and uses of the oil, Mr Keith Pulvermacher said the new plantations would produce large-scale employment and the oil could be used in a number of industries.

Mr Pulvermacher said Jojoba, pronounced Ho-ho-ba, had been described as the world's third most profitable crop, after the opium poppy and dagga. At today's prices the oil from its seeds was selling at R18 a litre, being the equivalent of R44 000 a hectare of bushes.

"Jojoba oil is chemically almost identical to that of the sperm whale, the oil of which is very scarce and has not been synthesized or replaced anywhere. The sperm whale could be extinct in the forseeable future if a substitute is not adopted on a very large scale."

Alternative

"Many possibilities have been tried since the United States stopped importing sperm oil in 1970, but only Jojoba oil is a realistic alternative," Mr Pulvermacher said.

He said the Jojoba bush grew very well in various parts of South Africa, notably in the winter rainfall area of the Cape.

The multi-stemmed, evergreen bush is indigenous to the Sonoran desert of Arizona, California and Mexico. The seeds are on the female bush and resemble coffee beans.

The bush has a life span of more than 100 years and produces a yearly crop from its fifth year.

The seeds contain about 50 percent oil. The other 50 percent is a protein-rich animal feed.

Harvesting of the seeds is done by hand. However, a machine has been developed to assist with harvesting so the plants can also be grown in areas where there is a shortage of labour.

At present the main market for Jojoba oil is the cosmetics market. However, the pharmaceutical industry could also use large quantities. One outlet is in the penicillin manufacturing process.

"Probably the largest potential uses are in high pressure lubrication, such as in motor car differentials and automatic transmissions, but these uses would have to be at a much lower price," Mr Pulvermacher said.

Present production of Jojoba oil comes mostly from natural bushes in the desert, but substantial plantations are coming into bearing in Arizona and California.

Despite these findings the old-established pattern of oscillating migrant labour was, for reasons which will be examined in a later chapter, maintained and, indeed, extended. By early 1972 nearly a quarter of a century after the Fagan Report we find that instead of the mining and industrial employers having become less dependent on migrant labour by building family houses for their workers in town the manufacturing and services sectors of the economy have become more dependent upon oscillating migrants who are being housed on a temporary basis in gold-mine type hostels and compounds which are mushrooming in all the industrial centres of the country.

Mining Sector

To get some idea of the nature and extent of migrant labour in South Africa today we shall begin with the gold mines partly because more information is available about them than about either agriculture or manufacturing and partly because, as has been argued elsewhere, the gold mining industry is the example on which the country's entire labour policy is being modelled.[9]

In December 1970 the gold mines of South Africa employed some 367,000 black miners drawn, as we have seen in Table I, from all over Southern Africa. These men

x were housed in some compounds the smallest of which provided accomodation for

x men; the largest of whcih provided accomodation for men. The oldest

x compound was built i n the following page

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(55)

Oilmen join the methanol probe

RDM 22/4/80

Staff Reporter

CALTEX Oil (South Africa) has confirmed its working agreement with Anglovaal to investigate the production, distribution and marketing of methanol from coal.

A Caltex statement says: "The significance of this agreement is Caltex's experience in fuel production technology and its ability to market products through its extensive distribution and sales network throughout the Republic.

"For about nine months Caltex has been distributing and storing methanol for use in the research programme being conducted by the energy research institute at the University of Cape Town, which is being funded by Anglovaal.

"Storage facilities are now located in Cape Town and Johannesburg, and extensions to other areas are under consideration.

"Part of the road tanker fleet is being converted to use methanol. These vehicles will operate under normal service conditions as part of the research programme into the use of methanol in diesel engines.

"Research is to be conducted by Caltex's technical staff in conjunction with the UCT energy research institute and Anglovaal."

In addition to the joint methanol project, Caltex has made considerable progress in technical investigations to produce diesel and petrol from heavy fuel oil at its Milnerton refinery.

The company is also investigating the production of synthetic crude oil from coal, the distribution and marketing of ethanol, and changing the characteristics of existing diesel fuels to help alleviate the diesel imbalance problem.

Rhodesia (55) ethanol [illegible] start-up

SALISBURY. — Triangle Ltd's ethanol plant which will produce alcohol from sugar to be blended with petrol is to come on stream next month, says a Triangle group spokesman.

The ethanol plant, under construction since late 19[illegible], will reduce Rhodesia's imports of oil and it is estimated that ethanol will provide about [illegible]% of current petrol consumption.

The foreign exchange saving on oil imports is estimated by Government officials at between $Rh10-million and $Rh12-million a year. But after the loss of sugar exports (at current prices) has been taken into account, the net foreign exchange saving is put at $Rh3-million to $Rh4-million.

