

Confidential filing

North West Dome
Gas Field

QATAR

APRIL 1981

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
29-4-81							
8-5-81							
9-6-81							
12-6-81							
22-6-81							
25-6-81							
<p>PREM 19/575</p>							



J Anson Esq, CB
British Embassy
Washington
U S A.

Qatar
BRITISH EMBASSY
DOHA QATAR

25 June 1981

QATAR NORTH FIELD GAS: ROLE OF WORLD BANK

Lankester's letter to you of 3 June has prompted us to make further enquiries here about the role of the Bank in Qatar.

2. As is generally known, the Qataris invited the Bank to come and help them resolve the question of how to proceed with the development of the North Field gas. There was initially a local group who favoured retaining the gas for domestic use only, and it appears that the debate between them and those who favoured exporting it became quite emotional at one stage. It has, however, now been definitely decided to go ahead with the construction of an LNG plant as the first phase of development, a decision which the Bank apparently recommended. This success for those who advocated export has caused them to lose sight of any further recommendations which the Bank may have proposed, with the result that there is no programme for any other industrial development at present. Meanwhile, according to a senior adviser in the Ministry of Finance and Petroleum, having helped to start Qatar on the way to becoming gas exporters, the Bank have no further role here at present.

C T Brant
HM Ambassador.

ccs: T P Lankester, 10 Downing St.
F Richards, FCO.
J West, Dept of Energy.
C B Benjamin, PEPD, DOT.
P W Heap, ESSD.

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Qatar



~~UNITED KINGDOM TREASURY AND SUPPLY DELEGATION~~

BRITISH EMBASSY
WASHINGTON, D. C. 20008

T.P. Lankester Esq
Private Secretary
10, Downing Street
London, England

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June 22, 1981
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P.C.
n
27/1

Dear Tim,

QATAR: NORTH WEST DOME GAS FIELD

Thank you for your letter of June 3.

2. We have spoken again to Bank staff, who were able to bring us up to date on where matters now stood. They have now completed their report, and have submitted it to the Qatar Government. It is not clear at this stage whether the Bank's role has now finished, or whether they will be asked to give further assistance--for example, by helping to evaluate any bids which may arise as a result of the Qataris' decision.

3. The decision is now entirely a matter for the Qatar Government; and the Bank (quite properly, as you recognised in your letter) did not feel able to tell us what recommendations they had made. In seeking advice from the Bank the Qatar Government would naturally expect it to be confidential. Staff members must be, and must seem to be, absolutely even-handed in the information they pass on to Executive Directors' offices. If they were not--particularly where future contracts are involved--they would indeed jeopardise their service with the Bank.

4. Within this constraint, the staff were as helpful as they could be. They suggested that the Qataris might decide to go for a "mix" (that is to say, using some of the gas as straight energy, and some of it for conversion to other products), and that there were three documents well worth reading--an article by Ali Jaidah (Managing Director of the Qatar General Petroleum Corporation), which appears in Issues in Development: The Arab Gulf States, published by M.D. Research and Services Limited and edited by May Ziwar-Daftari; an interview with Jaidah reported in page vi of the Financial Times' Supplement on Qatar, dated February 16, 1981; and some extracts from recent Middle East Economic Digests. BP are no doubt familiar with all these documents, but might do well to give them another look. (Copies are enclosed to yourself and Julian West.)

5. Two senior officials of BP (Charles Nicholson, Vice President, BP North American, and John Mitchell, Head of the BP Policy Review Unit) called at this office at the end of April, though not specifically to discuss Qatar, and they suggested that they might be passing through

/again in June.

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again in June. Although, here again, Bank staff would not be able to give them privileged information, we could try to include, in any programme we set up for them, a meeting with the department that deals inter alia with Qatar. Most importantly, BP should be pursuing this in Qatar themselves-- as no doubt they are. As I said in my last letter, the Qataris intend to keep the future developments of the field very firmly in their own hands. Companies will stand the best chance of securing contracts by persuading the Qataris that they can provide the services which the Qataris think they need.

6. I am copying this letter to the recipients of yours and to David Hancock at the Treasury.

Yours ever,

John Anson

John Anson

cc: Mr. D.J.S. Hancock (HMT)
Mr. F. Richards (FCO)
Mr. J. West (Dept. of Energy)
Mr. C.B. Benjamin (DOT)
Chancery, Doha

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R VI

Managing huge reserves

or purchaser. It has been careful to spread its crude contracts around, not least because of the opportunities this provides for maximising prices.

Equally, it is almost certain to ensure that several countries are involved in the gas development work. As Mr. Ali Jaidah put it: "We are looking to each company that is interested to tell us what they can do best."

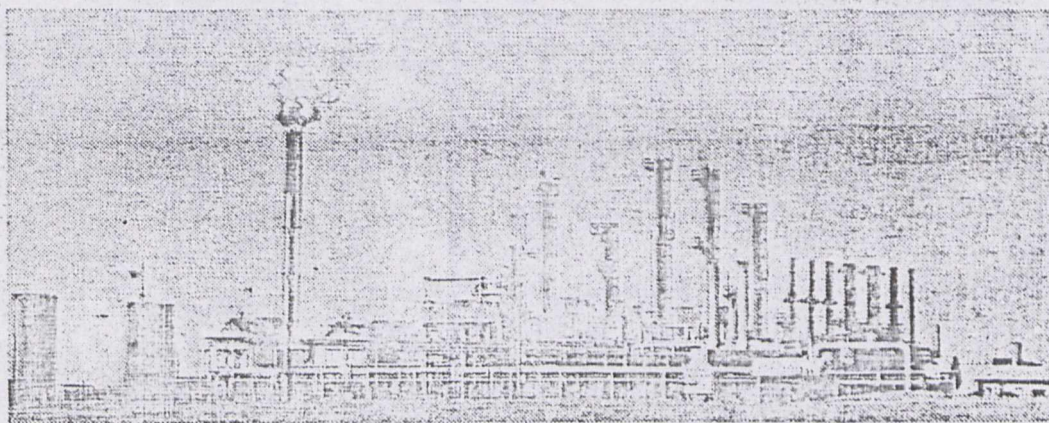
However, while probably ruling out the U.S. as a large purchaser of gas "because they will not be willing to pay our prices," Mr. Jaidah admits being impressed by America's design achievements, just as he has been impressed by Japanese construction methods.

The issue of price is one that is greatly occupying Mr. Jaidah and also points to close Japanese involvement. He admits that there is little point in approaching markets until Qatar has formulated proposals and to this end Mr. Jaidah would like to arrive at some scheme which cuts through what he describes as the present "irrationality" of gas pricing.

Efforts

Undoubtedly he is watching current Algerian efforts to achieve prices for its gas exports that are at least equivalent to the thermal values of crude oil. However, because of the substantial capital expenditure involved for both producers and purchasers in plant and transport, there inevitably is little room for a spot market and a far greater tendency to aim for much longer-term contracts. Equally, no one producer or purchaser is likely to find the same applicable costs in all markets, another factor arguing against the establishment of a more universally accepted gas price.

Thus with such clear differences already between, for example, the American and Japanese markets, it makes much more sense for Qatar to make its decisions early on. As Japan is almost totally reliant on imported energy and is already paying much more for its gas



Terry Kirk

The petrol refinery at the Umm Said industrial complex. Because of the associated gas which is pumped to Umm Said, there is pressure to maintain oil production levels until the North West Dome's gas reserves are tapped.

than either the U.S. or much of Western Europe, there should be little doubt with whom Qatar will be bargaining.

But Qatar also has to decide on timing. Although the next five years will see a decline in the volume of its oil exports, the anticipated further increases in prices should ensure a healthy cash flow at least sufficient to maintain its current development programme. Domestic energy requirements rather than revenue is the issue that will prove decisive and everything points to North West Dome gas supplies coming ashore in about four years and exports beginning a year or two after that and certainly well before the end of the decade.

Weight is added to this argument by Qatar's desire to conserve its onshore Khuff unassociated gas, which is having to be used to meet current requirements, and by the drop in the output of associated gas once oil production declines.

Qatar has been made more sharply aware of the necessity for maintaining a gas reserve on shore by the difficulties it has run into during the past 15 months in bringing associated gas from its offshore oil fields to Umm Said. The gas was first pumped in December 1978

but since then has scarcely maintained a continuous month's production. Both the offshore and onshore pipelines developed serious difficulties even before they came into operation with corrosion believed to be the main problem.

Shortfall

There are hopes that the problems are about to be overcome but meanwhile the offshore associated gas is being flared, with the consequent loss of revenue to the country. As the associated gas from the onshore Dukhan oil field is already being fully utilised, the resultant shortfall has had to be made up by Khuff gas to the extent of about 85m cubic feet a day on top of normal supplies.

At the moment this is not a serious problem but because of the heavily increasing domestic demand, essentially from domestic users but also from industry, there seems little alternative to further depletion of the Khuff reserves unless the North West Dome is brought on stream.

If this does not happen then it is arguable that Qatar's domestic development plans will

suffer and it is certain that by the mid-1990s production of Khuff gas will begin to decline, leaving the country with a much reduced margin of safety if ever anything untoward occurred to the North West Dome.

The disaster in 1977 when a propane tank split down the middle at the NGL-1 plant at Umm Said is an ever-present reminder of the highly-volatile nature of the liquids that are being handled. Although the plant has recently been brought back on stream, studies to establish what caused the blast continue.

Qatar's industrial planners are also anxious to know the timetable envisaged by OQPC for the development of the North West Dome because on that rests their own plans for expanding existing plants and the possible introduction of new industries such as the mooted aluminium smelter. According to Qatar's development philosophy, industry is as important as hydrocarbons. "While oil and gas are the source of revenue, it is industry which is the source of social development," one senior official said.

Roger Matthews

QATAR

Turning on the gas at North West Dome

RAS LAFFAN, the northeastern-most point of Qatar, is remote and uninhabited. It is also the nearest onshore point to the massive North West Dome gas field. Only 12 kilometres out in the Gulf an exploration well is being tested which could show the offshore field's reserves to be bigger than present estimates. There is even the chance that the boundaries of the field — already claimed to be one of the six largest in the world — will extend to the mainland.

The tests are to be completed in four weeks by West Germany's Wintershall. Whatever the results, change for Ras Laffan is almost inevitable.

