PETROLEUM REVIEW

IP THE INSTITUTE OF PETROLEUM

January 1995

CRINE
The industry agrees that CRINE pays

Libya
Update on exploration and production

United States
What does OPA mean — owners pay all?

Cuba
An opportunity no company could afford to miss

IFEG

8th Oil Price Seminar

Tuesday 14 February 1995

To be held at the Institute of Petroleum, London

The following papers will be presented at this morning seminar:

- The Influence of Costs on Prices
  Jeremy Elden, Oil and Gas Research Director, UBS
- The Impact of US Environmental Laws on Oil Markets
  Peter C Fusaro, President, Global Change Associates
- The Future Evolution of International Oil Markets
  Paul Horsnell, Associate Director, Oxford Institute for Energy Studies

Exhibits and displays by suppliers of price information will be available.

For a copy of the registration form, please contact Catherine Cosgrove, The Institute of Petroleum, 61 New Cavendish Street, London, W1M 8AR, UK.
Tel: 0171 467 7100
Fax: 0171 255 1472

PETROLEUM ECONOMICS, CRUDE OIL SUPPLY, AND FORECASTING

February – July 1995

Courses from The College of Petroleum and Energy Studies, Oxford

THE COURSES

- ***The Structure and Economics of the International Petroleum Industries***
  Code: OV1 *27 February – 3 March 1995*
  The course provides a programme for those within the oil and gas industry who require an overall understanding of the economic factors which influence the structure of the industry and the oil markets, and an appreciation of the principal economic features of the major functions within the industry. The course aims to unravel the complexities of a multi-disciplinary industry.

- ***Forecasting and Modelling in the Oil Industry – A Practical Approach to Techniques and Applications***
  Code: SP0 *10 – 14 July 1995*
  This practical course is focused on modelling related to analysis in the oil industry with supply, demand, refining and pricing being the key areas. It aims to develop a delegate's knowledge of the techniques used, their applications and where problems may be encountered when modelling.

- ***Crude Oil and Product Supply, Transportation, Refining and Trading***
  Code: SP1 *13 – 17 March 1995*
  The course analyses the reasons behind developments in the international crude oil markets and explains how the business operates on a day-to-day basis. The methods employed by companies are examined in detail, using specific examples and simulated case studies. The technology and economics of refineries are explained, including crude assays, and how refining and supply operations are optimised.

FURTHER INFORMATION

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COVER PHOTO
Gas processing unit at Ryedale, Yorkshire.
Photo courtesy of Peter Smith

NEWS IN BRIEF

20 November
Cedric Brown, Chief Executive of British Gas, received a 75 percent pay increase, taking his basic salary to £475,000.

21 November
Industry and Energy Minister Tim Eggar has ruled out the creation of a single UK energy regulator for several years to come. The essence of British policy, he said, was that industries and their problems were different.

22 November
Over 160 blocks were on offer in Britain's 16th Offshore Licensing Round. Applications for West of Shetland blocks will be 'fast-tracked' so that work can begin in the summer of 1995. Environmentalists have attacked the latest Round for including such sensitive areas as the Wash, Cardigan Bay and the Wirral coast.

Iranian oil minister Gholamreza Aghazadeh said major difficulties still existed between Iran and Shell over development of the North Pars gas field, particularly over the rate of return requested by Shell.

OPEC took the unprecedented step of freezing oil production ceilings at 24.52m b/d for the whole of 1995. Saudi Arabia, the driving force behind the move, managed to overcome last-minute objections from Kuwait, Libya and Gabon with remarkable ease.

BP Exploration has awarded a £3m well management contract for the North Sea Bruce platform to Integrated Well Services, a joint venture company set up by Transocean Petroleum Technology, Reed UK and Wellserve.

23 November
BP Australia and Shell Australia have been accused of price collusion in the Sydney and Melbourne retail petrol markets between 1988 and 1991. Australia's competition watchdog, the Trade Practices Commission, has served both companies with legal proceedings.

Brazil will reduce its crude imports from the Middle East and import instead from the Falklands if exploration around the islands is successful, according to the Brazilian ambassador to London.

24 November
Cambodia has released four new blocks to the international community for oil and gas exploration.

25 November
Total Gas Marketing has become the first independent gas supplier to compete with British Gas for interruptible contracts with companies consuming more than 1m therms per year.

28 November
Mobil Oil Company has announced plans to relocate its headquarters from central London to Milton Keynes.

Two new North Sea survey companies have been formed by Dutch Fugro following the group's acquisition of Wimpol earlier this year.

29 November
New rates for the UKCS offshore hook-up agreement have been agreed by the Offshore Contractors' Council and the two main engineering unions – the AEEU and GMB. They will take effect from 1 January 1995.

Hungary has announced radical privatisation plans for its energy sector. Almost 100 percent of its five regional gas suppliers are to be sold off, with the government retaining one golden share. MVM's non-nuclear electricity generation and power supply companies are also to be sold.

UK petrol duties went up by five percent (2.5p a litre) for both leaded and unleaded in the Budget. Diesel went up 3p a litre, bringing its taxation into line with unleaded fuel. Vehicle Excise Duty rose by £5 to £135 for cars but remained unaltered for lorries.

Wah Kwong Shipping Holdings has been given the go-ahead to build an oil terminal at Aoshan island, 150 miles south of Shanghai.

30 November
LASMO has acquired new exploration acreage in Pakistan. The Kirthar concession, 150 km north of Karachi, covers 3,300 sq kms. The agreement, which allows for a three-year initial gas exploration phase, gives OGDC the right to convert its five percent stake into 20 percent in the event of a commercial discovery.

1 December
Texaco and Norsk Hydro have signed an agreement which will merge their oil product marketing operations in Norway, Denmark and the Baltic States. The new joint venture will involve a 'minor downsizing' in their combined workforces.

Russia is inviting bids for the exploration and development of 15 oil and gas blocks in central west Siberia, believed to contain between eight and 13 bn boe.

An international consortium has signed a memorandum of understanding with Nigeria to build a $2bn LNG plant on Bonny Island. Construction is set to begin next March.

2 December
Cameroon has initiated a new campaign to promote exploration in the Douala Basin. Simon Petroleum Technology is to investigate the basin's potential.

3 December
Export quotas for Russian oil companies are to be replaced by domestic quotas, according to the country's deputy premiers. The decision, which will require each company to supply a certain percentage of the home market, will preserve the huge differential between low domestic and high world prices and serve to encourage the thriving trade in illegal exports.

4 December
Norway is to sell five percent of its stake in the Smorbukk fields to Statoil.

Petrobras and YPFB claim they now have full financial backing for the construction of a $2bn natural gas pipeline between Bolivia and south-eastern Brazil.

5 December
Malaysia has signed a $7.8bn contract to supply Japan with LNG over a 20-year period. The deal means that Petronas could soon be providing Japan with as much as 30 percent of its natural gas needs.

Unseasonably mild weather in the US and parts of Europe sent the price of Brent blend down to $15.90.

California Energy has acquired rival power supplier, Magma Power, after increasing its bid to $950m. The higher offer, which came after a two month battle to buy the company, creates what is believed to be the world's largest independent producer of geothermal energy.

6 December
A Conservative backbench rebellion forced the UK government to drop the second stage of VAT on domestic heating fuel. The duty on petrol rose by a further 1p per litre in the mini-budget that followed.

7 December
Hamilton Oil has recruited Atlantic Power and Gas to provide maintenance and operations personnel for the Liverpool Bay development.

The head of Sweden's Shipowners' Association has warned America that its continued commitment to Certificates of Financial Responsibility (CoFR) is threatening the country with supply shortages.

8 December
Total has announced first production from the North Sea Dunbar field and its subsea satellite, Ellon.

A bill to improve home energy conservation will head the list of private members' legislation to be considered in the House of Commons next month. Liberal Democrat MP, Diana Maddock, is sponsoring the bill after winning the traditional ballot of backbenchers.

Russia plans to double its energy exports over the next 10 to 15 years by cutting back still further on sales to the rest of the CIS and encouraging energy saving schemes at home.

9 December
Enterprise Oil has consolidated its acreage in the Norwegian sector with a series of disposals and acquisitions involving Statoil.

10 December
28 of the world's top 50 oil companies are fully or partly state-owned, according to a new report from *Petroleum Intelligence Weekly*.