The ethanol plant was completed ahead of time and below budget cost of $Rh4-million.

Ethanol distribution will start in the middle of May.

There are plans to establish a second ethanol plant, which will increase to [illegible]% the ethanol content in petrol consumption, but this is subject to review because of the recent surge in sugar prices.

Triangle says that the use of sugar for the manufacture of ethanol will cost the group profits in years of high sugar prices, but it will be cushioned when the sugar price falls. — Reuter.

Big producers pushing for higher prices

Crude oil prices

NM 23/4/80

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Nicholas Moore.

London—Opec countries and other producers are pushing up the price of natural gas, conscious that as the world tries to use less oil the gas will be in growing demand.

Iran and Algeria, hardliners in the Organisation of Petroleum Exporting Countries, (Opec) on the subject of crude oil prices, are the biggest producers of gas after the US and Soviet Union.

They are also leaders in the effort to claw the price of gas up to levels equivalent to that of oil in terms of energy produced, as expressed in British Thermal Units (BTUs).

Iran's chief customer is the Soviet Union which is at present refusing to pay a new price of 3,63 dollars (about R 2,9) per million BTUs, roughly a five-fold increase on the 76c which Iran charged under the Shah.

Negotiations in March were said by both parties to have been inconclusive with the Soviet side offering to pay a price no higher than 2,66 dollars (about R2,10). Algeria, a pioneer in the liquefaction of natural gas and its transport by tanker rather than pipeline, seeks to charge US French and other European buyers six dollars (about R4,80) per million BTUs.

Again the customers have baulked.

The US El Paso Company, contracted to take 10 billion metres a year for 25 years, said it was unable to pay and Algeria suspended supplies on April 1.

Gaz De France, Algeria's other big customer, refused to agree to pay more than 3 dollars (about R2,40).

Lesser customers such as Belgium and the Netherlands await the outcome of the El Paso and Gaz De France negotiations, in which the next step is expected to be the arrival in Algiers of a US Government delegation next Monday.

Oil industry analysts in London said both sides were gambling.

The Algerians counted on the developing energy crisis to make gas a sellers market.

Their customers counted on a surplus of alternative fuel oil during the summer when the demand is slack, which would enable them to hold out until such time as Algeria began to feel the loss of gas revenue.

Opec's case is that unless gas plays a major role, the world will not cope with the crisis posed by declining reserves, or crude oil. Gas-gathering systems, pipelines and liquefaction plants, however, required huge investment and so it contends the price must rise.

Opec producers are at present flaring off gas equivalent to about 2,2 million barrels of oil a day, about the volume of oil produced by the North Sea, as 'utter waste'.

Non-Opec producers which have raised gas prices this year include Canada and Mexico, which both have raised delivered prices to the United States by 25 percent to 4,47 dollars (about R3,50 per million BTUs. — (Sapa-Reuter.)

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ALTERNATIVE FUELS

Two's company

FM 25/4/80 55

Alcohol fuels have reached take-off point in Southern Africa. As foreshadowed in the *FM* on April 11, Caltex and Anglovaal have signed a working agreement to investigate jointly the production, distribution, and marketing of methanol from coal.

Caltex has been storing and distributing methanol for nine months for use in the Energy Research Institute. Initial storage facilities are at Johannesburg and Cape Town, while extensions to other areas are under consideration.

Moreover, vehicles in Caltex's road tanker fleet are being converted to methanol, as part of the research project.

Caltex also reports that it has made "considerable progress" in converting heavy oil to petrol and diesel at its Milnerton refinery. This project will reduce the total amount of crude oil required to produce SA's liquid fuel requirements.

Ethanol's future

Caltex is investigating the production of synthetic fuel oil from coal, the distribution and marketing of ethanol, and changing the characteristics of existing diesel fuels to alleviate the diesel/petrol imbalance problem.

As far as ethanol (ethyl alcohol) is concerned, Minister of Commerce Schalk van der Merwe said in Parliament last week that a blend of petrol and alcohol would soon be on sale through premium grade petrol pumps. The new fuel blend would initially be available on the Reef in the third quarter of 1980. Was the Minister referring only to Caltex's ethanol-petrol project, or could other similar schemes also be in the pipeline?

Meanwhile, Zimbabwe's Triangle Sugar will have its ethanol plant (under construction since 1978) on-stream next month. It will provide no less than 15% of Zimbabwe's current petrol requirement in the form of a petrol blend. A second plant, which would increase the proportion of ethanol to 20%, might also be established. But the high international sugar price might operate as a discouragement.