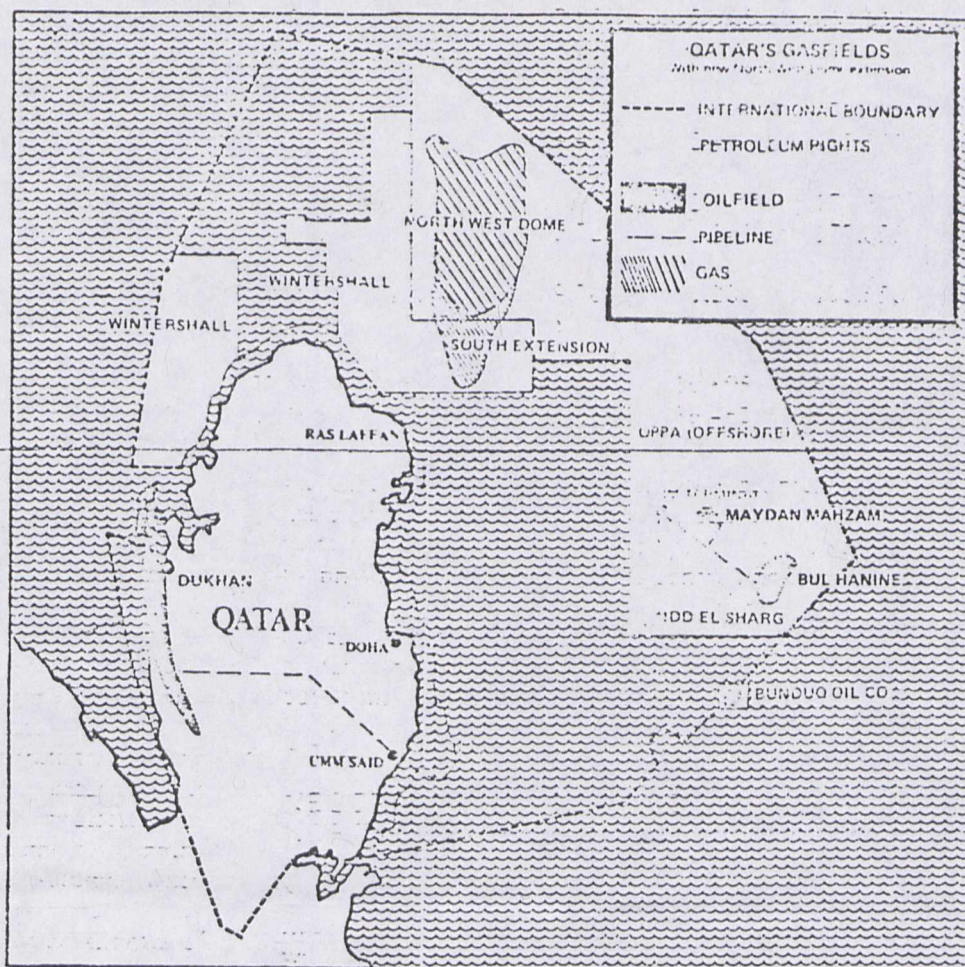
After years of stalling, the government has finally given its blessing for the development of the North West Dome, discovered in 1974. Ras Laffan has been suggested as the site of a \$2,000-million liquefied natural gas (LNG) plant. A further \$500 million would go on other onshore facilities and about \$1,500 million would be needed for drilling and production (MEED 30:1:81).

At least four companies, all from the US, visited Doha in late December to hear Qatar's proposals for the LNG plant and an invitation to prepare bids for its construction. The companies — Bechtel Corporation, Fluor Corporation, The Ralph M Parsons Company and The M W Kellogg Company (formerly Pullman Kellogg) — all stress that talks are at a "premature" stage.

The state oil company, Qatar General Petroleum Corporation (QGPC), is also having talks with several oil companies about forming a joint venture to develop the field. The foreign partner would take a share of about 20 per cent in the venture and would help with development costs. The companies named so far are: Mobil Corporation and Exxon Corporation, both of the US, the Royal Dutch/Shell Group, British Petroleum, Compagnie Francaise des Petroles (CFP-Total) and Wintershall.

QGPC's managing director, Ali Jaqah, says the immediate priority is to produce gas for local use — at the Umm Said industrial zone, and at the power and desalination plants near Doha, for example. A consultant for the work is almost certain to be appointed in 1981, but the earliest start-date for an LNG plant would be 1982.

The plant's capacity is likely to be between 700 million-1,000 million cubic feet a day (1,000 million cubic feet a day field). About three years ago, Shell — the operator for Qatar Petroleum Producing Authority



(Offshore — QPPA) which discovered the field — proposed building a 750 million-cfd plant in joint venture with Japan's Mitsubishi Corporation. In 1980, a plan for a 1,000 million-cfd plant was put forward by the Wintershall consortium, which includes Veba Oel and Deutsche Schachtbau, both of West Germany; Koch Oil of the US, and Gulfstream Resources Canada (MEED 5:9:80). A 1,000 million-cfd plant would need a fleet of about nine LNG tankers, each costing some \$150 million.

At a recent energy conference in Doha, US consultant Roy M. Huffington said a 720 million-cfd plant with three liquefaction trains (processing units) would require about 5 million million cubic feet of gas to support a 20-year sales term. Income from such a plant would be about \$500 million a year.

The North West Dome's estimated reserves now stand at about 150 million million cubic feet. About 75-80 per cent of the reserves, or gas-in-place, is expected to be recoverable.

The North West Dome field also has reserves of condensates — natural gas liquids (NGL) sometimes found in

association with natural gas and comparable to a high-quality crude oil. Condensates are easier and cheaper to process than LNG and there are already two NGL plants at Umm Said. A survey done for the Wintershall group suggests that the field has more than 2,000 million barrels of condensates.

It is ironic that the dramatic increase in LNG prices in the past two years — for which Qatar has been campaigning — may result in a drop in demand. LNG is fast losing its attraction as a cheap alternative to oil which is, of course, far safer to use.

"The decision to go ahead with the North West Dome development must have been both difficult and inevitable," one oil executive says. "Difficult, because of the enormous social implications: the tiny national population is already swamped by foreign workers and many more will be needed for the gas scheme. And inevitable because there is only enough oil left for about 22 years and the government has to maintain a steady economic growth for its citizens."

MICHAEL PETRIE-RITCHIE

Customs Receipts by Port of Entry in 1980
with Comparative Figures for 1979
(In LL '000s)

		Beirut Port	Beirut Int'l. Airport	Junieh	Tripoli	Masna'a	Saida	Total
First Quarter	1979	32,400	33,600	12,700	44,100	7,900	3,555	134,255
	1980	111,085	36,171	2,057	14,141	8,212	956	172,626
Second Quarter	1979	81,400	39,500	8,200	34,000	11,600	3,890	178,590
	1980	124,465	34,609	1,805	14,549	9,438	2,489	187,357
Third Quarter	1979	96,900	33,600	3,410	23,300	11,010	2,160	170,380
	1980	112,156	35,265	1,202	16,421	10,720	1,265	177,033
Fourth Quarter	1979	119,900	45,120	3,230	17,500	9,700	1,200	196,650
	1980	88,183	31,861	973	15,323	8,091	888	145,319
Total	1979	330,600	151,820	27,540	118,900	40,210	10,805	679,875
	1980	435,889	137,907	6,038	60,435	36,435	36,462	682,336

year before, a 49.2 per cent drop; the main southern port at Saida fared no better with a 46.3 per cent drop in customs revenue, which last year stood at LL 5.8 million against LL 10.8 million in 1979. The port at Junieh saw its excise income drop by a dramatic 81.1 per cent to LL 5.4 million from LL 28.9 million. Finally, the overland entry point at Masina's on the Syro-Lebanese border earned LL 37.4 million in 1980, against LL 40.7 million in 1979, an 8 per cent drop.

According to some reports in Beirut, tax evasion from the legal points of entry in Lebanon entails greater losses to the state than the illegal ports. Such assessments point to the actual growth in the volume of shipping in legal ports, especially during the autumn, when because of rougher seas illegal ports are unable to receive vessels as easily as in the more clement months of the year.

The loss in customs revenue is the more disturbing since new legislation was enacted last year raising many of the duty charges on imported goods: even supposing the volume of imports had stayed unchanged since 1979 — which was not the case — the state should have received more in revenue from excise in 1980 than it actually did. Informed sources in the Lebanese capital point to two additional factors which have arisen in the last year to explain this anomolous state of affairs.

Apart from the appearance of illegal ports several years ago and the frequent tax evasion at legal points of entry, more recent phenomena have been the alleged exaction of protection money by militias from customs officials and clearing agents at legal ports, and the reported take-over of one of the five berths of the Beirut port by rightwing militiamen. According to these reports, the Beirut port authority has been unable to regain control of the fifth berth, while customs officials have threatened to go on strike if no adequate means are found to protect them from the exactions of the private militias.

One of the consequences of these demands for protection money by the various militia groups which have access to ports, has been requests by clearing agents for additional payments from their clients, in order to

meet the exactions. This, according to local press reports, has prompted some importers to bring their merchandise in through illegal ports, paying the lower dues charged by private military organisations controlling them, rather than pay the ordinary excise at legal ports, plus what is basically a subsidy to clearing agents who have to meet demands for protection money. As these reports point out, it may be illegal, but it is certainly cheaper.

QATAR

NEGOTIATIONS ARE UNDER WAY ON NORTH WEST GAS DOME JOINT VENTURES

Negotiations on possible joint ventures to develop Qatar's huge North West Dome offshore gas field are being held with several foreign firms already operating in Qatar, it was announced in Doha last week. Dr Ali Mohammed Jaidah, Managing Director of the Qatar General Petroleum Company, said feasibility studies for development of the dome have been concluded and that total investment for the project might be as high as \$4 billion, a figure that some observers believe is on the low side. Dr Jaidah, a former Secretary General of OPEC, said the costs of drilling, production, pipelines and other upstream activities were estimated at about \$1.5 billion and a further \$2 billion would be needed for a gas liquefaction plant and other onshore facilities. Dr Jaidah did not, however, mention the cost of LNG tankers needed to ship the gas to foreign markets. This, observers believe, could add as much as \$3 billion to the development bill.

Dr Jaidah said eventual foreign partners in the venture would be allowed a 20 per cent participation in return for their share of development costs. Late last year, a West German consortium headed by the Wintershall oil company stated that it had put forward a \$4.5 billion development scheme and Qatar has also held talks with Royal Dutch Shell (*An-Nahar Arab Report & MEMO*, December 8, 1980). About 20 per cent of the gas field lies in a concession held by Wintershall and the remainder is in an area where Shell is the operating company. French, American and Japanese firms have also expressed keen interest in developing the field.

Qatar, as this newsletter has stressed in the past, has adopted a cautious approach to development of the North West Dome, believed to be one of the world's largest fields, with reserves of more than 200 trillion cubic feet of gas. Even if a firm decision has now been taken to go ahead with development in the near future, it would seem unlikely that this policy of careful thought on the best way to go about the task will be abandoned.