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West of Scotland Branch Annual Dinner

on Thursday 9 March 1995

at The Hospitality Inn, Glasgow

Tickets are available from
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63 Carlton Place,
Glasgow
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Fax: 041 420 1261

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Joint Evening Talk

Wednesday 18 January 1994
at 6.30 pm

Winners and Losers for 1995

Speaker: Mr Chris Hopson,
Energy Correspondent
Lloyds List, London.

Wine and Cheese will be served from 5.30 pm to 6.30 pm

Organised by Exploration and Production Discussion Group & Energy Economics Group

IP Contact: Sjoerd Schuyleman
Tel: 071 467 7132

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London Branch – Environment Discussion Group Joint Meeting

Air Quality Policy Developments in the United Kingdom

By Dr M Williams, Air Quality Technical Policy Branch, Department of the Environment

at the Institute, 5.30 pm, Thursday 19 January 1995

The White Paper, 'This Common Inheritance' published in 1990, underlined the government's commitment to an effects-based policy for attaining environmental objectives. In the air quality area, this led to the development of a system for recommending air policy standards.

Following the publication of the first tranche of recommendations for air quality standards, and the consultation paper 'Improving Air Quality', policies are being developed which will address a framework for air quality management in the United Kingdom.

Tea and biscuits will be served at 5.00 pm. Light refreshments will be available afterwards. Enquiries: Mrs E Walker, Hon Secretary, London Branch, Tel: 0926-404257
or Mr J H R Phipps at the Institute, Tel:071-467-7130.

Local authority threatens 'royal oil' bonanza

The Canadian oilman who struck instant fame last month with his plans to drill under Windsor Castle is concerned that he may be barred from commercial extraction.

Dr Desmond Oswald, managing director of Canuk Exploration, said he was reasonably confident that Berkshire County Council would give the go-ahead for exploratory drilling when the issue comes up for discussion on 4 January.

However, the real problem will come if and when Canuk decides to submit a separate application for commercial production, he told *Petroleum Review*. 'At this stage, the local authority has a lot more power and we could have quite a fight on our hands.'

Dr Oswald, whose company is based in Gerrards Cross, Bucks., admitted he was taken by surprise when stories of 'royal oil' hit the headlines last month. 'Seismic work has been going on since 1990 and the planning application went in last September,' he said. 'Then suddenly last month someone leaked the story to the national press.'

He dismissed press claims that Canuk had originally planned to drill right next to the walls of Windsor Castle. 'The area we first requested was only 20 yards or so away from the site that was finally chosen, which is 600 metres south-east of the castle.'

He also refuted suggestions that drilling could lead to subsidence under one of Britain's greatest landmarks. 'Absolutely impossible – we would be drilling into a major anticline of consolidated sandstone.'

Canuk estimates that the Queen could be sitting on oil reserves of between 50 and 100 million barrels. If the company is given the go-ahead, it will drill an exploratory well to a depth of around 400m over a two-week period. The rig will be truck- or trailer-mounted and less than 80m high. Permission has already been granted by the Crown Estate Commissioners.

The final wellhead would probably be sited around two kms away, using extended reach drilling techniques. The favoured options for final production are 'nodding donkeys' or downhole electrical pumps.

According to Canuk, the initial exploratory drilling site within the grounds of Windsor Castle would be invisible to the public – although not necessarily to the Queen! 'I'm not quite sure where her bedroom is,' admitted Dr Oswald.

Elf and GdF deny rumours of co-operation

Gaz de France (GdF) and Elf Aquitaine have denied rumours that the two groups are studying the possibility of co-operation for the transport and importation of gas.

'There are currently no negotiations,' said a spokesman for GdF, a comment echoed by Elf. The French Industry Ministry said it was not aware of any plans for a rapprochement between the two companies.

However, unions representing employees of both companies say otherwise. They claim that back in May 1994 they were informed by the then Industry Minister, Gerard Longuet, that he had 'requested the chairmen of the two groups to work on a joint proposal setting out perspectives for closer co-operation.'

Head of GdF, Loik Le Floch-Prigent, was previously Chief Executive at Elf and on several occasions in recent months has alluded to a rapprochement.

According to industry sources, GdF is particularly interested in gaining a stake in Elf's pipeline network in southwest France. It is also seeking to forge a more upstream role for itself and is therefore interested in gaining access to Elf's expertise in natural gas production.

From Elf's point of view, closer ties with GdF via a significant minor shareholding would put the group in pole position should the French gas utility choose to sign a long-term supply agreement with a producer.

With French presidential elections approaching this spring, a rapprochement is unlikely to take place until well into 1995, or perhaps 1996, when the modification of a 1946 Act which stipulates GdF's status as a public utility, is planned.

Green light for Interconnector

The £440 million UK-Continent Gas Interconnector has been given the thumbs-up by its backers, despite the notable withdrawal of both Statoil and Norsk Hydro from the project.

Nine companies have agreed to sign contracts which will commit them to meet a total capacity of up to 20 billion cubic metres (BCM) of gas annually. British Gas will take by far the largest chunk of capacity (8BCM/yr). This leaves BP, Conoco , Elf and Gazprom with 2BCM/yr each and Amerada Hess, Distrigaz, National Power and Ruhrgas with 1BCM/yr each. Interests in the pipeline will be directly proportional to capacity commitments.

Statoil and Norsk Hydro are understood to have linked final commitment with a resolution to the long-running Frigg treaty dispute, and therefore had little choice but to withdraw from the project.

A planning application will be submitted early this year. Construction is due to begin in the spring, once the necessary approvals are obtained.

The 240 km, 40-inch pipe, which will run from Bacton to Zeebrugge, is expected to be used as a British export line for the first 10-15 years.

MP accuses government and Ofgas of 'political fix'

Both Ofgas and the British government have been accused of 'fixing' the introduction of competition into the domestic gas market in order to disguise possible price rises for smaller customers.

Mr Richard Caborn, chairman of the House of Commons Trade and Industry Select Committee, alleged that a cross-subsidy had been allowed between larger and smaller users in order to facilitate the transition to a competitive market.

His concern, he said, was that this cross-subsidy would then be removed in two or three years time, leaving the smaller volume users facing 'unexpected price shocks'.

Both Ofgas and Energy Minister Tim Eggar have denied accusations of a 'fix', while the independent gas suppliers still insist they can bring domestic prices down by an average of 10 percent.

Several industry sources have also suggested that Mr Caborn's comments reflected his own personal viewpoint rather than that of the whole Trade and Industry Committee. They point to the fact that the committee's actual report into the domestic gas market takes a rather more positive line and makes no mention of any 'fix'.

The report accepts that 'there will be benefits to consumers from the increased choice and lower costs flowing from the liberalisation of the domestic gas market', although it does point out that precisely who will benefit and by how much is still uncertain.

Overall, the report has been welcomed by all sides, not least for raising little that is new or which could delay the passage of the gas bill, which is due to come up for Commons debate in February.

Only one of the report's 16 recommendations appears to have caused any real concern. Recommendation two, which states that licensees should not be permitted to 'discriminate unfairly' between larger and smaller users, has been branded 'unrealistic' by some independents.

'I don't really see how they can implement this,' said Kinetica's John Astrop. 'It's inevitable that customers will end up with differing costs per therm. It happens at the moment with the standing charge.'

New qualification for forecourt staff

Nationwide, benchmarking qualifications are now available for forecourt attendants but oil companies have been slow to take up the offer.

Two extra courses have been added to the existing National Vocational Qualification (NVQ) in retailing, tailoring it more specifically to the petrol business.

Receiving fuel deliveries and maintaining forecourt equipment are both areas covered in the training, which is divided into two levels. The courses were developed after a successful pilot involving both Mobil and Sainsburys.

The petrol retailing industry, however, has yet to take the new training on board.

'Uptake has been limited,' admitted a spokeswoman for the RSA Examination Board, but we are hopeful that the organisations involved in the pilot phase of the new units will opt for the training.'

New, nationwide standards for petrol pump attendants

Foinaven costing less than $3 a barrel

BP is developing its west of Shetland Foinaven field at a cost of just £2.75 a barrel, a quarter of the cost of the North Sea Hutton field.

A new report from Wood MacKenzie highlights the huge contrast in development costs between Foinaven and Hutton, which was brought on stream in 1984 at a capital expenditure (capex) of £10.41 per barrel. According to analysts, this comparision illustrates not only the technological advances that have taken place over the past decade in the North Sea but also the cost-consciousness of modern times.