The Corporation for Economic Development (CED), formerly the Bantu Development Corporation, has announced that it is carrying out a widespread research programme into growing cassava as a source of ethanol. It is proceeding in KwaZulu and Gazankulu, and covers major aspects of cultivation like pest control, the choice of the best varieties, and planting procedures. The CED hopes that enough will be known within two years to start large-scale cultivation.

Although the growth of crops for ethanol production is commendable as a means of providing useful quantities of liquid fuel (it also means a cash injection into underdeveloped agricultural areas), there can be no doubt now that the future belongs to methanol.

The fact that oil majors and at least one multi-national car company are coming close to the marketing of methanol, not to mention engines designed to burn it, indicates that coal-based methanol is close to commercial viability. As it can be produced from coal more cheaply than Sasol's synthetic fuels, it may in the long run supersede them as well, leading SA to complete liquid fuel independence.

It may not be getting too far ahead of the facts to suggest that SA may now be acting as a test-bed for world-wide adoption of methanol as a substitute liquid fuel.

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OIL RECYCLING

The rules

FM 25/4/80 58

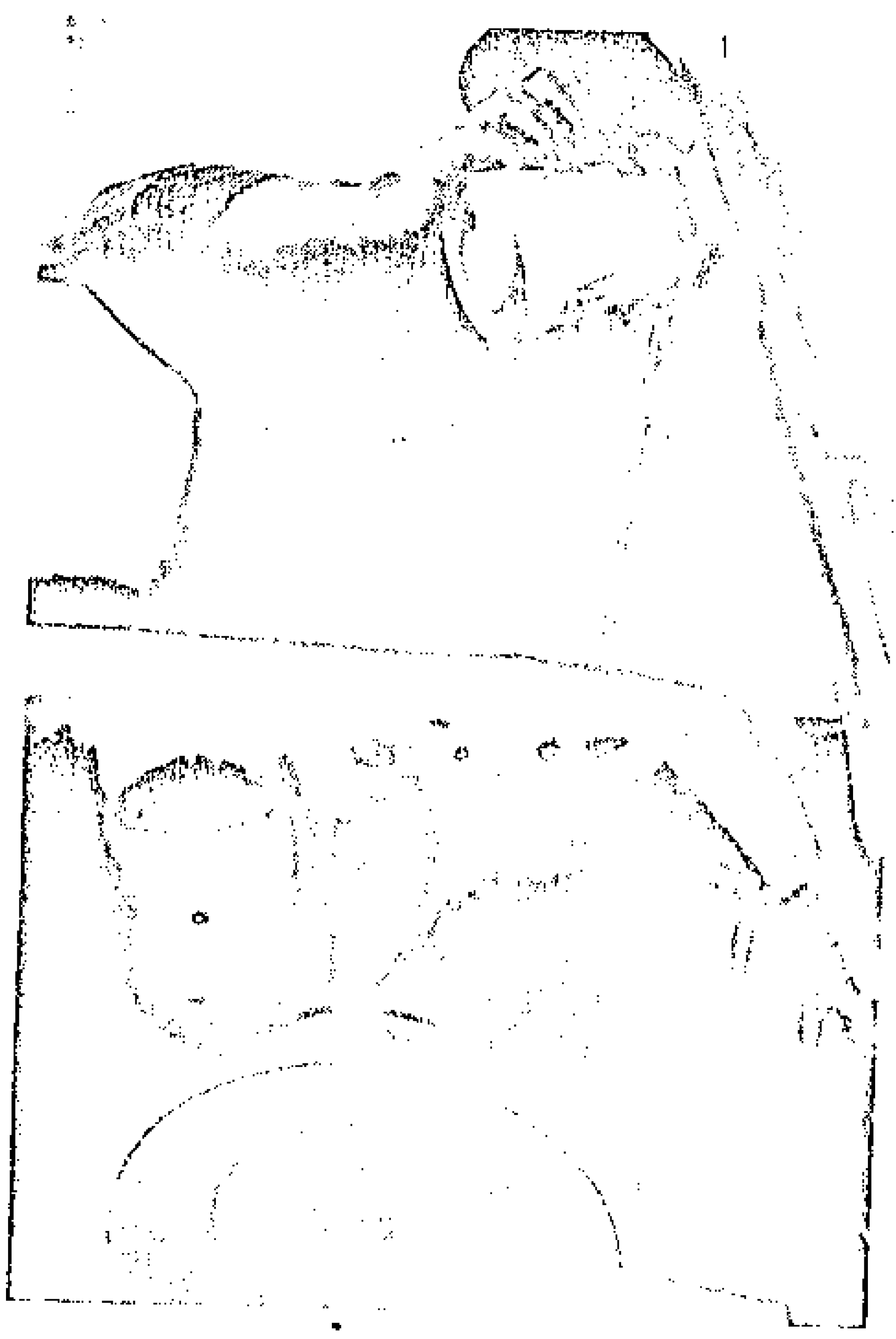
The Department of Industries has at last promulgated regulations governing the re-refining and recovery of used lubricating oils. Although the R50m-a-year industry is pleased that this action has been taken, there is some doubt that it will have the desired effect of conserving all used oil resources available in SA.