One determining factor may be Qatar's own growing need for gas to provide fuel and feedstock for its steel, fertiliser and petrochemical industries as well as for electric power generation and water desalination. It is believed that Qatar will begin to run short of gas from other sources in the late 1980s and would need to tap the North West Dome for additional supplies to meet domestic demand.

The *Associated Press* quoted oil industry sources in Kuwait as saying that a feasibility study on the gas development project had been completed and that a techno-economic study would be ready by the end of this month.

Dr Jaidah dropped several hints as to Qatar's future policies in an interview with the *Daily Gulf Times*. "We have started by completing the feasibility study and requesting offers from potential partners and consultants," Dr Jaidah said. "We are identifying basic policies and concepts and talking on joint operations and management. Our target is to deliver gas onshore for internal consumption and we hope to begin exports in a year or two."

Dr Jaidah said Qatar wanted to reduce its reliance on sales of crude oil. But he added that Qatar "does not intend to replace oil with gas as the main source of revenue — at least not in the initial stage. In the early stage we will export gas as a source of energy, but later we hope to utilise it for downstream petrochemical and other related activities."

SAUDI ARABIA

NEW TALKS ON WEST GERMAN LOANS

Saudi Arabia, which last year provided West Germany with more than a quarter of its total foreign credit, last week began talks with the Bonn government on its financial requirements to cover budget and current accounts deficits in 1981.

No precise figures are yet available, but the West German government has stated that it intends to pursue its policy of foreign borrowing, which brought in the equivalent of DM 20.6 billion (\$10.6 billion) in 1980. That total included DM 6 billion (\$3.1 billion) borrowed directly from the Saudi Arabian Monetary Agency at a little less than 10 per cent annual interest (*An-Nahar Arab Report & MEMO*, March 31, 1980).

Bonn decided to seek funds from Saudi Arabia and other OPEC countries after running up a balance of payments deficit — the first in 15 years — amounting to DM 9 billion (\$4.6 billion) in 1979. At the time the credit from Saudi Arabia was negotiated, Bonn was forecasting a balance of payments deficit of about DM 20 billion (\$10.2 billion) for the year; but by the end of September, West Germany's cumulative nine-months deficit had already exceeded DM 21 billion (\$10.8 billion) of which Saudi Arabia had provided DM 10 billion (\$5.1 billion).

Saudi Arabia alone. The final figure for 1980 was thought to be close to DM 30 billion (\$15.4 billion).

Officials in Bonn recently said that the 1981 deficit is likely to be about DM 22 billion (\$11.3 billion).

The decision to borrow was taken in order to protect West Germany's reserves, which dropped from DM 91 billion (\$47 billion) to DM 79 billion (\$40.5 billion) in the first nine weeks of last year alone.

Last week's talks in Riyadh between Saudi officials and the Secretary of State in the West German Finance Ministry, Horst Schulmann, followed reports that West Germany might be ready to reverse its policy over arms sales and export Leopard 2 tanks and other arms to Saudi Arabia.

It is understood that Mr Schulmann's talks covered a wide range of bilateral and international questions including world monetary problems, but officials in Bonn denied press reports that a comprehensive agreement was being negotiated with Saudi Arabia. These reports had indicated that the arms sales would be offset by substantial purchases and investments by Saudi Arabia in West Germany.

A spokesman at first described the reports as "inaccurate" and said that Bonn would only seriously consider selling arms if it received a formal request from the Saudis. But it was subsequently confirmed that Chancellor Schmidt and his cabinet discussed the possibility of exporting the tanks.

Restrictive guidelines not an obstacle

Guidelines drawn up by the government in 1971 restrict the sale of West German arms to NATO countries and five other West European nations plus Japan and Australia. Exceptions may be made for other states, provided that they are not members of the Warsaw Pact or in areas of "tension." Final user clauses must be written into contracts. These guidelines supplement the 1961 Weapons Export Law, which forbids the sale of arms if West German interests are likely to be injured, or if the arms are to be used in imminent conflict.

Foreign Minister Hans-Dietrich Genscher is on record as saying that Saudi Arabia is "not in an area of tension" — a remark which is likely to be challenged by left-wing members of Mr Schmidt's Social Democratic Party and by pro-Israeli supporters of the ruling coalition.

Although West Germany's restrictions on arms exports are stricter than those imposed by other West European countries, there are significant precedents for making exceptions to the 1971 guidelines. According to official figures, about 40 per cent of the DM 5.93 billion (\$3.04 billion) worth of arms sold abroad between 1975 and 1979 went to non-NATO members. These sales, moreover, include some to highly controversial countries such as Chile and Argentina, both of which have been permitted to buy the cheap and small, though highly versatile and effective U-209 submarine.

What is unusual about the deal which may take place with Saudi Arabia is the size of the order and the quality of the merchandise. No firm details have been reported, but diplomats in Bonn have been quoted as mentioning a figure of 300 tanks, worth about DM 5 billion (\$2.6 billion), that is, almost as much as West

Commenting on the creation of the new Secretariat, the Libyan News Agency said that it will concern itself with atomic energy for peaceful purposes and revealed that an advanced center for atomic research has been established for that purpose.

6. Japan's Kobe Steel Awarded \$770-Million Contract for Misurata Iron and Steel Complex: Japan's Kobe Steel, together with Marubeni Corporation, has been awarded a 160-billion yen (\$770-million) contract by the Libyan General Company for Iron and Steel Projects (GCISP) for the construction of two rolling steel mills with a capacity of 400,000 tons/year for Libya's huge iron and steel complex which is to be built at Misurata on the coast about 150 miles east of Tripoli. The complex, whose first phase is estimated to cost \$3.3 billion, will produce 1.2 million tons/year of steel by 1985.

In its first phase, the complex will utilize imported iron ore unloaded at a special port at Misurata, but future plans for the second phase envisage the mining of ore in southwest Libya near Sebha where deposits are estimated to be around 1,000 million tons. The ore will be transported to Misurata on a 922-km. railway, whose design was undertaken by the Yugoslav firm Projekt-Inzenjering.

The contract for the 550,000 ton/year direct reduction unit of the complex, worth \$430 million, was awarded to Japan's Kawasaki Heavy Industries and the Mexican firm Hojalata and Lamina, which designed the reduction process. Last November, the Turkish firm Sezai Turkez Feyzi Akkaya Insaat was awarded a LD 83.5-million (\$282-million) contract for the first phase of the port construction for the complex which will be able to handle 2,000 tons/hour of iron ore or 1,300 tons/hour of coal and is scheduled for completion in 3 1/2 years. The subcontractor for the dredging work is Royal Bos Kalis Westminster of the Netherlands (MEES, 24 November 1980).

7. Elf/Aquitaine Concludes New Exploration Deal in Libya: France's majority state-owned group Elf/Aquitaine has concluded a new production-sharing oil and gas exploration agreement with the Libyan Government covering some 15,800 sq. kms. The agreement, which has been under negotiation for over a year, is the first of a planned new series of exploration acreage awards in Libya.

The agreement between Libya and Elf/Aquitaine, which was signed on 2 December, covers five blocks - four onshore (three in the Sirte Basin and one in the Hamada plateau near the Tunisian border) and one in the western part of Libya's offshore waters adjoining acreage already held by Elf/Aquitaine. The onshore acreage totals 15,000 sq. kms. and the offshore area 800 sq. kms.

Like neighboring Algeria, Libya has made the continuation of crude oil purchase contracts conditional upon investment in exploration ventures in Libya.

✓ QATAR

8. Qatar's Proven Gas Reserves Estimated Between 200-300 Trillion Cubic Feet: In a statement to the press published on 1 January, the Managing Director of the Qatar General Petroleum Corporation (QGPC), Mr. Ali Jaidah, said that Qatar's proven gas reserves are now estimated at between 200 and 300 trillion cubic feet (compared to the previous estimate of 100 trillion cu. ft.), and that the government is currently conducting a feasibility study on the utilization of the huge gas reserves of the offshore North-West Dome gas field.

As Mr. Jaidah also said that the government had commissioned another study on the construction of a \$3-billion liquefied natural gas project. Qatar at present has two fully-integrated NGL plants (NGL-1 and NGL-2), which cost a total of \$737.7 million.

The two plants were put into operation at below their full producing capacity towards the end of November (MEES, 15 December). The full rated capacity of the two units is as follows:

- NGL-1: Propane, 740 t/day; butane 470 t/day; condensate, 370 t/day; methane-enriched gas, 140 million cu. ft. /day; and ethane-enriched gas, 24 million cu. ft. /day.
- NGL-2: Propane, 220 t/day; butane, 730 t/day; condensate, 73 tons/day; methane-enriched gas, 110 million cu. ft. /day; and ethane-enriched gas, 28 million cu. ft. /day.

Mr. Jaidah also disclosed that Qatar's proven oil reserves stand at 4 billion barrels at present.

ALGERIA

9. CFP in "Legal Void" in Algeria: With the expiry on 31 December 1980 of its five-year association pact with the Algerian national oil company Sonatrach, the Compagnie Francaise des Petroles (CFP) is now in a legal void in its oil relations with Algeria.

In earlier negotiations between Algeria and CFP two possible alternatives had been envisaged:

- Either a three-year prolongation of the association arrangement, under which CFP's access to Algerian crude oil would have remained at the current level (around 11 million tons/year or 220,000 b/d) initially but would have declined gradually year by year. This option was, however, conditional upon a settlement of the gas price dispute between Algeria and Gaz de France.
- Or, failing a settlement of the gas price dispute, it was envisaged that the association/equity accord would be replaced by a purely commercial crude oil purchase deal for 3 million tons/year (60,000 b/d).

However, neither of these alternative deals had been finalized by the end of the year, which means that there is now no legal basis for CFP's involvement in the Algerian oil industry. Since negotiations between Algeria and France on the gas price problem are still deadlocked, it would seem that there is not much chance of a renewal of the Sonatrach-CFP association agreement unless some last-minute breakthrough changes the situation. This being so, an eventual conclusion of a commercial crude oil purchase deal would appear to be the most likely outcome. But any prolonged delay in settling the matter one way or another could lead to a crisis in Algerian-French relations.

The delay in finalizing a new arrangement with CFP is understood to be at least partly due to the debate on energy policy which is currently going on within Algeria's ruling FLN party (see item below).

For the time being, however, the lack of any legal framework for relations between Algeria and CFP is unlikely to have any practical consequences. Deliveries of Algerian crude were sharply curtailed during December owing to bad weather and have now been reduced by about 50% owing to damage to the Arzew oil and gas terminal at the end of the month. This means that there is a substantial backlog of the 1980 crude entitlement still due to CFP.

As well as the standstill with regard to CFP, France's other major oil group, Elf/Aquitaine, has also not yet been able to renew its 20,000-b/d crude purchase agreement with Algeria for 1981.