In 1986, for example, the Balmoral field was brought on stream at a cost of $7 a barrel using a brand new floating production vessel. In contrast, BP and Shell have accepted the McDermott/Golar-Nor offer of refitting a former heavy-lift support vessel, which was built back in 1989.

Foinaven will remain a 'robust project' at an oil price of $14, the report concludes. Even if capex on the project were to increase by some 20 percent, the field would only face problems if the oil price were to drop right down to around $12 a barrel.

'These cost-savings indicate a move away from "goldplating" and the spend, spend, spend attitude of the oil industry in the early 1980s,' said a WoodMac analyst.

New prospects for Amerada Hess

Last month, a consortium of six companies led by Amerada Hess discovered a 'potentially commercial accumulation of oil' on Block 21/11 in the UK North Sea.

The discovery, which lies in 100 metres of water some 140 kms east of Aberdeen, has been named 'Dauntless' after a character in a Sir Walter Scott poem.

The well was successfully tested at a rate of 6,077 barrels per day of 32° API oil through a 32/64 inch choke. Drilled on a 'fast track', it is the first well to be completed on acreage awarded in the 15th UK licensing round.

Tesco stands alone?

STOP PRESS: Tesco will neither confirm or deny industry rumours that it is about to launch up to 100 stand-alone Tesco Express petrol stations in Britain.

The company currently has two stand-alone sites operating at Barnes and Norbury and, according to a spokeswoman, trials are still continuing.

Independent fuel retailers are confident, however, that an announcement is imminent. It is rumoured that several of the new sites will be purchased from Texaco.

Don't ignore Iran!

There is plenty of work for oil and gas contractors in Iran. This is the central message of a new report from Scottish Enterprise National (SEN) which outlines the opportunities in this volatile market.

According to the report, oil and gas companies operating in Iran require a wide range of supplies, including wellhead equipment and valves, pipelines and pigging facilities, pumping and compression equipment and stationary or mobile fire-fighting gear.

Oryx and Conoco on eve of North Sea transfer

Oryx is due to replace Conoco as the official operator of the North Sea Murchison, Hutton and Lyell oilfields early this year.

As *Petroleum Review* went to press, the participants had given their final approval for licence and operating transfers and the respective government approvals were expected by Christmas. Once formal transfer of operatorship has taken place, Conoco will continue to provide ongoing support services in specific areas for another six months.

The agreement includes Conoco's purchase of Oryx's interest in a block below the Alba oilfield, which is one of five blocks in the Central North Sea containing the Britannia field. That change increases Conoco's share of Britannia to approximately 43 percent.

The transfer, which was set in motion last August when an asset exchange agreement was signed, means Oryx will become the company with the largest investment interests in Murchison, Hutton and Lyell. It is only the sixth independent to become a North Sea operator since oil first came ashore in 1974. ***(See page 26).***

'We recognise that to be a North Sea operator is to take on one of the most responsible stewardship roles in the world, where safety and environmental protection are paramount,' Ms Patricia Horsfall, Managing Director of Oryx UK Energy Co., told *Petroleum Review*.

'We are proud to become an operator because we will uphold these responsibilities whilst aggressively pursuing our volumes up/costs down objective, and because we see the United Kingdom as a core in our strengthened worldwide portfolio.'

At the beginning of December, Oryx also awarded an operations contract to Atlantic Power & Gas (APG) for the provision of field management and support services for the three fields. APG will provide onshore support to the offshore operations, including new office facilities in Aberdeen for the integrated Oryx/APG asset team.

OIL moves vessels back to Britain

Leading offshore support vessel operator, OIL, has taken the highly unusual step of moving part of its North Sea fleet back under the British flag.

The company is re-registering four of its platform supply vessels in the United Kingdom and plans to flag in the entire fleet over time. The move leaves just three of its 10 North Sea vessels still registered outside Britain, one with the Netherland Antilles authority in the Caribbean.

OIL's decision flies firmly in the face of recent trends. Western shipping fleets have for some years now been flagging out their vessels to countries which impose lower taxation – so-called 'Flags of Convenience'. In 1993, for example, Star Offshore re-flagged almost its entire offshore support fleet in Barbados.

Despite this, OIl claims that re-registering its vessels in Britain will involve no significant extra expense. Moreover, the move has given a boost to training.

'By registering in the UK, we became eligible for training grants,' said Regional General Manager Jim Rourke. 'This has given us a great opportunity to train more British officers and we currently employ 24 cadets.'

OIL's decision is unlikely to herald a mass return to the British flag amongst western fleets. 'It is unusual for a company to flag in (to the UK)', said Mr Rourke. 'It proved to be cost-effective in our case but it depends very much on the operating circumstances of the individual companies.'

Approximately half the support vessels currently operating on the UKCS are flagged outside Britain, according to the British Offshore Support Vessels' Association.

Amoco signs Egyptian deal

Egypt's pipeline infrastructure is on the eve of development, following an agreement between Amoco, IEOC and the Egypt Gas Company.

All three companies signed a memorandum of understanding to form the country's first private natural gas pipeline firm.

The $300 million joint venture will initially focus on two projects: an export pipeline to the eastern Mediterranean countries and a pipe connecting natural gas discoveries in Egypt's Western Desert with the country's internal gas distribution network.

Egypt will hold a 34 percent stake in the venture, leaving Amoco and IEOC each holding 33 percent.

The company, which awaits final approval from the Egyptian authorities, could be up and running as early as mid-1995.

'Floaters' set to rocket

The number of mobile production systems is set to double between now and the turn of the century, according to a major new study from Smith Rea and Kennedy Marr.

By the year 2000 around 100 of these units are predicted to be in active service worldwide, compared with 52 at present. Growth is expected to be particularly strong in the western Pacific Rim.

Not surprisingly, the number of production contractors is also expected to rise and the report does not envisage a problem over supply constraints. British unions are concerned, however, that the UK lacks the facilities to build new 'floaters' from scratch.

Meanwhile, the outlook for offshore storage vessels looks rather more bleak, according to the report, as FPSO monohulls continue to displace semi-submersibles.

New IP technical publications

Health

Health Aspects of Air Quality
Environmental Health Series No.1
This document reviews health concerns about the potential contribution of airborne contamination, the implication for the petroleum industry, and the involvement of the medical profession, government and academia.
Price £24 ISBN 0 85293 144 1*

Guidance for Occupational Physicians on Expanding their Role into the Field of Environmental Medicine in the Petroleum Industry
Environmental Health Series No.2
Provides advice on how occupational physicians in the petroleum industry may extend their role into environmental medicine.
Price £12 ISBN 0 85293 145 X*

Institute of Petroleum Workshop 10 February 1994 - Air Quality and Its Association with Respiratory Disease
Environmental Health Series No.3
The report provides a non-technical management summary of the workshop discussions and conclusions on the association between air pollution and the short and long term respiratory effects. In addition a technical commentary on the workshop intended for the health professional is provided.
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Dynamic Mass Measurement. A Guide to Coriolis-Effect Direct Mass Flowmetering
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Provides guidance on uplifting petroleum from both underground and above-ground tanks by road, including details of equipment and operational procedures recommended for carrying out the work safely, effectively and with minimum environmental risk.
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This code provides a model for any group of companies wishing to set up a safe loading pass scheme. It makes recommendations on how such a scheme should be operated and provides vehicle inspection checklists.
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Code of Practice for the Design and Operation of On-Board Truck Computer Systems for Road Tankers
This code will enable on-board truck computer systems to be compatible and provide a high degree of interoperability.
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This code specifies minimum requirements for the materials, design, construction, testing, operation and maintenance of international floating roofs. It is applicable to both new and retrospective installations.
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Code of Practice for Driver Controlled Deliveries to Premises Licensed for the Storage of Petroleum Spirit
This code has been published on behalf of UK Petroleum Industry Association following consultation with LACOTS. It provides a safe and practical operating framework and guidance to persons concerned with DCD operations.
Price £16 ISBN 0 85293 141 7*

Test Methods

Standard Methods for Analysis and Testing of Petroleum and Related Products 1994. In two volumes
*Price £195** ISBN 0 471 955590*

IP technical publications
Published in 1993

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Price £20* ISBN 0 85293 125 5
Code of Practice for Occupational Health
Price £35** ISBN 0 471 94268 5
Guidelines for Health Surveillance and Biological Monitoring for Occupational Exposure to Benzene
Price £16* ISBN 0 85293 131 X

Environment

Code of Practice for the Investigation and Mitigation of Possible Petroleum - Based Land Contamination
Price £39** ISBN 0 85293 124 7

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Statistics for Static and Dynamic Measurement - Petroleum Measurement. Manual Part XIV
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The impact of US midterm congressional elections

By P S Adam

Republicans, now that they have wrested control of both houses of Congress from Democrats in the recent US midterm elections, are expected, over the next two years, to exert a more noticeable influence over the Federal government's involvement in energy and the environment.