In terms of the regulations, published on April 18 and effective 90 days thereafter, anyone wishing "to perform any act in connection with used mineral oil" will require a permit, except where used for treating animals, lubricating machines or implements, or preventing rust.

Furthermore, no-one except a re-refiner, distributor, reseller, bulk consumer, or person transporting oil, may have more than 20 ℓ of used oil in his possession for longer than 30 days. Resellers are limited to 5 000 ℓ and bulk users to 2 000 ℓ. It is also an offence, in terms of the regulations, to destroy, discard, or contaminate used oil, which must be stored or transported in containers "suitable for preventing destruction, loss or wastage thereof."

Secretary for Industries, Philip Theron, says his department "won't create a strong policing force" to ensure that the regulations are adhered to. "This will have to come from the private sector who should report abuse of used oil to us. We have merely set out guidelines for the industry."

At present some 60% (60m ℓ) of available used oil in SA is recycled, but with most of the big users like construction companies and mining houses well aware



Backyard mechanics . . . millions of litres wasted

of the necessity to conserve, the feeling is the regulations don't go far enough to control wastage by backyard mechanics.

Says Colin Pote, MD of Condor (the Mobil re-refining subsidiary): "We estimate that millions of litres are wasted annually. In the US, 50% of engine oil goes through do-it-yourself servicers." He sees the regulations as a step in the right direction, but thinks that implementation and recovery is the problem.

Estimates put SA's total re-refining capacity with six companies in the business at around 130 000 t. This is about 20[illegible] of the country's annual 370 000 t lubricating oil needs.

The regulations bring home the strategic value of lubricating oils, which accounts for about 7% of each barrel of crude refined. Re-refining, while providing only a small saving of R7m in foreign exchange, can extend the life of lubricants three times. In other words, after virgin oils and additives have been added to re-refined products, the original 60m ℓ is stretched to 168m ℓ, before wastage and degeneration reduce its properties to zero.

The other point is that lubricating oils can't be recovered from the Sasol process, so SA is entirely dependent on imports.

It is imperative, therefore, that buyers and resellers of used oils be controlled. Millions of litres are burned in oil-fired boilers, says Pote, who thinks that a permit system will put a virtual end to this practice.

Nick Kruger, GM of Trek Beleggings' Chemico agrees that the regulations could eliminate burners of oil. Chemico, with a re-refining capacity of 45 000 t (45m ℓ) annually, is the biggest operator in the business, but is only operating at about 45%. Condor, on the other hand, can produce 35m ℓ annually, but at present only handles about 20% of this. Kruger reckons that recycled oil is "about 20% cheaper than virgin." Drawback for the industry though, is transport costs, especially from outlying rural areas, where the agricultural sector is potentially one of the biggest suppliers of the raw material.

Prices paid for used oil vary by grade and area, but average out at about R12 per 210 ℓ drum. "But when you add railage and transport," says Kruger, "it makes the business costly."

D.D.

Paraffin profits down, wholesale price up

(55)

25/4/80

CAPE TOWN — The Minister of Industries, Commerce and Consumer Affairs, Dr Schalk Van der Merwe, yesterday announced a decrease to 33⅓ per cent in the retail profit margin on the oil companies' list prices of illuminating paraffin as from today.

In a statement here, he also announced a 1,4c a litre increase in the wholesale list prices of companies for illuminating paraffin.

"The net result of these adjustments would be a relief of the burden of those persons on illuminating paraffin for their household energy needs," he said.

Dr Van der Merwe said the government had considered the possibility of a decrease in the maximum prescribed retail profit margin on illuminating paraffin without removing incentive from the retailer.

Sufficient justification also existed to allow the oil companies to increase their wholesale list prices by 1,4c a litre in order to compensate them for increased import costs, he said.

— SAPA.

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Paraffin price down again today

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EVERY CANDIDATE MUST enter in column (1) the number of each question answered (in the order in which it has been answered); leave columns (2) and (3) blank.

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able. Red or green ink may be used only for underlining, emphasis or for diagrams, for which pencil may also be used.

3. Names must be printed on each separate sheet (e.g. graph paper) where sheets additional to examination book(s) are used.
4. Do not write in the left hand margin.