\$67.6 million rural development scheme in the Loukkos basin in the north (MEED 30.5:80). The government will provide \$24.7 million, the *Nationale de Credit Agricole* \$3.3 million and local farmers \$5.6 million. The World Bank loan is for 22 years at 8% per cent annual interest, with four years' grace.

o *Societe Anonyme Marocaine de l'Industrie du Raffinage (SAMIR)* produced 3 million tonnes of refined products from 3.2 million tonnes of crude oil in 1980. About 2.8 million tonnes of the refined products were sold on the local market. SAMIR has the capacity to refine 6.75 million tonnes of crude oil a year.

o Trade with the Soviet Union in phosphates and chemicals will total MD 2,000 million (\$463 million) in 1981, Commerce Minister Azzeddin Guessous says.

o *Honeywell Bull Maroc (HBM)* has about 35 per cent of the local market in information systems. HBM, a subsidiary of France's *CII Honeywell Bull*, was founded in 1950.

o The cost of living in Casablanca at the end of November 1980 was 10.4 per cent higher than at the end of December 1979, the Casablanca weekly *Cedies Informations* says. The cost of living in the rest of the country rose by 9.54 per cent in the same period.

o The Casablanca International Trade Fair is to be held from 29 April-16 May. Details from: Office des Foires & Expositions de Casablanca, 11 Rue Jules Mauran, Casablanca, telephone 260471, telex cfc 22093 m.

o Ambassador to Kuwait is Mohamed Naciri.

OMAN

Sohar gas line gets finance
A KD 3 million (\$11 million) loan from the Kuwait-based Arab Fund for Economic & Social Development will help to finance a gas pipeline to the copper smelting complex being built at Sohar (Oman, MEED Special Report, November 1980, page 21). The loan — the fund's second to Oman — is for 15 years at 6 per cent, with three years' grace.

The amount provides 28 per cent of the project's total cost, estimated at just above \$40 million. Kuwait and Abu Dhabi are also participating in the financing. The Sohar copper project is to start exporting metal in 1982. Reserves have a life of 11½-12 years, although more copper ore may be found.

Masirah work uses US materials

Companies linked with the government have been excluded from Defence Ministry projects in a \$210 million programme to be carried out by the US Army Corps of Engineers. The work — including upgrading facilities at the former UK Royal Air Force (RAF) base on Masirah island — is to be done using US supplied materials and equipment, MEED was told in Muscat. Four other contracts will be for a small runway at Khasab, in Musandam, and three military establishments at Masirah, Thumrait and Seeb.

IN BRIEF

o A Chinese technical delegation is visiting Muscat following Electricity & Water Minister Hamoud Abdullah al-Harthy's trip to China in May 1980. In an agreement made then, the return visit was planned to examine possible technical co-operation between China's government and the ministry. The delegation is led by a director of foreign relations who is also a hydraulic engineer. The Chinese team will stay until 14 January, and will be looking in particular at water supplies in the capital area.

o External corrosion has caused a leak in the main oil pipeline from Fahud. A split of about five feet was discovered 68 kilometres from Fahud, the largest oil field in the north. A sudden drop in pressure at the main pumping station was recorded, and an air and land search started immediately. The split was detected within an hour, and took 36 hours to repair. One day's oil production was deferred.

o The Petroleum & Mineral Resources Ministry is expected to give details of the oil concession to be released by *Petroleum Development Oman* — the main producing oil company — within a few days. It is likely that 10-15 companies will be invited to submit bids.

o The Central Bank of Oman's assets stand at RO 249.7 million (\$722.3 million), according to the latest issue of its quarterly bulletin. Savings with banks abroad rose from RO 121.9 million (\$352.6 million) at the end of 1979 to RO 206.5 million (\$597.3 million) in September 1980. Foreign reserves have fallen slightly, to RO 13.3 million (\$38.4 million). Currency issues in circulation total RO 97 million (\$280.6 million), compared with RO 79.8 million (\$230.8 million) at the end of 1979. A cost-of-living index based on consumer prices rose by 6 per cent between March and September 1980. A national inflation rate of 9 per cent a year has been assumed for the next five-year plan.

QATAR

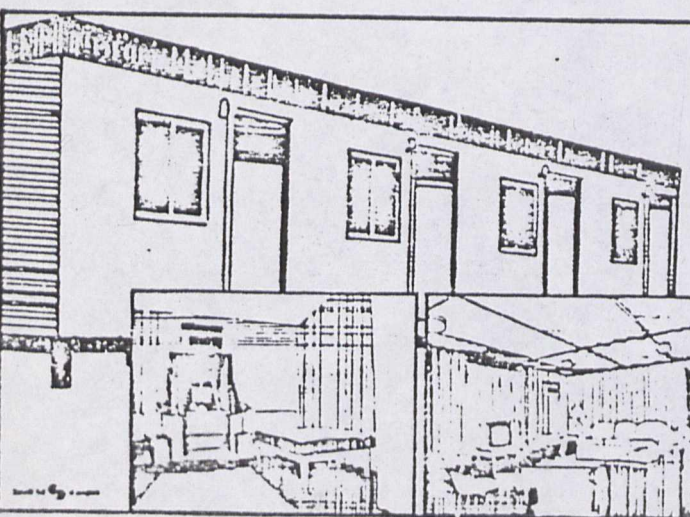
New study ordered for LNG scheme

The government has ordered a further study on the \$3,000 million plan for a liquefied natural gas (LNG) project using reserves from the North West Dome field.

The plan has been proposed by a West German-led consortium which holds a concession for about 30 per cent of the offshore field (MEED 5:9:80). No firm date has been fixed for the start of the project but LNG exports could start in six years, says Ali Jaidah, managing director of *Qatar General Petroleum Corporation (QGPC)*.

Official estimates of Qatar's total proven gas reserves have been substantially revised. Reserves are now put at 200 million million-300 million million cubic feet. This compares with the estimate one year ago of 31 million million cubic feet. The new estimates represent at least one twelfth of the known volume of recoverable gas reserves in the world, Jaidah says.

The majority of the reserves are in the North West Dome field, discovered in 1972. In May 1980 industry sources estimated the field to have 100 million million-120 million million cubic feet of recoverable reserves.



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Prospects for Gas Prices and the Development of the Natural Gas Industry in Qatar

Ali M. Jaidah

The potential for growth in the world's natural gas industry and market is immense, for as an industry it is still virtually in its infancy. Its major future significance in the world energy picture will be as a bridge in the transition from oil to other alternative forms of energy. Natural gas has only existed as an important component in the world energy balance over the past three decades, for until the 1950s its share was a negligible 10 per cent (except in the US, where it accounted for about 25 per cent of total energy consumption). Today gas accounts for 18 per cent of the world energy balance compared to 46 per cent for oil, 25 per cent for coal and 8 per cent for other energy forms.

Natural gas's potential share of the world energy balance will continue to grow in the future, if only because of its premium quality as a clean fuel. Huge proven and potential reserves to meet expected future demand already exist and are much more important than many people think. In terms of proven reserves, natural gas with 2,250 TCF (or 450 billion barrels oil equivalent) accounts for at least 8 per cent of total world proven reserves of fossil fuels. In terms of its potential or ultimate reserves, natural gas has even better prospects which are estimated as being equal to ultimate world oil reserves put at 10,000 TCF or 2,000 billion b.o.e. Deeper drilling is expected to result eventually in more gas discoveries. As it is, currently the ratio of proven to ultimate reserves is about 30 per cent for gas as against 60 per cent for oil. Carrying the comparison with oil further, proven remaining gas reserves have doubled over the last 10 years, while remaining oil reserves have only marginally increased. In addition, world oil reserves at present consumption rates are expected to last 25 years, while known gas reserves will last 45 years. In fact the natural gas life index will rise substantially

because gas discoveries have so far been largely accidental.

Interestingly, the geographical distribution of world gas reserves and consumption shows the same imbalance between supply and demand as with crude oil. For instance the USA, the world's major oil consumer, also consumes about 40 per cent of world marketed gas, yet it only accounts for 8 per cent of reserves. Japan imports all the gas it consumes, and Western Europe buys 13 per cent of marketed gas with reserves put at 6 per cent. In contrast OPEC's share of world reserves is estimated at 40 per cent while its share of consumption is only 6 per cent. In the USSR and other COMECON countries gas reserves seem capable of meeting growing demand.

When compared to crude oil, internationally traded gas is much smaller, accounting for only about 12 per cent of total consumption, about 6 TCF (about 3 million b/d of oil equivalent). While about 50 per cent of world crude oil output is traded internationally, about 80 per cent of the gas traded internationally is transported via pipeline, mostly in interregional transfers. For the rest, about 1.2 TCF (about 600,000 b/d oil equivalent) is moved in LNG form, exclusively for intercontinental transfers.

The world's top liquefied natural gas exporter is Algeria with 1.3 billion cubic feet/day (0.5 TCF/year) followed by Indonesia and Brunei, each with 0.75 billion cu. ft/day (0.25 TCF/year). The rest of the world gas trade is accounted for by exports from the Libyan Jamahiriya, Abu Dhabi and Alaska. At the receiving end, Japan holds top position, consuming about 1.8 billion cu. ft/day (0.6 TCF/year) from Brunei, Indonesia, Alaska and Abu Dhabi. Europe imports 1.1 billion cu. ft/day (0.4 TCF/year) from Algeria and the Libyan Jamahiriya, while US imports from Algeria amount to 0.6 billion cu. ft/day (0.2 TCF/year).

As already mentioned, there is obviously a tremendous growth potential in the international gas trade. Projections of the natural gas supply/demand outlook for the major consuming importing countries indicate a large gas supply deficit developing towards the end of this decade which will have to be met from massive intercontinental transfers. In Western Europe, added production from the North Sea is unlikely to be sufficient to counter a regional decline in production. The region is expected to need an extra 5 billion cu. ft/day of gas imports above the volume already contracted for, on the basis of a modest growth in consumption of 3 per cent a year (as against an historic growth rate of 20 per cent over the past 10 years). In the US output is also expected to decline, and even taking into account increased imports from Canada and Mexico, and large movements from Alaska, as well as some contribution from synthetic gas, there is no margin for growth in demand at current levels beyond 1985. So, unless significant imports are committed, supply limitations on gas consumption will be felt in the US by the

second half of this decade. In Japan MITI is already planning for massive LNG imports, increasing from the present 2 billion cu. ft./day to about 6 billion cu. ft./day by 1990.