Not one incumbent Republican governor, congressman or senator was defeated. Despite the unexpected size of their electoral victory, however, the new masters of Capitol Hill are likely to try to bring about changes in policies pertaining to oil and gas and related matters that are limited and evolutionary, rather than dramatic, at all innovative, or encompassing.

Weakened though he may be, President Bill Clinton still calls the shots for the United States in international affairs. And opportunities may present themselves between now and the presidential election in 1996 which would enable his administration, to exert, through its foreign policies, a greater degree of influence over major developments in the energy sector than it has so far been willing or able to effect.

With respect to any upcoming congressional action, the practical concerns of a new array of committee chairmen – representing, as they do, the interests of the regions from which they come, as well as the industry groups and portions of the involved electorate who support them generally – will determine any modifications in energy/environmental policy. And what changes there are will tend to be regional, more than national or international in impact.

Overall, incoming Republicans are expected to give different emphasis to items and priorities which are already embedded in an energy/environmental agenda that has, for over a decade now, enjoyed strong bipartisan support and is accepted generally by most US voters and politically involved private institutions. Any new approaches the new legislative leadership proposes are likely to be consistent, for the most part, with policies that have evolved under Presidents Ronald Reagan and George Bush, as well as those of the Clinton administration. But only if things remain more or less as they have been, meaning if the price of oil does not rise significantly – which could be a big if.

Upstream, downstream, all around the hill

With respect to oil and gas, the new Congress is likely to demonstrate:

- A somewhat more favourable orientation to the industry, generally, which could find specific expression in the tax code as it pertains to exploration and production activity.
- A go-slow approach to environmental regulation and enforcement, which is likely to have its greatest impact on downstream activity, and
- A shift in the geographical centre of gravity of the US oil and gas sector away from the Gulf of Mexico, Texas and Louisiana (which now have a 'gassier' orientation), towards Alaska and California (more concerned, of course, with crude oil production) prompting serious discussions concerning opening up areas now off limits to the drill bit.

In the wake of the election, Alaska looms larger in the US oil and gas future. Senator Frank Murkowski (R-Alaska) will chair the Senate Energy and Natural Resources Committee replacing Senator J Bennett Johnston (D-Louisiana). In the House of Representatives, Alaska's Don Young will chair the Natural Resources Committee, the scope of whose activity includes jurisdiction over inland waterways, national laboratories and the Trans-Alaskan Pipeline.

Alaskan prospects

The new pre-eminence of the state's congressional delegation is likely to prompt serious reconsideration over opening up the Arctic National Wildlife Refuge (ANWR) to development. New production from Alaska's North Slope would significantly reduce US dependence on foreign (specifically Middle East) crude oil.

The Department of Energy has estimated that a find there could possibly increase US proven oil reserves by one-third. Development would stimulate the national economy, create jobs and sharply reduce trade imbalances. And the Department of the Interior has recommended careful development.

Attempts to open ANWR up may fare better now under Republican congressional leadership than previous efforts over the past several years led by the Senate Energy Committee under Democratic control. But opponents of such a move, particularly environmentalists, could, as they have in the past, block Senate consideration.

Another Alaskan oil and gas issue which is expected to come to the fore in the coming Congressional session is lifting the export ban on Alaska's crude oil. The Clinton adminstration has voiced support for this, but has failed, so far, to act with sufficient vigour to bring it off. Such a move has been championed by British Petroleum because it owns large reserves in Alaska. But the ban is supported by west coast refiners who enjoy the artificially lower crude prices that result from such a restriction.

The powerful Alaskan delegation will do more, though, than promote just the interests of its home state. Senator Murkowski is expected to reintroduce a number of changes in the tax and environmental law favourable to oil producers and refiners generally. These include a per barrel tax credit that would encourage exploration in frontier areas including the outer continental shelf, immediate expending of geological and geophysical costs of all wells drilled as well as change favourable to the industry under the financial responsibility requirements of the 1990 Oil Pollution Act.

Alaskan pre-eminence does not mean that the interests of the Gulf states will be forgotten in the new Congress. Texas Representative Bill Archer will take over as Chairman of the powerful House Ways and Means Committee which oversees all federal government appropriations. Mr Archer is expected to try to restore tax benefits to the industry that were reduced in recent sessions.

Environment and business: oil and air

With respect to environmental concerns as they impact energy, congressional Republicans are, generally speaking, likely to show greater support for regulatory approaches which emphasise risk assessment, a market orientation, and which rest on more thorough analysis of the costs and benefits of environmental constraints to oil and gas-related activity. This would represent a departure from what many feel is the administration's predilection for environmental micro regulation.

The oil and gas industry expects the new legislative

leadership to get regulators to ease up a bit. But any changes in the environmental sphere are likely to be limited. Senator John Chafee (R-Rhode Island) will head up the Senate Environment and Public Works Committee – his views are apt to closely resemble those of Democrats rather than those of his Republican colleagues.

With regard to specifics, there could be sufficient support in this Congress to amend the Oil Pollution Act of 1990 making financial responsibility requirements less onerous. But few expect notable change in what certainly is the most intensely contested of all US environmental provisions impacting the petroleum industry: the renewables requirement pertaining to reformulated grades of gasoline as mandated by the EPA under the provisions of the Clean Air Act.

Requiring, as the authorities now do, that a fixed percentage of oxygenates in reformulated grades of gasoline must be manufactured from 'renewable sources', in other words, ethanol, will cost US refiners, who favour the use of methane-based methanol, approximately $25 million a year, according to government estimates – a figure confirmed by industry sources – on top of refinery modifications expected to cost from $10 to $30 billion. But such a requirement is popular in the US Midwest 'cornbelt', which includes the swing states of presidential elections. And renewable ethanol also enjoys strong support from agribusiness interests which give generously to both US political parties.

Republicans are unlikely to be unable to effect change on another issue important to the domestic industry: allowing foreign countries such as Venezuela to import cheaper grades of gasoline whose required specifications are less stringent than those the authorities require US refiners to produce. Restricting such imports could be construed as interference with provisions of the General Agreement on Tariffs and Trade (GATT) which is expected to be supported by members of both the new Senate and House of Representatives. And, more importantly, a number of US jobs depend on trade with the Latin petroleum giant.

Venezuela is the second largest trading partner the United States has in South America; the relationship is worth about $4.4 billion to the United States annually. If the government were to interfere at this point, GATT would allow Venezuela to reduce imports of autoparts and crops from the United States in order to recoup an estimated $100 million in lost gasoline sales.

Victory, yesterday, today and tomorrow

The new Congress may bring about changes in domestic energy and environmental policy but President Clinton remains responsible for US involvement in foreign affairs. The current domestic political balance and certain international energy sector developments may lead the administration to reassess its approach to energy – specifically its interest in whether oil prices appreciate or remain more or less in the range they have been since the end of the conflict with Iraq over the occupation of Kuwait.

Concurrent with the political shift evidenced by the results of the US midterm election, there has been a sea of change in the dynamics of international oil: Saudi Arabia, departing perhaps from its market share approach, supported in the recent OPEC meeting the maintenance of current production quotas for a year in the face of rising oil demand and disappearing international surplus production capacity – a move which is likely to reinforce a trend of rising oil prices.

Should this continue, or should Middle East uncertainties grow or the region's conflicts resurface once more in a dramatic form, the resulting impact on US policy would certainly supersede and eclipse any changes effected by Congressmen and Senators elected into office in the midterm election in November.

Vowing 'co-operation' with the Clinton administration but not 'compromise', the new speaker of the House, Representative Newt Gingrich of Georgia, has, in effect, declared himself a domestic US prime minister intent on enacting measures set forth in a 'Contract with America', a manifesto, signed by most Republican Congressmen before the midterm election, which contains a wide-ranging programme of notably conservative economic, social and political reforms.