WARNING

1. No books, notes, pieces of paper or other material may be brought into the examination room unless candidates are so instructed.
2. Candidates are not to communicate with other candidates or with any person except the invigilator.
3. No part of an answer book is to be torn out.
4. All answer books must be handed to the commissioner or to an invigilator before leaving the examination.

Any dishonesty will render the candidate liable to disqualification and to possible exclusion from the University

Energy: full steam ahead

55 RDM 25/4/80

THE expansion of South Africa's pilot plant for the enrichment of uranium into a production plant, was continuing at maximum tempo, the Chairman of the Uranium Enrichment Corporation, of South Africa, Dr A J A Roux said at Pretoria University last night.

Dr Roux said the expansion was aimed at making the country self-reliant as soon as possible in the first phase of its nuclear energy programme.

Dr Roux's lecture dealt with the role of nuclear energy in the energy shortage in the world.

If it was considered that South Africa was dependent on imported oil for less than one-quarter of her energy needs, it was clear that she was in "an extremely favourable position compared with the rest of the world".

It should be remembered, however, that the threatening energy shortage would in future have an increasing influence on South Africa.

"Precisely for that reason, the Government had to be lauded for its far-sightedness, at an early stage already, having established a Cabinet and energy policy committee whose task is to ensure that the country's valuable energy resources are being effectively utilised," Dr Roux said.

South Africa was in the favourable position of having large reserves of coal and uranium. But her coal reserves were not unlimited and this would mean that she would in due course have to limit the quantities of coal used to generate electricity.

"Fortunately, the country has large reserves of uranium which can be applied towards this end. In fact, 19% of the proven reserves in the free world, that can be produced at less than $80 a kg, are to be found in South African formations," Dr Roux said.

For the generation of electricity, however, enriched uranium was required. South African scientists had succeeded in devising a new process for the enrichment of the mineral "which promises to be strongly competitive with existing processes."

A pilot plant for the enrichment of uranium was established in 1976, and at the beginning of 1978 a beginning was made to expand the the pilot plant to become a production [illegible] was being

Sapa.

DISPATCH, SATURDAY, APRIL 26, 1980 — 3

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Ciskei to control power supply

(55)

KING WILLIAM'S TOWN — The Ciskei Government will, in the course of the year, take over from the Mdantsane Special Organisation the supervision of the electricity supply to the township.

This was announced by Chief P. Z. Siwani, Minister of Works, when he presented his policy speech in the Ciskei Legislative Assembly.

He said the move would be beneficial to the Ciskei Government in terms of finance as well as the creation of further job opportunities for Ciskeians.

Chief Siwani, however, thanked the Mdantsane Special Organisation, which he said continued to do "sterling work" on behalf of the Ciskeian Government. He said electricity connections at Mdantsane were being carried out at the rate of 1 000 houses a year.

The current financial year would also see the completion, at Ilitha Township, near Berlin, of the main high tension ring feeder, which would supply electricity to the shopping complex, the superintendent's office and disposal works.

He said Sada derived its electricity supply from Escom, with a reticulation of 75 per cent. He said it was anticipated the job would be completed next year.

He said 40 per cent of the houses at Dimbaza had electricity connections and 60 per cent of the reticulation had been completed.

Chief Siwani further revealed that three Ciskeian apprentice motor mechanics had during the past year passed their trade tests "with flying colours". Three apprentice panel beaters had also completed their contracts of apprenticeship and all were employed as qualified artisans by the Ciskei Government. — DDR.

GENERAL NEWS

A national transport plan for the eighties

STAR 29/11/80 (85) (~~87~~)

By Kevin Murray, Transport Reporter

The Government is considering a dynamic formula for transport planning that could help answer many of the crucial energy problems South Africa will face in the 1980s.

The formula was drawn up by transport experts from the private sector and is now being studied by officials of the Department of Transport.

It follows the promise of a new deal for the private sector by the Minister of Transport, Mr Chris Heunis.

Experts believe that it could revolutionise the transport scene in South Africa and allow for much greater efficiency in land, air and sea transport.

"This will obviously be of tremendous benefit to the economy of the country," said one economist, Mr A Hammond-Tooke of the Federated Chamber of Industries.

The formula proposes a system of consultation between government planners and transport experts from the private sector.

It recommends a two-tier national transport advisory committee that will be extremely influential and able to initiate policy changes in Government planning.

The first tier would be made up of representatives from all the private transport bodies, which would pass on ideas to the higher tier for evaluation. These ideas would then be passed on to Government.

"Under this new deal there will be a huge improvement. Until now the transport scene has been too fragmented to properly guide the Government on transport matters," said Mr Hammond-Tooke.

Mr Heunis suggested this advisory committee early this year, a move which was seen as the first concerted effort by the Government to achieve better co-ordination of transport.