Even if the gas share in the world energy balance remains at its present level of 18 per cent, world gas consumption, running now at 50 TCF, is likely to reach 80 TCF by 1990. Most of the increase in the US, Europe and Japan, will have to be met from imports. A large number of gas projects has been planned to meet this scenario, and if they materialize world trade could increase two-fold by 1985 and three-fold by 1990. The most important markets for new LNG supplies are likely to be Japan and developing countries. Pipeline exports are expected to continue to account for the highest share, moving from the present 5 TCF/year to about 11 TCF/year. But LNG imports are expected to increase even more sharply from the present level of 1.2 TCF/year to about 6 TCF/year by 1990.

Qatar now finds itself in a particularly favourable position to take advantage of the expected huge growth of the world natural gas trade and gain a significant share in the LNG area. Qatar's natural gas potential that has so far been discovered, is impressive by any standards. Gas in significant amounts was only discovered in the 1970s and so far has been put, at a conservative estimate, at 150 trillion cu. ft. The full extent of its gas reserves has yet to be determined, as at this stage only six gas exploratory wells have been sunk. But the extent of the gas reserves already determined, in terms of BTUs is almost six times the size of Qatar's oil reserves. Thus the prospects of LNG exports for Qatar present great attractions as a significant contribution towards its economic and general social development, as well as providing an important alternative source of revenue to its oil earnings.

The immense size of Qatar's gas potential will place the country well among the world's leaders in terms of gas reserves. Discovery of this huge gas resource comes at a most opportune moment, for its development will complement the limited nature of Qatar's oil resources. The present and future availability of this natural gas, along with the industrialisation processes involved in its development and utilization will open up new horizons for Qatar, particularly in the field of LNG exports. As already mentioned it will enable Qatar to widen and diversify its sources of revenues by making it far less dependent on its oil resources – an important consideration for a country with few other natural assets. A further attractive feature is that this gas will sustain the available energy resources for Qatar into the "after-the oil era". The implication in the medium term is that more of Qatari crude oil that would otherwise be locally consumed shall be available for export, and in the long run it will not depend on imported energy.

More indirect benefits will involve its use in expanding Qatar's water re-

sources and purification, particularly in the use of gas to power desalination projects. A spin-off from such water development may be to improve agricultural potentials in the peninsula. Natural gas by its nature, also opens up opportunities to develop a wide range of industrial projects, which are being currently carefully evaluated, whether as a valuable source of energy in energy intensive processes such as aluminium and steel smelting, or as a feedstock for the highly complex production processes of the petrochemical industry. In general, therefore, the existence and careful exploitation of these gas resources in the future can only enhance the potential economic development of Qatar.

A basic parameter for gas utilization in Qatar or elsewhere will of course depend in the first place on the cost of production because of the highly capital intensive nature of the industry needed to exploit the resource. Where Qatar and other Gulf countries are concerned there is also the lack of a nearby consuming market. Thus the transportation of gas as LNG will form a high proportion of the CIF price. Much, therefore, will depend on the price consumers will have to pay to make exploitation of this valuable form of energy feasible from the point of view of gas producers. Consumers of gas will have to come to accept a price mechanism that takes account of the particular attractive properties of natural gas.

So far the slow growth of the international LNG trade is partly explained by the hesitation in the past of some producing country governments to press ahead with export projects. One hindrance was that until very recently imported natural gas prices were set by consuming countries in reference to the price of residue or No. 6 fuel imported into these countries. Domestic gas prices in these consuming countries were also held down to levels frequently below alternative energy prices, as is the case still for some US gas. In addition, as already indicated, the high cost of LNG transportation (on average about five times that of oil on a BTU basis) and the high costs of LNG liquefaction plant and manufacture, along with low netted back value from exported gas, represent only a small fraction of the value derived from crude oil exports, and provide little incentive to producing governments in the Gulf area.

But recently prospects for the gas trade have undergone some improvement, through increased oil prices registered since last year and the growing awareness of an approaching energy crisis. This awareness was brought home to consuming countries through the temporary energy shortages some experienced last year in the wake of the Iranian Revolution. As a result some consuming countries now seem to be coming round to accepting the concept of direct parity between CIF gas prices and oil prices on a BTU basis.

But even this, though a significant advance for gas producers, still

means a netted back value for gas at the wellhead far below that derived from oil. For example, in the case of exports to Japan from a typical Gulf LNG project, based on a parity with an average landed price of \$30 per barrel of crude, it would result in a CIF value of LNG of about \$5.25 MMBTU. This would translate into a FOB value of about \$3.75 MMBTU and a netted back value at the wellhead anywhere between \$1.50 and \$2.50 MMBTU depending on the costs involved in the producing countries, for production, gathering, transportation and liquefaction of the gas. This range translates into a wellhead value of \$8 to \$14 per barrel of crude oil on a BTU basis.

If parity with crude oil is sought on a FOB rather than a CIF basis, the netted back value at the wellhead will be improved by the difference between transporting LNG and crude oil from the Gulf to Japan based on the above calculation. The difference would be about \$1.25 MMBTU, raising the wellhead value of gas to between a \$2.75 and \$3.75 MMBTU range, equivalent to \$15 to \$21 per barrel of crude oil on a BTU basis.

While this approach might give some producers sufficient incentives for investing in gas production, there are further considerations to bear in mind. Natural gas should not be viewed as in competition with crude oil, but rather with oil products such as Fuel No. 2, No. 6 and possibly with naphtha as a feedstock for petrochemical production. The pricing mechanism, therefore, should also take account of gas being a clean flexible premium fuel on parity with the "noble" uses such as those for which gas oil and naphtha are presently reserved.

In an energy market environment where supply, particularly of crude oil is unable to meet demand, the pricing of gas, as a supplementary source of energy, should possibly not be calculated on its replacement costs with oil. Such replacement value concepts, it can be argued, only work in a market when supply of gas is intended to compete with crude oil or its products in order to replace it. But in the reality demand for natural gas is to supplement the physical limitation of crude availability. From this perspective some gas producing countries may wish to achieve full parity at the wellhead between natural gas and crude oil on a direct BTU replacement basis.

Perhaps the only long-term reference that in the final analysis will satisfy everyone will be linking the price of natural gas with its only clear alternative, coal gasification or synthetic gas. This is the only alternative capable of providing abundant fuel of the same quality as natural gas, and it cannot be supplied at a cost below \$8 in the major consuming countries. On this comparison, the FOB yield for LNG would be about \$6.50 MMBTU with a wellhead value of \$5, which would bring it to the equivalent of revenues derived from oil at the wellhead.

On this basis, imported natural gas in the consuming countries would be priced well above the value of oil or any of its products. But there are good reasons why gas should be given such a preferential treatment. As already mentioned, it is a clean burning fuel with considerable environmental benefits and it can be used as a valuable feedstock in the petrochemical industry. For practical reasons it also has to be sold on a long-term contractual basis, which for consumers means a guaranteed availability for 20 years. In addition importing countries can expect considerable savings in foreign exchange, as a substantial portion of the CIF price could be returned in payments for plants, equipment, shipping and other transportation charges. Such a pricing approach would provide a real incentive for consuming countries to conserve gas for its "noble" uses and provide a further incentive for the development of more expensive alternative energy sources, particularly, synthetic gas production. In the long-term the adoption of such principles in the pricing mechanism is the only solution to providing the world community with enough energy to meet its growing requirements.

Qatar - April 1981

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Qatar BK

SUBJECT.



file

cc: FCO
CO

10 DOWNING STREET

See. Mansour etc.

From the Private Secretary

12 June 1981

As you know, Mr. Baxendell of Shell called on the Prime Minister this morning.

They had a general discussion about the present state of play in the world oil market. In the course of this, Mr. Baxendell commented that Shaikh Yamani was following a very dangerous course in trying to force the other OPEC producers to come into line with Saudi prices. By maintaining production at over 10 million barrels a day, the Saudis were making it impossible for other producers to dispose of their oil - except with large discounts or at spot prices which were now substantially below term prices. The Saudis were clearly determined to impose an orderly pricing structure amongst their fellow producers, and in principle they were right to do so; but it was likely to cause lasting resentment in OPEC, and it was causing considerable short-term difficulties for the oil companies. BNO, for example, were placed in a very difficult position: they would have little option but to reduce their prices further if they were not to be left with substantial amounts of oil on their hands.

The discussion then turned to Shell's pipeline problems in Qatar. The Prime Minister explained what she had been told in Doha - in particular, that the failure had been due to testing with sea water without proper inhibitors and biocides with the result that sulphide-reducing bacteria had corroded the steel. Mr. Baxendell replied on the lines of paragraphs 6 - 10 of your brief (your letter of 9 June). He emphasised that, while the Qatar General Petroleum Corporation had been proved right in their suspicion that the land section of the pipeline was severely damaged, their allegation that this had been caused by SRB had been proved wrong. Shell had always maintained that the pressure-testing with sea water had been properly carried out, and following extensive testing, they had established that SRB were not the cause of the corrosion. They had established, instead, that the failure was due to hydrogen-induced cracking. This was a new

/ phenomenon

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- 2 -

phenomenon in the Gulf, and nobody had known about it when the pipeline was laid in 1976. Soon after discovering that the pipe was damaged, Shell had signed an agreement (in January 1981) with the Qataris that they would replace the land section at their own expense; and this work would be undertaken in the next few months. The agreement also provided that the underwater pipe would be replaced by Shell if, as a result of testing, it was shown to be not up to accepted international standards. Testing on the underwater section was currently going on.

Mr. Baxendell said he believed that by these measures Shell were doing everything they could possibly be expected to do. Even though it was difficult to see how they had been at fault in laying the pipeline, their reputation had undoubtedly suffered in Qatar as a result of what had happened. (Their problems were made worse by the fact that, again without any proper foundation, Shell were held partly responsible in Qatar for the explosion and fire in the first NGL plant). He hoped that the action they were now taking on the pipeline would help to restore their reputation.

The Prime Minister said she was very glad to hear Shell's side of the story; she was particularly glad to note that they had agreed to replace the pipeline soon after the corrosion was discovered. She expressed the hope that Shell would be able to fully restore its position in the eyes of the Qataris.

I am sending a copy of this letter to Francis Richards (Foreign and Commonwealth Office) and David Wright (Cabinet Office).

I. P. LANKESTER

Dr. David Lumley,
Department of Energy

CONFIDENTIAL



Q akat

SECRETARY OF STATE FOR ENERGY
THAMES HOUSE SOUTH
MILLBANK LONDON SW1P 4QJ
TELEPHONE: 01-211 3000

Caroline Stephens
Private Secretary
10 Downing St.
Whitehall
LONDON SW1

9 June 1981

Dear Caroline

I enclose briefing prepared by this Department and the Department of Trade in conjunction with the FCO for the Prime Minister's private meeting with Mr P Baxendell of Shell on Friday morning.