But in taking such overt control of the domestic agenda, Republicans could be setting themselves up for blame should the recovery, which in the United States has been surprisingly strong, falter. Rising oil prices, contributing to inflationary fears could jar equity and bond markets and undermine the expansion. If this started to happen, would the Clinton administration signal Saudi Arabia to take action to increase production and dampen prices? Would it decide to support easing the sanctions against Iraq which would lead to weaker oil prices? Or would it continue to support the sanctions, opt for a policy of benign neglect vis-a-vis letting the economic chips fall where they may and then blame its political opposition for interfering with domestic policies?

In a recently published book, *Victory, The Reagan Administration's Secret Strategy that Hastened the Collapse of the Soviet Union*, author Peter Schweizer details how in the early 1980s senior Reagan administration officials repeatedly let senior Saudi officials know the extent to which low oil prices would help to bolster US efforts to weaken the Soviet Union – dependent as it was on international oil petroleum sales to earn hard currency. And that cheap oil, in conjunction with the Reagan administration's forcing the 'Evil Empire' into an expensive 'Starwars'-driven arms race, would severely weaken communism worldwide. Mr Schweizer makes the point that Saudi Arabia was well aware of the geopolitical ramifications of adopting production and marketing policies which led to a collapse of oil prices in 1986. In addition to securing a market share of world supply commensurate with their reserves and production capacity, the Saudis were assisting the guarantor of their security and chief arms supplier, the United States, in achieving its strategic international objectives.

Strengthening oil prices now, however, would help Russia and the other former Soviet Republics adopt market reforms and build their economies. It would also improve the Saudi financial position, allowing the Kingdom to pay for the aircraft and telecommunications equipment it plans to purchase from US corporations following the administration's deft response to Saddam Hussein's latest belligerence.

At the same time, rising oil prices would also help Iran, which, in addition to Iraq, threatens Saudi Arabia. However, the United States, by once again coming to the aid of the Arab Gulf states, has shown its commitment to the region's stability and presumably would be just as capable of protecting the Kingdom from any threat emanating from across the Gulf.

It may therefore be in the overall interests of both the current US administration and the Kingdom of Saudi Arabia to see oil appreciate, at least to a limited extent and for a time. By standing a Victory-type strategy on its head and allowing nature to take its course as regards oil prices, the Clinton administration might help its domestic political opponents, who promise to continue efforts at deficit reduction, while boosting military spending and cutting taxes, defeat themselves – a development which would be of greater import than any modifications of policy brought about by the new Republican-controlled Congress.

OPA — owners pay all?

By Philip Rankin, Consultant, INTERTANKO

The US Oil Pollution Act 1990 marked a major new development in oil pollution compensation law, with far-reaching changes to many of the principles governing maritime risks and damages which the oil and tanker industries had come to regard as fundamental for over 20 years.

A brief (and necessarily foreshortened) history of oil pollution compensation may be relevant. The 1967 wreck of the *Torrey Canyon* exposed serious deficiencies in the law providing compensation to victims of oil pollution. In response to this, in 1969 tanker owners themselves and the oil industry set up two complementary voluntary compensation schemes. TOVALOP (the Tanker Owners Voluntary Agreement concerning Liability for Oil Pollution) for tanker owners and CRISTAL (Contract Regarding a Supplement to Tanker Liability for Oil Pollution) for cargo interests, were set up and administered by the International Tanker Owners' Pollution Federation (ITOPF).

This was followed by two conventions produced by the International Maritime Organization (IMO) – the 'Civil Liability Convention' (CLC) of 1969 mirroring TOVALOP and the Fund Convention of 1971 mirroring CRISTAL. These Conventions were drawn up for member states of IMO to ratify and adopt into their national laws. TOVALOP and CRISTAL, and the CLC and Fund Conventions, have been updated periodically to take into account changing circumstances, the most recent revisions to CLC and Fund being the 1992 Protocols, widening the scope of compensation and raising the limits on sums available.

The principles of the schemes are that tanker and oil owners accept strict liability – no proof of fault necessary – to compensate for qualifying pollution damage and in return are entitled to the protection of limitations on the financial extent of their liability. Tanker owners accept the first tier of liability – which has covered the majority of small accidental oil spills which have caused damage – and cargo owners accept the relatively rarely required second tier of compensation up to a final ceiling: under the 1992 Protocols this ceiling is up to about US$280 million. Since these compensation arrangements were put in place, only three incidents have produced claims which have had to be capped by limitation figures.

The opportunity to set financial limits to one's liability is an old-established principle of many legal systems – the English and the American in particular. The rationale is that without it there are certain essential trades and activities which it would otherwise be absolutely too risky in terms of liability for entrepreneurs to undertake: many of these relate to transport, whether shipping, rail or air.

Joint or shared liability

The principle of joint liability to compensate victims of a failed or endangered maritime adventure also goes back a long way – into so-called General Average rules under which cargo owners may be called upon to contribute to the losses of victims of a shipping misfortune. General Average existed 200 years ago and still operates today.

In the case of oil pollution compensation, some of the logic for sharing liability between shipowner and cargo owner has been on the grounds that it is the oil itself which is a pollutant danger with 'inherent vice'.

Following the major casualty of *Exxon Valdez* in 1989, the US Congress departed from these maritime and oil industry precedents and principles and in 1990 passed the Oil Pollution Act (OPA). It is a signal of how much of a departure was OPA from established practice that over four years after OPA was passed, the necessary implementing rules to bring large sections of it into operation have not yet been issued, and many of the rules which have been issued have attracted widespread criticism from the breadth of the oil and tanker industry.

OPA's first big departure is to change the basis of liability limitation. The CLC and Fund provides that a tanker owner may limit his liability to compensate for oil pollution damage caused by his ship but also provides that if the oil spill was caused through the owner's *'actual fault or privity'* the limitation may be set aside and further compensation awarded.

OPA too has limitation levels of US$1,500 per GRT of the spilling ship, or about US$250 million for a VLCC. However, under OPA, the limitations can be broken *'if the incident was proximately caused by gross negligence ... or the violation of an applicable Federal safety, construction or operating regulation by ... an agent or employee'* of the shipowner. The threshhold is much lower and when one considers the atmosphere in a US Court following an oil spill it must certainly be expected that many will seek to define the grossness of 'gross negligence' in terms of the grossness of the consequences – minor negligence with gross consequences becomes gross negligence.

Unlimited liability

The result according to tanker owners' arguments is that effectively their liability under OPA becomes unlimited. The absence of limitation is not just with respect to the immediate compensatory sum, but also to leaves open the legal door into the indefinite future for late-developing claims for compensation so the account can never be closed: the present problems of Lloyd's of London vividly illustrates the problems of unlimited liability.

The problem with unlimited liability is that it is uninsurable. It is not possible for a shipowner to protect himself from claims by orthodox insurance means. Insurance can be obtained up to certain levels. Today the shipowners' Protection and Indemnity mutual insurance Clubs (P+I Clubs) provide Club cover up to US$500 million, and an additional facility of a further US$200 million. However when that cover exhausts itself on a claim, the next payer is the ship's owner up to the limit of his worth including bankruptcy or liquidation of the company.

Coast Guard Rules

A subtended problem of the liability and insurance problem is the US Coast Guard's Interim Final Rule (IFR) on Certificates of Financial Responsibility – certificates issued by the Coast Guard that tanker operators have satisfied them of their financial ability to meet OPA's compensation obligations if called upon. Proof of insurance – P+I entry – has not been accepted although P+I Clubs have shown that over the years of their existence they have never defaulted on a claim.

The IFR requires shipowners to self-certify based on showing net asset worth realisable by a very small number of ship operators and oil companies, or to buy bonds, or to buy into one of a small number of new mutuals or fixed-cost schemes offering to bond to show the necessary financial evidence and obtain this 'ticket to trade' from the Coast Guard. Great problems were being experienced by shipowners and scheme administrators in getting these schemes operative by the closing date of 28 December 1994 – and it was probable that a noticeable proportion of the tanker fleet trading to the United States would have difficulty in complying. The costs, moreover, merely for a ticket to trade with no added insurance cover, are high and represent an unnecessary outflow of funds from the tanker industry.

The second fundamental extension of spill damage compensation liability is the extended scope of compensation. The international regimes (CLC, Fund, TOVALOP, CRISTAL) entitle claims in respect of losses through pollution damage, including costs incurred in mitigating, preventing or cleaning up the oil, rectifying the damage, and reinstating. OPA (Sec 1006) extends liability to compensate to embrace damage to natural resources – the cost of restoring, rehabilitating, replacing or acquiring the equivalent of the damaged natural resource, and the diminution in value of the natural resource pending restoration.