The formation of a such a body would have vast implications, say experts. It would mean:

- The end of independent transport empires, such as municipal bus services run on different principles.
- An end to the misutilisation of South Africa's resources.
- Self rule for the private sector in transport matters, with the administrative support of the Government.
- A masterplan for transport in South Africa in the 1980s in the face of crucial energy problems.

DD 29/4/80

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City Council slams Escom tariff increase

EAST LONDON — The 7,5 per cent increase in Border electricity tariffs recently announced by Escom was vehemently attacked by members of the East London City Council here last night.

The council is to request the government to receive a council deputation to discuss the effects the increase has on the industrial development of the Border area and the possibility of a government subsidy.

It emerged from the council's monthly meeting last night that East London MPs had taken up the matter with the government shortly after the increases were announced, but with little success.

The electricity tariff for East London is, subject to the approval of the Administrator, to be amended to provide for a 7,5 per cent surcharge from July 1.

The city councillor in charge of finance, Mr Ben Armist, said last night he "reluctantly" moved the surcharge because it meant a further "drawback" for establishing industries in the area.

Mr Armist said he understood Escom undertook its capital works on the income from electricity tariffs and that the Border undertaking of Escom had shown a "very handsome profit" during recent years.

Although he did not begrudge Escom for planning for future requirements or providing sporting and other facilities for its employees, he felt it was unfair that "one generation should pay very much more" than it would be using, Mr Armist said.

Escom was a "quasi-government" undertaking and should "get its priorities right", said Mr Armist.

The councillor with the industries portfolio, Mr Joe Yazbek, said the council had reached the "terrible stage" where it was "do or die."

The Border area had reached the stage where its electricity tariffs had become an incentive for "disinvestment" by industrialists, Mr Yazbek said.

His views were echoed by Cllr Fred Stakemire who said the council's continuous representations to the government on electricity tariffs were a case of "gentle words" that drew "hard deeds".

The time was ripe for a more outspoken approach, said Mr Stakemire.

The Mayor, Mr Donald Card, said the University of Port Elizabeth report on the industrial and economic future of the Border area, which is to be released soon, covered electricity tariffs and he was hopeful.

The council resolved last night to urge the Minister of Industries, Economics and Consumer Affairs and the Electricity Control Board that the system of adjusting tariffs by surcharges or discounts be abandoned and all tariff changes be structurally calculated for submission to the Electricity Control Board. — DDR

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Ethanol seen as big job provider

Own Correspondent

Processing the maize surplus into ethanol would provide a substitute for imported fuel and create 300 000 jobs, said the vice-chairman of Sentrachem, Mr Frans le Riche.

There still was some confusion about the real potential of synthetic fuels, he said at a dinner of the Agricultural Writers' Association in Pretoria.

Ethanol mixed well with diesel and could help fuel tractors. Made from maize, it would be a paying proposition at the full producer price for yellow maize.

By-products made this process even more attractive — 2,7 tons of maize would provide 1 ton of ethanol, 0,9 tons of high quality cattle feed and 0,6 tons of carbon dioxide which could be converted into algae, a valuable protein supplement for livestock.

R1 000 A JOB

For each million tons of maize converted into ethanol, 100 000 jobs — secondary employment through service industries taken into account — would be created.

At R10m capitalisation for 150 000 tons of maize annually, this meant that R200m would create 300 000 jobs, which was less than R1 000 a job.

Is SA set to join the big league?