Yours

David Lumley

DAVID LUMLEY



PRIME MINISTER'S MEETING WITH MR P BAXENDELL OF SHELL ON
FRIDAY 12 JUNE at 10.30 AM

QATAR NGL PLANT - PIPELINE PROBLEMS

Line to take

1 Ambassador had a duty to brief my party on what they might expect to hear about the NGL plant and pipelines. It would have been inadvisable to have allowed Mr Thatcher to tour plant without some knowledge of technical problems.

2 As I said in my reply to your offer to clarify the situation from the Shell point of view, I was never in any doubt that Shell would have in hand action to remedy the situation. Pleased, therefore, to have this opportunity to have a full account from Shell itself.

3 If satisfied by Shell's reassurances that problems are being solved and agreement reached on new operating procedures, thank Mr Baxendell for his clear description of difficulties in Qatar and acknowledge the constructive attitude which Shell have adopted towards the solution of these problems.



PRIME MINISTER'S MEETING WITH MR BAXENDEEL OF SHELL ON 12 JUNE
QATAR NGL PLANT - PIPELINE PROBLEMS

Background

1. Shell have a long and well established connection with the oil business in Qatar. They were the original concessionaires for the offshore fields, which they developed (300,000 b/d approx) and they discovered the North West Dome gas field.
2. The first NGL plant (NGL 1) was destroyed as the result of an explosion and fire in 1977. It is now the subject of claim by the plant's insurers against Shell and the contractors, Whessoe. It has never been established precisely what caused the accident and although Shell do not consider that their reputation was impaired (they were, as they point out, asked to rebuild NGL 1 and undertake NGL 2) the issue still arouses emotions in Qatar and it remains in the background to Shell's operations there.
3. During her visit to Qatar, the Prime Minister was informed of further difficulties which Shell had been encountering with two pipelines - a 24" gas line and a 12" gas liquids line - to the Umm Said plant, which was designed to use the associated gas from Qatar's three offshore oil fields. Shell acted as the consultants and designers of the pipelines for the NGL plant (NGL 2) with all the engineering and design work being undertaken in their offices in the Netherlands (although Shell have not sought to pass off responsibility on to their Dutch colleagues).
4. According to the reports which the Prime Minister received in Qatar, the major mistakes made in the design and testing of the two lines were that:
 - the steel specified for the 24" line was not suitable for the wet sour gas which the fields produce; this led to hydrogen induced cracking (HIC) which places very high stresses in the structure of the steel;
 - testing was done with seawater which in the area round Umm Said is rich in sulphide reducing bacteria (SRB) which attacks the oxygen in the steel;
 - ultra-sonic testing on the land sections of the lines had revealed symptoms of cracking. Sections of the line were cut out and sent to Manchester University (UMIST) for testing;
 - reports from UMIST showed that the line was unsafe for the passage of



high pressure gas. As a result of the lines being unservicable some 50% of Qatar's gas was shut in with a consequent loss of revenue.

5. Shell have contested the nature and seriousness of the damage to the lines and have claimed that the problem is in the process of being resolved. They have answered the criticism of their handling of the problems with the points in paras 6-10 below.

6. The offshore platforms and the fractionating plant at Umm Said are functioning correctly, as is the rebuilt NGL 1. It has been agreed that the 12" pipeline is satisfactory but that there is a corrosion problem with the 24" gas line. The pipeline was designed to take dry gas and since the associated gas produced from Qatar's offshore fields is wet and sour the platforms are equipped with glycol treatment units to dry the gas before it passes through the line. Before commissioning the pipeline, it was pressure tested with seawater with approved inhibitors and biocides.

7. Qatar General Petroleum Corporation (Onshore) which is responsible for NGL 1 and 2 and for the land sections of the lines (30 out of 120 kms), maintained that they had discovered SRB in the land section. Joint investigation and testing/^{at}SUMIST and by Shell in Amsterdam established that SRB were not the cause of the corrosion, but the extensive testing procedures did reveal HIC. It has not proved possible to identify what has led to HIC. For example, if the gas has not been dried properly, then the pipe, which was designed for dry gas operation, could have been contaminated by wet sour gas passing through it. The extensive testing programme has not led to any failure of the pipe which has been subjected to $1\frac{1}{2}$ times normal pressure.

8. Shell have agreed with QGPC Onshore that, unless, as a result of tests, there is joint agreement that it is unnecessary, then Shell will replace the 30 kms land section at their expense.

9. Shell do not consider that there need be any delay in starting to use the line, but much depends on Qatar's wishes. Improved platform operating procedures for the glycol units and new safeguards should prevent a recurrence of problems. Shell have emphasised that all decisions are referred to the Qatar side and further

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work is only carried out with the agreement of both sides.

10. Shell acknowledge that these difficulties have not enhanced their reputation, but at the same time they have pointed out that by co-operating in joint investigations and by undertaking remedial measures, they have shown that the company recognises its responsibilities. This should reflect to their credit and go at least some way towards fully restoring their image in Qatar.



QATAR: NORTH DOME GAS FIELD: CALL ON THE PRIME MINISTER BY
MR BAXENDELL, SENIOR MANAGING DIRECTOR, SHELL, ON 12 JUNE, 1981

Brief by Department of Trade

The Prime Minister will recall that the North Dome Gas Field (as it is now called) is among the largest gas resources in the world awaiting development. It is estimated that the earliest date by which it could be brought into production for domestic requirements is 1986 and that production for export could follow by the end of the 1980s. The enormous cost of developing the field - a figure of £5 billion is frequently mentioned - and the limited scope for industrial development in Qatar itself makes production for domestic purposes alone unlikely. Japan is thought to be the most likely market for the gas, although others, particularly including France and the Federal Republic of Germany, may also be potential customers. At the end of last year the Qataris invited a number of oil companies, Shell, BP, Wintershall (FRG), CFP (France) and a number of American contractors (Bechtel, Kellogg, Fluor and Parsons) to submit proposals for the development of the North Dome Field, including the establishment of an LNG plant.

2 At her meeting with the Amir in Qatar on 25 April the Prime Minister spoke of British industry's interest in participating in Qatar's industrial development, especially as a result of the development of the North Dome Gas Field. She commended the British oil industry's enormous experience in offshore development but, as a consequence of what she had learned on the spot about problems with gas pipelines for which Shell had been responsible as consultant, the Prime Minister concentrated on the contribution that BP could make to the development of Qatar's gas resources.

3 BP have since been informed of the support that the Prime Minister gave to their proposal during her visit to Qatar and have been understandably appreciative of it. At the same time, BP do not think they can do any more to further their interest pending



decisions by the Qatar Government. In particular, they see no scope yet for British suppliers and contractors (and banks, who are being particularly active at present in offering their services both to the Qataris and to UK companies). BP consider that it is premature to think about a visit by their Chairman to Qatar; this was an idea which HM Ambassador in Doha put to the Prime Minister during her visit.

4 The Qataris lack proper resources of their own to evaluate the proposals which they have received for the development of the Dome Field and have turned to the World Bank for advice, a step which the Prime Minister expressed approval of when talking to the Amir. It seems, however, that the Bank's involvement may be restricted to an evaluation of the studies for the development of the Dome Field which have been undertaken in the past. These include a very comprehensive study by Shell on Qatar's total energy requirements in the future.

5 Despite Shell's present troubles in Qatar over pipelines (and they acknowledge that these will not have done their reputation any good), their position in Qatar and world-wide performance in the development of large oil and gas resources means that it would be unwise to rule them out as possible participants in the development of the North Dome Field. BP believe that the Qataris will not want to commit themselves, for both commercial and political reasons, to a single oil company or contractor but will wish to parcel out the total project among those who have already been invited to submit proposals (and possibly others). If Shell were to come to occupy a key role in the development of the Dome Field we should want to look to them to assist British industry in trying to secure associated contracts. While therefore we have moved at this stage in the direction of BP as the "chosen instrument" for maximising British industry's effort in connection with the development of the Dome Field it would seem desirable not to rule out co-operation with Shell in case, at the end of the day, they turn out to do better.



6 A note of points to make is attached in case the Prime Minister's discussion with Mr Baxendell turns in the direction of the future development of the Dome Field and the resulting prospects for British industry.



QATAR: NORTH DOME GAS FIELD: CALL ON THE PRIME MINISTER BY
MR BAXENDELL, SENIOR MANAGING DIRECTOR, SHELL, ON 12 JUNE, 1981

POINTS TO MAKE

The Prime Minister might wish to say:

- (a) I told the Amir of Britain's interest in participating in Qatar's industrial development, particularly in connection with the opening up of the North Dome Gas Field;
- (b) In telling the Amir about the British oil industry's experience in offshore development I spoke up more particularly for BP since I had been told of Shell's unfortunate problems over the gas pipelines and judged that it would not have been in anyone's best interest to introduce Shell's name into the conversation.
- (c) I said nothing to the Amir about what I had heard of Shell's problems.
- (d) I hope that Shell's problems will not prejudice the interests of British industry as a whole or Shell itself in the development of the North Dome Gas Field or in Qatar's industrial development generally;
- (e) I should be interested to know how Shell see the prospects for the development of the Dome Field, including the possible timescale.

Canshine - Yes please
we were
Chase? - expecting it
yesterday.
Kay
9/6
cl. 9/6

NOTE FOR THE FILE

Brief for Mr. Baxendells
visit coming on Monday
8 June.

DSG 5/6/81

Shd be here by
4.30 today 9/6
RS

Handwritten notes at the top of the page, including the word "Ladies" and other illegible scribbles.

NOTE FOR THE

Handwritten word "Ladies" circled in black ink.

Faint, illegible text located below the circled word.

DRK 2/1/51

Faint, illegible text at the bottom of the page, possibly bleed-through from the reverse side.



RH

10 DOWNING STREET

From the Private Secretary

3 June, 1981

Thank you for your letter of 8 May.

The Prime Minister has seen your letter and has suggested that it would be valuable if you were to obtain further information about the work the Bank is doing for the Qataris. I take your point that the Qataris may already have decided how they intend to proceed. Certainly they will keep the decisions in their hands. But we received the impression in Qatar that they hoped the Bank would help them to sort out the mass of conflicting advice which they have received from interested parties. The Bank's role may therefore be crucial, and it would be extremely useful if you could obtain any information of the course their evaluation is taking and what their recommendations to the Qataris are likely to be.

If, for example, we can find out which of the various reports under study the Bank are likely to favour it could give British companies just the edge they need over their competitors and put them in a position to tailor their bids to match the Qataris requirements. The Bank may, quite properly, be cagey about this, but perhaps your relations are such that you could find something out.

I am copying this letter to Francis Richards (FCO), Julian West (Department of Energy), C B Benjamin (Department of Trade) and also to the Embassy at Doha.