Cost assessment

OPA provides mechanisms for assessing these costs but the rules for doing so have still to be finalised. The suggestions so far emanating-involving public consultation by means of opinion poll sampling (so-called 'Contingent Valuation Methodology') – are suggesting 'per dead seagull' monetary figures and pointing towards totally unsustainable compensation demands in cases of a substantial oil spill incident. This 'Natural Resources Damage Assessment' exercise threatens to be one of the most unsustainable parts of OPA.

ITOPF's figures based on their experience in oil spill response have shown that the cost of response, containment and clean-up of oil spills in the United States (and for which owners must therefore pay) is several times greater than on anywhere else in the world – because of the way in which response is organised, the obligation being left to the 'guilty' shipowner who is often forced to over react in response to perceived public blame and pressure. The mounting costs to Exxon of the *Exxon Valdez* spill, far exceeding financially any other tanker spill there has ever been, illustrate the levels of compensation payout risked: and *Exxon Valdez* is of course being litigated on pre-OPA US laws.

An additional claim risk is provided in that OPA does not pre-empt, or prevent, individual states of the Union passing their own supplementary oil spill compensation statutes. Some have already done so, like Washington State and California both of whom place extra burdens on the tanker owner.

The heavy and potentially unlimited weight of OPA's provisions are forcing many reputable owners to decide to quit the US trade entirely, and others to restructure to protect themselves. It is making traditional shipowners, banks and investors hesitant to risk loans for tanker construction.

Burden on tanker owner

OPA also departs from international norms by placing the entire compensatory burden on to the tanker owner, and exempting the cargo owner, charterer or oil importer from any direct liability. INTERTANKO, the independent tanker owners' association, deplores this retrograde development and believes that it risks at the same time undermining the structure of international oil shipping and possibly jeopardising the compensation of some justified compensation claims.

The charterer, the cargo buyer and the importer to the United States all have a significant part to play in the common adventure of bringing oil to the United States. All of them are partners in it and all should have some degree of liability to compensate the consequences of the adventure going wrong. It is INTERTANKO's view, representing responsible tanker operators, that as the cargo interests have a decisive say in the selection of the vessel to carry their oil, so the cargo interests must bear some consequences of any failure in the selection they make. A share of the liability for chartering or importing oil on a ship would certainly make safe operating quality a much more important criterion in the ship selection process.

From the potential pollution victim's viewpoint, it is illogical too that what is generally the fattest and most accessible wallet – the US-based oil importer – is not in fact accessed under the Federal law to make compensation. A US$80 million compensation claim arising from an oil spill from a barge in Puerto Rico last year was paid US$10 million from the barge owner, from whom no further money could be extracted, and the balance US$70 million from taxpayer funds. No legal contribution came from the owner of the polluting oil.

Conclusions

These issues – unlimited liability risks, extended compensation requirements, and no contribution from cargo interests – are the major fundamental difficulties the tanker industry, INTERTANKO's members, have with the United States OPA. Although OPA contains some worthy objectives regarding improvement in spill response, its compensation provisions are essentially misconceived and represent an attitude of criminalising the tanker industry.

A group of US Congressmen writing to the President last November revealed that a mere 6 percent drop in oil supply in the 1973-74 Arab oil embargo produced queues at US gas stations. The still-unfolding extent of OPA penalties on tanker owners risk so upsetting the risk-reward ratio on which all free trade depends by a degree greater than 6 percent.

The international tanker industry provides an essential and irreplaceable service to the United States in delivering energy. Thanks to the international tanker fleet, the cost per gallon to ship oil is just 2.5 cents. In endangering the tanker industry the United States is endangering its own economy and commercial strength.

The general consensus is that CRINE pays

By Carol Reader

Thirteen months ago industry representatives met in London to hear details of the CRINE initiative – Cost Reduction in the New Era – and went away inspired but with one or two doubts. One year later delegates gathered once more, this time at a conference in Aberdeen, to find out just how widespread and how successful this initiative really is. Some delegates came ready and willing to share their experiences; some came to learn from the innovations that have already been put to the test. Everyone went away this time inspired by what they had heard during the day, though a few reckoned cost reduction was a common and imperative theme that had permeated throughout the industry, whether you called it CRINE or not.

Speaking at the opening of the conference, Mike Curtis, Chairman of the CRINE Steering Committee, talked of the vision and leadership evident during the movement's short history (was it only in 1992 that the first tentative steps were taken?). He thanked all the people, the 'cream of the industry', who had served on the workgroups and are ensuring a successful outcome to the movement launched originally by Rex Gaisford of Amerada Hess and Mike Spaven of Phillips. He stressed how a cultural shift had taken place and how fundamental cultural change was now a key theme. He went on, 'We knew that 1994 was the year when we had to deliver the promises we made in 1993. We also knew that a lot of hard work lay ahead of us in converting the promises into something practical. We had to fulfil the promise of a better future which was spelled out so clearly in the CRINE report.'

He ended his speech saying 'We are developing a new, consistent and improving way of working that everyone can sign on for – and we expect consistent, improving end-results every time.... Through CRINE we can continue to get consistent, improving, cost-effective results by changing our work processes and relationships, while respecting everyone's need for a profit to survive.'

Ministerial support

Industry and Energy Minister Tim Eggar came to Aberdeen and gave his wholehearted support. Addressing the conference he said, 'CRINE is no longer an ideal. It is an established benchmark for the industry which has the commitment of both industry and government and an impressive list of results.' He quoted some of the industry's achievements to date:

- BP has used an integrated management team on its Andrew project, saving around 7 percent on capital costs.
- Phillips has established a joint operator and contractor management team for the design and procurement phase of the Judy/Joanne project which has reduced the procurement budget by around 15 percent.
- Conoco's alliance arrangements with its various contractors are expected to result in project savings in excess of 15 percent on the Jupiter satellites.
- On the Miller project with an incentive drilling contract, BP has reduced platform drilling and completion costs by 45 percent and well delivery has improved by 24 percent. Drilling costs per foot have been reduced by 33 percent and down time by 47 percent.

In order to emphasise the government's enthusiastic backing for CRINE, the minister announced £100,000 of financial support for 1995. As concrete evidence of his support, he also undertook to reduce bureaucracy where it was possible, for instance by cutting information required from applicants in the 16th Licensing Round, just announced, where they had supplied the same information in the previous round. His department was also aiming to reduce documentation requirements elsewhere. Concluding his speech, he congratulated the industry on its achievements and encouraged it to keep up the momentum.

Keynote address

Making the keynote address, Heinz Rothermund, Managing Director, Shell Expro, said, 'Cutting operating and development costs is an imperative for

Britain's offshore oil and gas industry as we strive to maximise recovery from a maturing North Sea against a background of continuing low oil prices. It requires the commitment and creativity of all players – operators, contractors and suppliers – working together towards common goals'.

Mr Rothermund quoted the redevelopment of the Shell/Esso Brent field which he said was justified by the recovery of more oil and gas than in many new developments and by the extension of the productive life of the field by well over a decade. He also pointed to the southern gas fields like Leman and Indefatigable which without sizeable reductions in operating costs would have had no future. Here and elsewhere in the southern North Sea, the increasing use of unmanned satellites had been a contributory factor. In four years offshore manpower would have been 'reduced by nearly 50 percent,' while gas production will have doubled.

Among other cost reduction innovations, common specifications for steel and the standardisation of the christmas trees were important, as was the LAW (Limited Access Wellhead) concept – a platform with essential facilities only, which would require a maintenance visit just once a year.

All in all, recent changes and improvements enabled his company to increase the productivity of its offshore contractors by 20-25 percent over the past three years.

Nevertheless, he believed that there should be a limit to partnerships, and alliances – he did not favour the reduction of the role of an oil company to a 'specialised merchant bank operating on behalf of shareholders'. Above all, it was essential not to close one's mind to new, better ways of doing business.

Company CRINE sheet

The afternoon session of the conference turned to 'Best Practice' experiences from several companies which told why, how and with what result they were applying a wide range of CRINE principles.

A number of companies had also organised a fascinating and revealing display showing examples of putting the initiative into practice, with innovations to be publicised and shared. Featured were Andrew, Armada, Britannia, Douglas, Gannet, Leman, Johnston – the list goes on and on.