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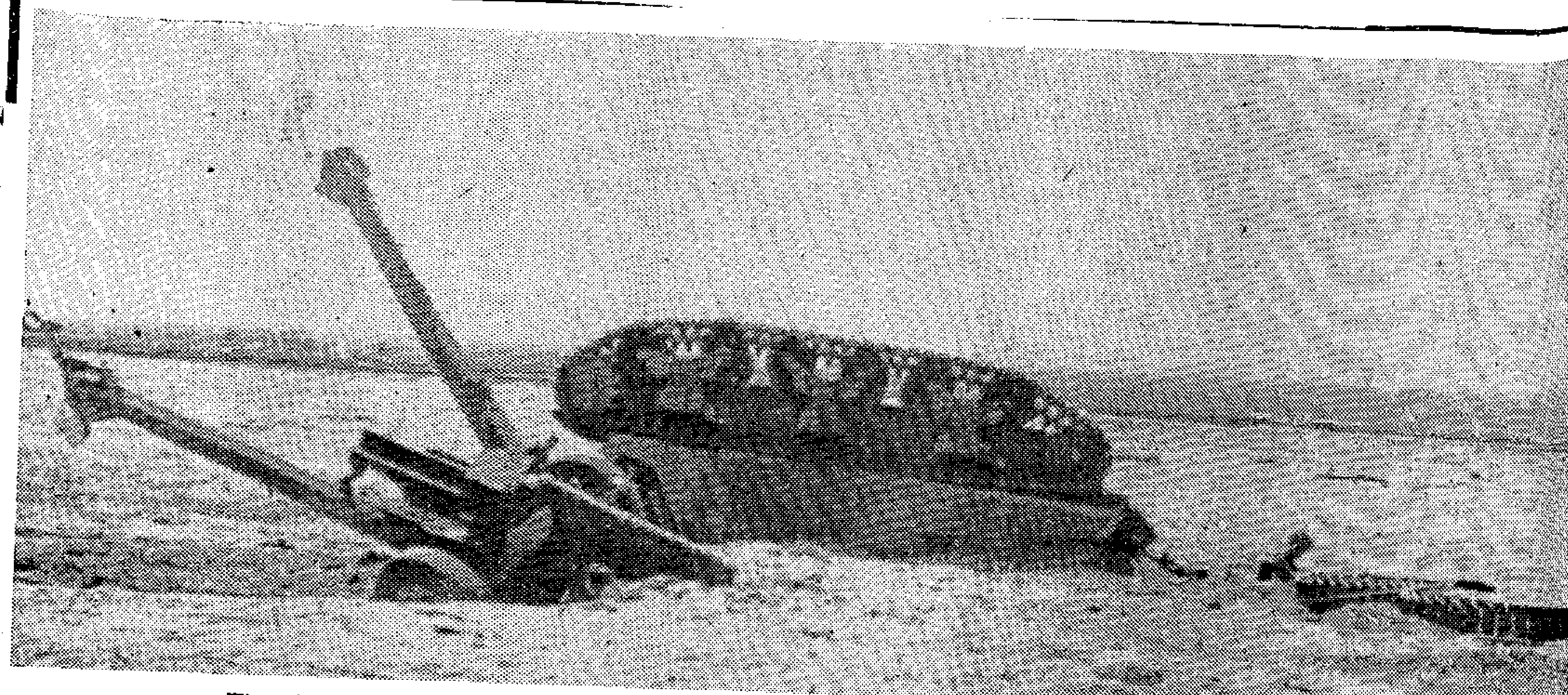
RDM 30/4/80

The power that the atom unleashed is one that has held mankind in thrall since the first fission. **ANTHONY RIDER** reports from Washington on a new report that joins South Africa to the nuclear club.



The deterent effects of short-range atomic weapons . . . after-math of a test blast in Nevada

ONE of Republican Ronald Reagan's key foreign policy advisers has advocated a series of measures the United States should take to discourage South Africa from overtly testing or possessing nuclear weapons.

He is Dr Kenneth Adelman who was a Ford administration defence aide in 1976.

With a security affairs consultant, Brigadier General Albion W Knight, Dr Adelman has produced a paper on South Africa and nuclear weapons for the Foreign Policy Research Institute.

The measures they suggest are:

● Continue to place top priority on persuading South Africa to become a party to the non-proliferation treaty.

● As a possible inducement, initiate action to encourage South Africa's reinstatement on the board of governors of the IAEA and encourage South Africa to apply IAEA safeguards to its future enriched-uranium transactions.

● Assure South Africa about a guaranteed initial fuelling of the Koeberg reactors.

(US-provided fuel would be under IAEA safeguards; indigenous SA fuel would not be safeguarded, the authors say).

● Provide fuel for the Safari-1 reactor at Pelindaba.

(All past US-provided fuel for Pelindaba has been under safeguards, and future US fuel would be, too. To renege on the existing contract might force South Africa to manufacture its own fuel elements and to use them without the present level of safeguards, the authors say).

● Realise it is no longer possible to delay or to prevent South Africa from developing its own uranium-enrichment capability by controlling technology.

(The authors argue it is much more realistic to recognise South Africa as a nuclear supplier and bring it into the community of supplier nations that meet in London. South African participation, they say, would raise its "nuclear responsibility" by requiring appropriate safeguards in all its future nuclear transactions).

● Recognise that it will be impossible to prevent South Africa from developing N-weapons through international control over nuclear technology.

(The authors say that because of South Africa's scientific and technological capability, attempts at such control cannot be effective and may even backfire by encouraging South Africa to proceed with nuclear weapons development).

● Monitor SA's nuclear test capability by national technical means.

(The authors say that if South Africa should reopen the Kalahari site, it would be better that the information be discovered first by the US rather than by the Soviet Union).

Dr Adelman and Gen Knight argue generally that to pursue some goals — improving relations with developing nations and fostering human rights — the US should distance itself from the South African Government in every manner possible.