J. P. LANKESTER

J Anson, Esq CB
British Embassy, Washington



Foreign and Commonwealth Office

London SW1A 2AH

Dear Tim,

1 June 1981

TL - my

hym

Qatar: North Dome Gas Field

1/5/81 + 8/5/81

TL

Please refer to your exchange of letters with John Anson in Washington about the work the World Bank is carrying out on Qatar's behalf in respect of the development of the North Dome gas field.

Lord Carrington believes we ought to be doing more to find out exactly what the World Bank is doing and what the findings of their evaluation are likely to be. He thinks that, given the great interest in the project shown by the Prime Minister during his recent visit to Qatar, Mrs Thatcher is likely to share this view. I wonder, therefore, if we should not return to the charge with John Anson on the lines of the enclosed draft.

Yours ever,

Francis Richards

(F N Richards)
Private Secretary

Tim Lankester Esq
10 Downing Street
LONDON SW1

DRAFT: minute/letter/teleletter/despatch/note

TYPE: Draft/Final 1+

FROM:

Reference

Mr T P Lankester

DEPARTMENT:

TEL. NO:

SECURITY CLASSIFICATION

TO:

Your Reference

Top Secret

Secret

Confidential

Restricted

Unclassified

J Anson Esq CB
British Embassy
Washington

Copies to:

Francis Richards Esq
FCO

Julian West Esq
Dept of Energy

C B Benjamin Esq
Dept of Trade

C T Brant Esq CVO
British Embassy Doha

PRIVACY MARKING

SUBJECT: North Dome Gas Field

.....In Confidence

CAVEAT.....

Thank you for your letter of 8 May.

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Enclosures—flag(s).....

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relations are such that you could find something out.

I am copying this letter to Francis Richards (FCO), Julian West (Dept of Energy) and C B Benjamin (DOT), and also to C T Brant Esq in the Embassy at Doha.

jfh

5/6

Mr. Baxendell
Shell

CF to [unclear]
JIS/S

14 May 1981

The Prime Minister is to see
Mr. Baxendell of Shell for a private meeting
on Friday 12 June at 1030 for half an hour.

Michael Alexander sent you copies of
correspondence between Mr. Baxendell and the
Prime Minister on 12 May and this letter is
to request a full brief to reach us by close
of play on Friday 5 June.

CS

Julian West, Esq.,
Department of Energy.

BK



10 DOWNING STREET

THE PRIME MINISTER

13 May 1981

Dear Mr. Baxendell,

Thank you for your letter of 7 May. I was indeed somewhat concerned about the difficulties which seem to have arisen with the gas pipelines in Qatar. However I was never in any doubt that Shell would have in hand action to remedy the situation.

I would like to talk all this over with you. My diary is very crowded at the moment but my office will be getting in touch to suggest a time.

Yours sincerely
Margaret Thatcher

P.B. Baxendell, Esq., CBE.



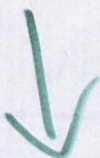
3

10 DOWNING STREET

PRIME MINISTER

I attach

- (a) a reply for your signature to Mr. Baxendell's letter about the trouble with the gas pipelines in Qatar; and
- (b) a letter which has just come in from the Department of Energy.



Am

This Stephens a.a.

Please fix a time - not

12 May 1981

his soon - +

at Dept of Energy know
in a day or two.

Am

File

jfh

12 May 1981

Thank you for your letter of 11 May about the North West Dome gas field. Further to our recent telephone conversation on this subject, I enclose copies of an exchange of correspondence between the Prime Minister and Mr. Baxendell. I will be getting in touch with you in due course to ask for a brief.

MODB ALEXANDER

Julian West, Esq.,
Department of Energy.



SECRETARY OF STATE FOR ENERGY

THAMES HOUSE SOUTH
MILLBANK LONDON SW1P 4QJ

TELEPHONE: 01-211 3000
01-211 6402

Michael Alexander
10 Downing Street
London SW1

11 May 1981

Dear Michael,

NORTH WEST DOME GAS FIELD

Thank you for your letter of 29 April pointing out that the Prime Minister was dismayed to learn about the difficulties which Shell have been encountering with two gas pipelines in Qatar. We were aware from earlier reports from the Post that Shell had been experiencing these problems as set out in the Ambassador's report to the Prime Minister. We understand that Shell have contested the severity of the problems and have made certain proposals to Qatar to remedy the situation. They have indicated that if the Qataris accept their suggestions, then the problems can be resolved satisfactorily. Shell did not regard the Qatar pipelines issue as one of their major concerns in the Gulf. That is why it was not covered in the Prime Minister's brief.

Mr Howell has noted HM Ambassador's advice that considerable advantage might be derived from a visit to Qatar by Sir David Steel and that the Prime Minister is inclined to agree. He has asked officials to examine this proposal urgently in consultation with other interested Departments, in particular the Department of Trade. He will report to the Prime Minister and will as requested keep her informed of other developments.

I am copying this letter to Francis Richards (FCO) Stuart Hampson (D/Trade) and David Wright (Cabinet Office) together with a copy of your letter.

Yours ever,

J D West

J D WEST
Private Secretary

CONFIDENTIAL

Qatar



UNITED KINGDOM TREASURY AND SUPPLY DELEGATION

BRITISH EMBASSY

WASHINGTON, D. C. 20008

T.P. Lankester Esq
Private Secretary
10 Downing Street
London SW1

Handwritten initials and signatures

May 8, 1981

Dear Tim,

QATAR--NORTH WEST DOME GAS FIELD

Handwritten initials and numbers

Thank you for your letter of May 1 about the Prime Minister's visit to Qatar and the role that BP might play in the development of the North West Dome gas field.

Following an enquiry from HM Ambassador in Qatar, we made enquiries of the World Bank staff about this last month and passed the information we obtained to the Ambassador and to the relevant Departments in London. We have now made some further enquiries and the staff have told us their understanding of the present position.

It appears that the idea of developing this field has been around since 1974; that a decision was taken at a very high level in Qatar in 1978/79 to go ahead with studies; and that studies were carried out by Shell International. These showed that the field was one of the six largest in the world, with reserves estimated at 2/300 billion cubic feet of gas.

The Qatar Government subsequently asked the World Bank to help them assess what should be done with the gas and, following a visit by a Bank mission to Qatar earlier this year for discussions, the Bank offered to carry out an evaluation. This would have researched the optimum way of using the gas, either as straight energy, or for conversion to ethylene or to other derivatives. It is now proposed, however, that the Bank's involvement should be restricted to an evaluation of the studies which have already been undertaken. The Bank staff have hinted to us that the reason for this is that the Qataris have already made up their minds how to proceed, and that the Bank was surprised at the speed with which the Qataris have come to a decision.

As a result of our contacts with them, the Bank will already be aware of HMG's interest in the development of this field. It would appear however that the Bank's role will be a very limited one and that decisions on how to proceed will be kept firmly in the hands of the Qataris. Our commercial interest in this project will therefore need to be pursued in Qatar, and I assume that HM Ambassador and BP will continue to pursue the matter through their contacts there so as to ensure that we have a full opportunity to bid for any contracts which are available.

/I am copying this

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- 2 -

I am copying this letter to HM Ambassador in Qatar, and to Francis Richards (Foreign & Commonwealth Office), Julian West (Department of Energy) and Christopher Benjamin (Department of Trade).

Yours ever,

John Anson

John Anson

cc: C.T. Brant Esq., CVO, HM Ambassador, Qatar
F.N. Richards Esq. (FCO)
J. West Esq (D of E)
C.B. Benjamin Esq (DoT)

CONFIDENTIAL

P. B. BAXENDELL, C.B.E.

TELEPHONE:
01-934 2772

SHELL CENTRE
LONDON
SE1 7NA

7th May, 1981.

The Rt. Hon. Margaret Thatcher, MP,
The Prime Minister,
10 Downing Street,
LONDON S.W.1.

Dear Prime Minister,

I was very concerned to learn from John Raisman that during your recent visit to Qatar, you received an account of Shell's involvement in the gas projects there which we believe may have been presented to your party in rather a one-sided manner and, as such, may be representative of an unsatisfactory rivalry that has existed between the respective onshore and the offshore operators for some time.

Certainly we have had technical problems in Qatar. However, we believe that these have not stemmed from any fundamental design defects, but rather from operational mishaps that were very regrettable but unfortunately can happen occasionally.

However, what is disappointing is that the efforts that we have made to correct any deficiencies rapidly and effectively do not appear to have been brought to your attention during your visit; and from what John Raisman relayed to me, it would seem that the impression you may have received of our technical competence was unsatisfactory.

This distresses me as I believe that our technical competence in operations all around the world is second to none, and has contributed substantially to this country's deservedly high reputation in petroleum technology. I would be very unhappy to think that you personally held a different view.

We would of course be very willing to discuss the situation with officials if you feel that clarification of our position is desirable.

Yours sincerely,

Peter Baxendell.

*I would prefer
to see Peter Baxendell
personally.
mb.*

*18/5
Prime Minister:
The Dept of Energy have all the
papers: would you like them to
get in touch with Mr Baxendell
(his final para refers).
Aunt*

①



10 DOWNING STREET

From the Private Secretary

1 May 1981

Qatar - North West Dome Gas Field

During the Prime Minister's brief visit to Qatar last week, there was some discussion of the North West Dome gas field, which is said to be the largest gas field in the world. At present, the Qataris are considering how it might be developed. In speaking to the Amir, the Prime Minister said that she believed BP could play a major role. The other British contender, Shell, is not really in the running because they are under a cloud in Qatar - because of recent problems with two gas pipelines and a gas separation unit for which they have been responsible.

We were told by our Ambassador that the Qataris have asked the Bank to carry out a study of the various options for the development of this field and related downstream activities. He said that he understood the Bank would not be making recommendations on the merits and demerits of the various companies who are interested in getting involved in the development of the field; but no doubt the recommendations will have some bearing on the bidding procedures which the Qataris adopt and the prospects of the individual companies. We were told that BP's main contender was likely to be CFP of France.

Since presumably there is no Bank financing involved in this study, I imagine that it is not something which would normally reach the Bank board. However, it is clearly of interest to us, and it would be helpful if you could find out about the scope of the study and give us any indication that you can get of what is likely to come out of it. Needless to say, an indication from you, in whatever form you thought appropriate, that HMG are following with close interest the development of the gas field, and in particular the prospects of British companies getting major contracts, would be useful.

I should mention, finally, that I spoke briefly about all this to Reiner Steckhan (Head of the Bank's European office in Paris) whom I met for lunch earlier this week. He took the point that we have an interest in the outcome of the study, and said he himself would make some enquiries when he visits Washington next week.

/I am sending

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I am sending a copy of this letter to Francis Richards (Foreign and Commonwealth Office) and Julian West (Department of Energy).