Kvaerner quoted its experience of alliancing contracting and integrated project teams on BP Hyde (25 percent cost savings) and Phillips J block (15 percent savings on equipment/materials, with a 50 percent increase in throughput). It also showed the benefits of a standard, not normally manned platform and a modular jacket for low-cost installation – as well as gains to be made from functional specifications.

British Gas, operator on Armada, claimed to be 'at the leading edge of the CRINE initiative'. From an original estimate at the feasibility stage of £740 million, the cost had been reduced thanks to a simplified platform layout to £640 million, through various other stages to an estimated final cost (last October) of £500 million. The means to achieve these cuts included standardisation, fit-for-purpose refinements and the early involvement of the fabricator in the design.

For its part Texaco displayed figures for its Captain field from which first oil is due at the end of 1996. By adopting the CRINE philosophy and principles, finding and developing costs were under £2.50 per barrel.

Amoco acknowledged its debt to CRINE for the development of strategic alliances and a number of innovations in design and operating philosophy. It showed how some 'back to basics' thinking could bring cost reductions and improved productivity – for instance, the use of wind power on the Davy and Bessemer platforms to generate all the electricity requirements during not normally manned conditions. This will cut diesel costs by 85 percent, also reducing maintenance and diesel exhaust emissions. Amoco also featured other innovations such as sharing supply vessels, refuelling from a supply vessel. Another cost saving innovation was AMOSS (Amoco Offshore Supporting Structure), which, with a simplified design and quicker fabrication, was said to save £7 million.

Showing more CRINE experiences, Phillips quoted an original estimate for the Claymore field of £129 million, currently forecast at £113 million. The company also pointed out how on Alison a standard christmas tree and a functional specification had been used and the Anne subsea design repeated.

The list of CRINE successes went on – Judy and Joanne, Chevron's Alba, Ninian and Britannia, Hamilton's Liverpool Bay, BP's Andrew, Hyde and Harding etc. Key words came up again and again – alliancing, partnering, functional specifications, design simplification, multi-skilling, value engineering, reduced documentation, rationalisation, common working practices, standardisation, new materials, new technology, cultural change and more cultural change, best practice – all summed up in the title of the conference, 'Turning the Vision into Reality'.

As Vic Tuft, Director, CRINE secretariat, summed up, 'We did the talking in 1993. The time for action was 1994. The next steps concern 1995.'

'For all managers, CRINE can be the passport which frees them from the shackles of bureaucracy. It offers managers the equivalent of an "open sesame" to many more opportunities previously denied them or once thought to be impractical.'

'Three integrated elements of activity form a cohesive blueprint for management success. It is crucial that the three elements are seen as an integrated programme. The maximum benefits of CRINE will come through the acceptance and implementation of these three simple but very fundamental elements. The first is adopting functional specifications and best working practices. The second is sharing of information about individual company cost reduction initiatives. And the third is education and training to achieve the cultural change.'

'CRINE is not a seven-day wonder.... It should be seen as a two to three-year wonder which carries on and becomes endemic in our way of thinking.'

'The Andrew results to date are, quite simply, lower costs'

By J P Bibby, Andrew Project Co-ordination Manager, BP Exploration

In 1990 BP Exploration Management set the Andrew Team a challenge. The challenge was to bring the Andrew field forward for sanction as an attractive investment opportunity for BP and its partners. This was no easy challenge as the Andrew field, discovered back in 1974, had been the subject of many unsuccessful studies aimed at a viable development. The combination of relatively small oil and gas reserves, expensive drilling costs, a difficult gas production profile and poor soil conditions had combined to make Andrew an uneconomic prospect.

Now that has all changed. With the commercial, technical and reservoir teams working together, and with an innovative alliancing approach to project implementation, it has been possible to rewrite the commercial equation and achieve full sanction for Andrew from BP and its partners. As a result fields such as Andrew which were previously regarded as uneconomic can now become the focus of exciting new business opportunities.

Andrew was sanctioned in February 1994 and is on target for delivering first oil towards the end of 1996.

Described below is the strategy that was developed for the pre-sanction phase, the post-sanction alliance gainsharing, and the result to date that this new approach is delivering for Andrew.

Pre-sanction strategy

From 1990 to 1992 the sub-surface, commercial and facilities teams worked to define the optimum way to develop the field. In respect of the facilities work this led to the adoption of a concept that consisted of a four legged lift installed steel jacket, surmounted by a single integrated deck with full oil and gas processing, accommodation and drilling facilities. Advantage was taken of the best available technology to reduce the cost of the facilities.

However, it was evident at the end of 1991 that costs had to be reduced even further if Andrew was to be sanctioned by BP and its partners.

The team was convinced that this could be achieved by combining a different behaviour towards project implementation, together with the best technical solutions. In other words there was a conviction that Andrew could be made viable by technology and a new behaviour working together to deliver the required business result.

This thinking led the Andrew team to develop a novel strategy for the period leading up to formal sanction of the project.

This strategy can be summarised as follows:

- Contractor selection
  The selection of contractors that have a major contribution to the design, fabrication and installation of the facilities who were willing to work with BP and others with a commitment to the success of the Andrew Development.

- Definition of facilities and sanction cost
  Prior to sanction BP and the selected contractors would define the facilities, the scope of work and the implementation strategy, and contribute to the sanction estimate as a single team.

- Creation of the alliance
  The creation of an alliance with these contractors whereby they share a commitment and a stake in the delivery of the finished Andrew facilities.

Contractor selection

The selection of contractors at this early stage in the development required some radical thinking and entirely new behaviour from both BP and all the contractors who were invited to participate in the selection processes.

As the scope of work was not well defined, the emphasis in the selection process was on their commitment to work with BP and others in a way which would eliminate inefficiency, and thus reduce the overall development cost.

The outcome of this process was that in 1992 and 1993 the following contractors were selected to work together in the pre-sanction phase:

Brown & Root	Design, procurement & project management services
Trafalgar House	Deck fabrication
Highland Fabricators	Jacket fabrication
Santa Fe	Design & fabrication of the drilling facilities
Saipem	Installation
Allseas	Pipeline procurement & installation
Emtunga	Design & fabrication of the accommodation facilities

Definition of facilities and sanction cost

During the pre-sanction phase all these contractors worked together to define the facilities, agree the scope of work and develop the overall strategy for the post sanction work.

A unique aspect of this activity was that BP and the contractors contributed in a totally open manner to the sanction estimate. This resulted in a joint agreement and commitment to a sanction cost of £373 million for the facilities.

Creation of the alliance

Simultaneously with the above work, BP and the selected contractors created an alliance for the project development phase. This alliance commits all parties to work together in a non-adversarial way and enter into a gainsharing arrangement centred around the sanction cost.

Post-sanction alliance gainsharing

Following sanction, BP and the selected contractors entered into a gainsharing alliance. The principle of the gainsharing is simply that if the facilities are delivered for less than the sanction cost of £373 million, then all the alliance members share the difference between the final cost and the £373 million. Likewise if the final cost is greater than the sanction cost, then all contribute to the overspend.

The Andrew sanction cost of £373 million represents a significant reduction in development costs compared with a 'business as usual' approach. By comparison the 1993 BP estimate for the Andrew Development based on traditional cost norms was approaching £450 million. Additionally this approach led to an unprecedented level of accuracy of +12 percent - 8 percent for the sanction estimate. This significant reduction is a direct result of the adoption of new behaviour by BP and the contractors towards project development.

Major savings have been made in the area of project management, site supervision, documentation, procurement strategy and integration.

Results to date

Andrew was sanctioned by BP and its partners in February 1994. Formal contracts are in place between BP and all the 'Alliance Contractors' listed previously. Also a single Alliance Agreement has been signed between BP and the Alliance Contractors which formalises the gainsharing arrangement.

This, together with the project management team's approach to working in a non-prescriptive, non-adversarial, open and integrated fashion, has transformed the performance of all concerned.

The results to date are, quite simply, lower costs.

The Andrew budget review carried out in October identified an £8 million saving already achieved and a further £15 million potential savings against specific items which the Andrew team is working towards.