To advance other goals — such as putting a halt to nuclear proliferation — the US must move in the opposite direction, toward greater interaction with Pretoria.

They confess to ignorance about the inner thinking of top South African officials.

"All the key decision-makers are Afrikaners and, consequently, they have a common view of the world, themselves, and their country and share a common distrust of outsiders.

"Major decisions are made within a small clique — much as in the Kremlin — without sounding out public opinion or the legislature. In spite of such secrecy the utility of nuclear weapons in the South African context can be surmised."

First, they say, and at the very minimum a nuclear bomb could be used as a "weapon of last resort" in a crisis of the highest magnitude.

"If the survival of Afrikanerdom were threatened, one could expect deployment of such a weapon either to render a measure of hope, buy time or destroy some of the opposition as the Afrikaners themselves go down.

"Targets might consist of:

(a) Areas of severest combat within or on the SA borders,

(b) Camps or bases of enemy forces in neighbouring states, or

(c) Capitals of those countries providing important sanctuaries or forces for the war against South Africa."

The authors say that, second, nuclear weapons could be deployed against a large scale conventional buildup although they concede such a concentration of "enemy" forces is unlikely because it renders them vulnerable.

Third, and closely related, small and relatively "clean" nuclear weapons (if they were developed with a high degree of sophistication and reliability) could be used in tactical, battlefield situations.

Fourth, and in the authors view most probable of all, nuclear weapons could be deployed during combat as a deterrent against further enemy action.

Dr Adelman and Gen Knight say that in that event the "target" would be some remote and uninhabited area such as the middle of the Kalahari Desert, damaging South Africa only minimally if at all.

They say use in this manner could demoralise the enemy and affect enemy tactics to a far greater degree than a mere rumour of Pretoria's possession of the bomb or even a threat to use the bomb.

They add that the most important factor in South Africa's decision on the development of nuclear weapons lies not within technology or economics but rather in international politics and psychology, specifically in the leadership's perception of danger.

"To be sure the ruling Afrikaners are uneasy, and while they point to a number of innovations in race relations at home, what appears so staggering to them is minor to the blacks and Asians.

"Unable to bridge the gap between the outer reaches of Afrikaner adjustment and the minimal bounds of black demands, South Africa seems destined for perpetual troubles."

Dr Adelman and Gen Knight strike a note of despair when they say that given the poor human rights record across black and white Africa, the tumultuous history of South Africa and the ledger of black and white numbers, perhaps nothing could preserve the Afrikaner's identity, ensure their survival and yet provide justice.

"As the new American ambassador in Pretoria said last year: 'Thank God it's not our problem to solve'."

They say the appalling thought that there may be no sensible, just and durable solution is dawning on more and more observers of the South African scene.

They add: "This does not bode well either for the peace and stability of the African continent or for the cause of curbing nuclear proliferation around the world."

It is against this background they suggest their seven measures to discourage South Africa from testing or possessing N-weapons.

They note that "unfortunately" such issues as nuclear proliferation and the future of South Africa are largely outside Washington's control, though steps taken by the US government can and do influence various decisions in South Africa.

They add: "Less fortunate still those matters might well prove intractable.

"How to prevent nuclear proliferation and how to deal with South Africa are baffling questions. Together, the two problems become even more perplexing."

THE ARGUS, 30/4/80

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Guideline on fuel figures is lauded

Argus Correspondent

JOHANNESBURG. — Consumer experts have hailed the new SA Bureau of Standards specification for fuel consumption as a step toward realism in advertised car consumption figures.

The specification, which is not compulsory, will be published in May.

It will make provision for three fuel consumption figures, which advertisers would have to publish, giving consumption at 60 km/h 90 km/h and the 'urban cycle' which would reflect stop-start driving conditions.

The SA Consumer Co-ordinating Consumer Council is so concerned with the current misleading advertised fuel consumption claims that they have warned they will press for the specification to be compulsory if manufacturers and motoring media do not use it.

Mr Mike Hawkins of the Consumer Council said the average consumer 'doesn't come near the average fuel figures claimed'.

'Two magazines who give fuel consumption figures have said editorially that for overall use motorists should add 30 percent if they're trying to work out costs.'

He had discovered that some were even averaging out tank ranges. 'The test for example, would be say, 70 km/h for two kilometres. The advertiser then multiplies this with the tank range and comes up with a staggering — but inaccurate — figure.'

There were other anomalies with present testing methods. 'A small car with good consumption at 80 km/h doesn't always do as well in heavy traffic, whereas the larger car with poor consumption at a steady 80 km/h may do much better.'

Mr Hawkins said 80 percent of cars bought were on the Reef and most owners were urban city dwellers, driving under stop-start conditions.