John Anson, Esq., CB.

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2H

BF



10 DOWNING STREET

From the Private Secretary

29 April 1981

North West Dome Gas Field

As you may be aware, the Prime Minister was dismayed to learn during her visit to Qatar of the difficulties that Shell have been encountering with two gas pipelines for which they have been responsible there. I enclose a copy of a memorandum which our Ambassador in Qatar prepared at the request of the Prime Minister. The Prime Minister would like to be kept in touch with this story as it unfolds.

As a consequence of what she learned about Shell, the Prime Minister, in speaking to the Amir of Qatar about British interest in the North West Dome gas field, stressed the part that BP could play. HM Ambassador believes considerable advantage might be derived from a visit to Qatar by Sir David Steel. The Prime Minister is inclined to agree. I should be grateful if you could follow this up.

I am sending a copy of this letter to Francis Richards (Foreign and Commonwealth Office).

M. O'D. B. ALEXANDER

Julian West, Esq.,
Department of Energy.

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Jul

CONFIDENTIAL



BRITISH EMBASSY
DOHA QATAR

SHELL AND THE NATURAL GAS PLANT, QATAR.

1. Background.

The facts are that:

(i) Shell have a long and honoured history in the oil business here. They were the original concessionaires for the offshore fields, which they developed (300,00 barrels a day, approximately); and they discovered the North West Dome gasfield.

(ii) However, they were the consultants and designers of the pipelines for the Natural Gas Liquids Plant, designed to make use of the associated gas from the three offshore oilfields. And they were the consultants and supervisory firm for the plant itself at Umm Said. All the engineering and design work was done in Shell's Dutch offices.

(iii) The major mistakes made in the design and testing of the two lines from the offshore fields (one 12" for the liquids, and one 24" for the gas) were that:

- the steel specified for the lines was not suitable for the wet sour gas which the fields produce; this has led to hydrogen induced cracking (HIC);

- testing was done with seawater, which in the area round Umm Said is rich in sulphide-reducing bacteria (SRB) which attacks the oxygen in the steel;

- the line was built in two sizes, between the onshore section (28 km) and the offshore (90 km).

(iv) the contractors who laid the seaward line were the Italian firm of SIPEM, working under Shell's direction: the steel came from Japan (Sumitomo)

(v) at the insistence of the Manager of the NGL Plant, Mr

/Gillatt



Gillatt, who had become suspicious about some of the aspects of the construction and testing of the line, (a more detailed account of this is attached), ultra-sonic testing was carried out on the land-line, and then, when these bore out his suspicions, sections of the line were cut out and sent to Manchester University metals unit (UMIST) for testing.

(vi) the report from UMIST showed conclusively that the line was unsafe for the passage of high-pressure gas; the liquids line had suffered HIC, and the gas line both that and sulphide stress corrosion. They firmly advised against use of the line for any other than a short period (six months at the most - and even that they would not guarantee).

(vii) Shell are already being taken to court for sub-rogation by the insurers (British) of the NGL Plant I, which suffered a split in one of the storage tanks in 1977, which caused an explosion and fire which destroyed the whole plant (It has now been rebuilt).

(viii) Shell are contesting the seriousness of the damage to the pipelines, though not the fact that they are suspect.

(All the foregoing was given to me in strict confidence by Mr Gillatt.)
Points to make.

In view of the contentious nature of the whole investigation, I recommend that the Prime Minister should go no farther than telling the Amir that ~~British expertise is second to none, around the world; that~~ we have now gained a formidable corpus of skill from our own North Sea operations; and that BP, for example, would be well-placed to undertake the development of the Dome, having already scored a world-scale success with their LNG plant in Abu Dhabi (Das Island).

C. T. Brant

C. T. BRANT

12 APR 1981

SHELL AND THE NATURAL GAS LIQUIDS PIPELINE FROM THE OFFSHORE FIELDS TO UMM SAID

1. I have had various discussions over the last week or so with Mr Arthur Gillatt, General Manager of the Qatar General Petroleum Corporation's Onshore Operations, about the major problem now emerging over the NGL pipeline, and the implications this has for Shell's reputation and standing in Qatar.
2. Mr Gillatt recalled that Shell were already at risk for compensation of \$52 million to the insurers of the first natural gas liquids plant (NGL 1), as a result of the explosion and fire there in April 1977. Apart from any liability accruing over the destruction of the plant itself, there is also a claim on the Qatar side of \$160 million, possibly, representing the consequential loss of production and hence profits. This figure may increase to as much as \$250 million according to assessments.
3. Mr Gillatt said that Shell now stood to incur liability for the sum of \$50-60 million, being the value of the NGL pipeline now found to be unusable, together with the consequential losses accruing from the prospective loss in production of the 18 months or so needed for the replacement of the line, during which period Qatar will be having to flare off as waste 40% of the offshore associated gas. Mr Gillatt speculated that Qatari disillusion with Shell over their performance here might have extended to oil companies generally.
4. Mr Gillatt recalled that the unsatisfactory state of the new gas pipeline began to be revealed in March and April of this year. It was then, on his insistence, that ultrasonic tests were undertaken on the pipeline in various places along the overland section (from Wakrah to Umm Said). These showed some alarming symptoms of cracking. On the basis of these tests, Mr Gillatt pressed for more definite tests to be undertaken on the pipeline, and in particular that sections should be sent back to the UK for analysis. Between July and September QGPC and Shell prevaricated and did nothing, protesting that it was unnecessary for such drastic surveys to be taken on a virtually new pipeline. Eventually therefore Mr Gillatt took his insistence to the point of cutting out sections with his own resources and on his own responsibility as the operator for the NGL plant. Ali Jaidah was furious. But sections of the piping were sent to Manchester University, the British Institute of Welding and to the Shell Facilities for Testing at Amsterdam.
5. The metallurgical tests undertaken by the Manchester University testing unit and the British Institute of Welding showed a horrifying situation. They reported that the inside of the pipeline was badly corroded, and there was evidence of potentially dangerous cracking of the steel itself. The Manchester University report, which Mr Gillatt showed me, advised against any use of the pipeline, even on a limited basis. This assessment was supported by photographs of the scaling on the inside of the pipe section, plus some grim-looking cracks discovered under microscope photography.

/6. Mr

6. Mr Gillatt explained that it seemed all too clear that the Shell engineering team undertaking the construction of the pipeline (based in Amsterdam) had in the first place specified the wrong type of steel for the line. They had installed mild steel, instead of pipeline for "wet sour gas service".

7. Secondly, they had built a line of two different diameters on the seaward and landward side of the line respectively. This made it impossible for any scouring etc. to be undertaken by the traditional "pigs", i.e. plastic plugs despatched through the line under gas pressure to clean or separate hydrocarbons of different types. Thirdly, and perhaps most damaging of all, Shell had filled the line with seawater to test it. Mr Gillatt said that the seawater at Umm Said was not only corrosive but was also high in "sulphate-reducing" bacteria content (perhaps due to the out-fall from the fertiliser plant?). These bacteria are most damaging to any form of steelwork, since the bacteria feeds on the SO₂ in the steel, and hence the oxygen content itself, making the steel corroded and brittle.

8. The upshot of all this was that Mr Gillatt, who had earlier this year been regarded as public nuisance No 1 as far as Ali Jaidah, Shell and the QGPC were concerned, has now turned out to be the Hero of the Hour. By insisting on the pipeline being tested, even at the risk of incurring substantial financial penalties, Mr Gillatt has ensured that the defects of the line have become known, and a second natural gas disaster - either at Umm Said or at any point along the pipeline between the offshore fields and the NGL plant - avoided.

9. I asked him how he had first been alerted to the dangers building up over the new pipeline. He told me that his suspicions had first been aroused over the construction of the new storage tank at Umm Said. The Shell team were supervising the construction, and Dr Rabi was the sole controller for the project. QPPA (Onshore) - as it then was - had nothing to do with the building of the plant; indeed there was no contact whatever between constructor and operator, much less any acceptance of suggestions from the former by the latter. However, as QPPA (Onshore) watched the work progress, and they saw things happening that they did not like, they built up a file of their own suggestions as to how the pipeline might be rendered secure.

10. Mr Gillatt said that he himself had earlier arranged some tank testing at Umm Said. But he had been determined to use fresh water, and certainly not seawater, to do so. He had in fact had a pipeline laid to get fresh water to the tank for the testing process. In the course of justifying the cost to the QPPA management, he had had samples taken of the seawater just offshore from the plant. These showed that the seawater was both corrosive and high in "sulphate-reducing" bacteria, as described above.

/11. Mr

11. Mr Gillatt then discovered that Shell had constructed the pipeline in a manner which he thought highly unsatisfactory (for one thing, it ran too near the road for comfort or safety). He had protested about this part of the design at the time, but his protests had been rejected. By the time this had taken place, Shell had completed the line, and filled it with seawater without testing the content of the seawater. Mr Gillatt was told that they had "inhibited it", and he was virtually told to mind his own business.

12. It was only when the takeover point was approaching, when QPFA (Onshore) would have to accept the plant for operational purposes, that Mr Gillatt insisted on the ultrasonic tests being undertaken - which triggered off the whole discovery of faults in the pipeline.

13. Mr Gillatt pointed out what a serious setback it was to Qatari hopes of achieving viability for the plant. By having to shut down the gas production from the pipeline, the Qatar Government would be losing some \$200,000 a day in gas alone, and at a very rough guess some \$500,000 all told. Yet it would take 18 months to re-lay the line, with safer and better engineered materials. But I had to agree with him that damaging though this discovery was to Shell's reputation and standing here, they would have suffered even greater damage had the pipeline ruptured during the course of operations, and an explosion resulted. From that point of view Mr Gillatt's action had spared them a potential major disaster.

14. At Mr Gillatt's request, I telephoned Mr Ray Sharman of the British Gas Corporation, to see whether the BGC could hurry up/give priority to the testing of the section of pipeline sent back to destruction (a "bursting test"). Mr Gillatt said that the Manchester University testing unit had booked a place in the operations schedule of one of the two available testing facilities in the UK, but had been told that the facility could not set up the test until early February. Qatar would be losing \$500,000 a day while the line was out of action; and since the experts could not finalise their report and recommendations until this test was completed, it would help greatly if the test could be undertaken quickly, rather than have to wait until February. I put this request accordingly to Mr Sharman, on the strength of Mr Gillatt's previous assistance to the BGC with drawings of the new reinforced tanks for natural gas liquid storage at Umm Said. (Relevant to BGC's operations, because of the implications for North Sea gas transmission and storage.) Mr Sharman promised to enquire into the possibility of bringing the tests on the Qatar line forward, and to let me know the answer either by telephone or telex.

29 December 1980

C T Brant