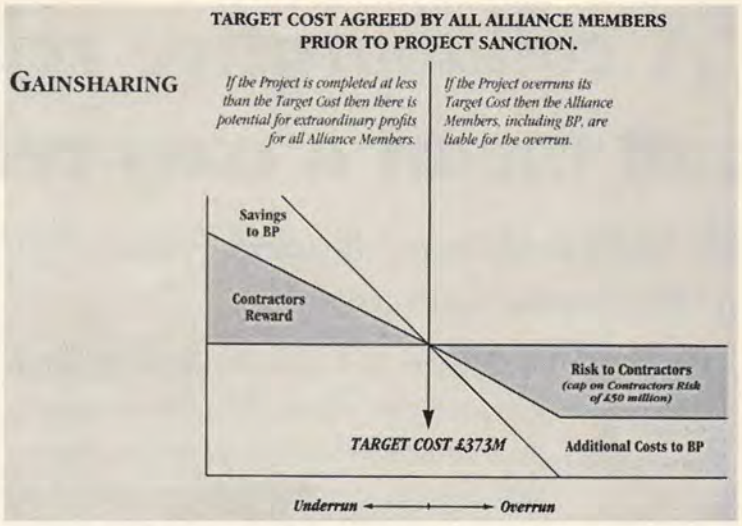
Key success factors

To date the Andrew Project has demonstrated that it is possible to transform the behaviour of a project team in order to achieve a better result.

Some of the key success factors which have been implemented are:

● Having a stake in the overall outcome

The gainsharing mechanism has provided all the contractors as well as BP and its partners with a stake in the overall outcome of the development. This in itself has focused attention on what is important to achieve a reduction in cost and improvement in schedule. There is a commitment from all involved to work together in a new, more productive and efficient manner.



● Adopting a non-prescriptive approach

The 'BP knows best' attitude has been deliberately avoided and contractors and suppliers have been encouraged to propose alternative solutions.

This non-prescriptive approach has provided contractors and suppliers with the freedom to propose creative solutions to technical and commercial issues and has led to a reduction in costs.

● Open attitude

BP has encouraged a totally open attitude amongst all the alliance members. Likewise, all the contractors have worked on the basis of openly discussing issues and problems.

This has been an essential ingredient that has allowed the Andrew team to identify and quickly resolve issues which have in the past blocked progress.

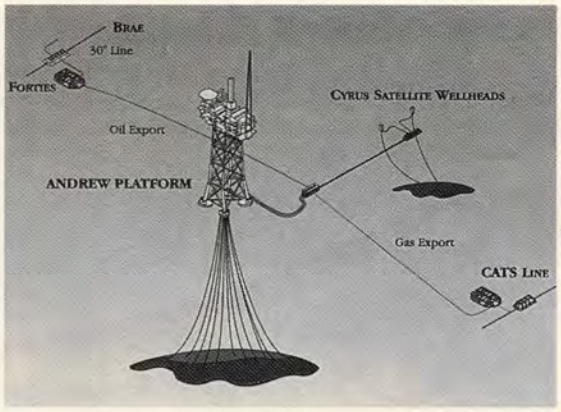
● Integrated team

Because each alliance contractor has something at stake, an integrated team approach has been essential.

Andrew has demonstrated that complete integration across a number of contractors is possible and beneficial. It has reduced project management costs, improved efficiency and added to the overall morale on the project.

The future

The behaviour being adopted on Andrew is proving successful. From our experience we are convinced that the principles described above can be successfully used to reduce cost and improve efficiency in a variety of business applications throughout the oil industry.



This feature is based on a paper given at an IP conference, 'Life after Re-engineering' held last November.

'A collaborative relationship does not mean a cosy relationship'

By Dr Richard Green, Research Fellow, Offshore Management Centre, The Robert Gordon University

The Offshore Management Centre of Robert Gordon University in Aberdeen is studying the growing number of collaborative relationships between operators and contracting companies in the United Kingdom Continental Shelf(UKCS). This article outlines the results of the work to date.

In September's *Petroleum Review*, Susannah Cardy described how operators and contractors have worked together in UKCS fields since the 1960s and how their relationships tended to be adversarial. Resources were often wasted on conflicts rather than on getting the job done. Then, in the 1990s, came change. Driven by pressures to reduce costs in the industry, many partnerings, alliances and new working relationships were announced. These were further encouraged by the CRINE report, which called for the development of collaborative relationships between companies.

The emphasis of these new relationships has been on challenging the way things are done, on gaining extraordinary performance from collaborative relationships and on changing company cultures to enable that performance to be obtained.

Changing contract market

The contract market is changing as companies merge or form close alliances to provide integrated services. Smaller companies are feeling threatened by the growing number of long-term relationships between larger contractors and the operators. Moreover, the operators are working together more and starting to share services such as helicopters and shipping. Some companies appear to have embraced the idea of collaborative relationships wholeheartedly, while others remain suspicious that this is a temporary fad. There is also concern about how partnering and close relationships relate to the EU procurement regulations or to the US anti-trust laws.

What is partnering ?

The American Construction Industry Institute gives a useful definition: 'Partnering is a long-term commitment between two or more organisations for the purpose of achieving specific business objectives, by maximising the effectiveness of each participant's resources. The relationship is based on trust, dedication to common goals and an understanding of each other's individual expectations and values. The expected benefits include improved efficiency and cost-effectiveness, increased opportunity for innovation and the continuous improvement of quality products and services.'

Although the terms 'partnering' and 'alliance' have only been used in the UKCS since about 1990, the idea of close collaborative relationships between customers and suppliers goes back many years.

Since the 1950s, small and medium-sized enterprising suppliers in Japan have worked together in a mutually co-operative atmosphere towards common goals. In the United Kingdom, close working relationships between customers and suppliers in the car and retail industries have been developing for many years. Early examples of collaboration in the oil industry are: the use of an integrated design team for the Clyde Field by Britoil in 1982/83; BP's partnering with Brown & Root in 1990; Shell's 'Win 90s' innovative relationships with drilling companies. The smaller operators in the UKCS, with their low numbers of staff, have also had close and mutually-reliant working relationships with their contractors over many years.

Research at Robert Gordon

Initial research at Robert Gordon University's Offshore Management Centre aims to investigate the relationships which are in place and the factors which make for success. Issues arising from this initial survey will be studied at greater depth in subsequent phases. Discussions with senior managers in the companies involved and examination of published material from 1989 onwards are contributing to the creation of an information base on collaborative relationships. To date, the views of five operating companies have been obtained on about 20 relationships. The questions asked during discussions cover a variety of aspects, including the overall structure of the relationship, the degree of collaboration and lessons learned. Work continues in order to obtain a fuller coverage of operators, contractors and their relationships.

The 20 relationships examined so far include examples of services provided in engineering, well construction, IT, supply of tubulars and accounting. Most have initial durations of five years or more and their values vary from less than £1 million to over £40 million per year. In the majority of cases there was some movement of customer staff to the contractor, varying from just one or two people to over 100.

Contract styles

The majority of relationships surveyed so far have been governed by traditional contracts, with conventional terms and conditions. Many contracts state the intention of the parties to work collaboratively. In a few relationships, short documents describe the spirit of the collaborative relationship and its essential features. The majority of the relationships can be said to be 'open book' agreements where the customer has access to detailed information on the contractor's costs.

Compensation styles in the relationships examined vary, but they can be split into three groups.

The first group contains reimbursable contracts with no incentive structure. In the second group, the contractor's direct costs and some agreed overheads are paid by the customer, but the *profit* payments are at risk because they depend on a range of performance measures. In the third group, profit levels are affected by performance but the compensation style encourages the contractor to reduce the costs of the service. A target cost is set and then cost-savings or over-runs from the target are shared between the customer and the contractor. In many cases the savings are shared equally but in some cases the customer takes a higher proportion of the over-run. Thus both contractor and customer gain if costs are saved and both can lose if costs over-run.

Expected benefits

Reductions in customer costs and manpower are the benefits most often expected from entering into a collaborative relationship. Removal of high fixed overheads and a move to a 'pay as you use' service have also been quoted. The majority of the respondents suggested that they are gaining the expected benefits and several have achieved substantial cost reductions with improved service levels and productivity. There is some concern about how the momentum of improvement can be maintained once the initial large savings have been made.

Communication and openness

Open communication and sharing of ideas, concerns and plans help to maintain trust and team working. Team building sessions at the start of the relationship and during its course were also mentioned by many companies. The importance of having a joint contract management board to give a lead in collaborative behaviour was stressed. The incentive structure, plus sharing of risks, rewards, long term plans, internal performance contracts and reviews of objectives were considered by many respondents to maintain alignment of objectives between companies.

The majority of respondents claimed that open behaviour was the rule in their relationships, especially at senior management level. Some mentioned that at lower levels, including middle management, there is still a climate of suspicion, especially where people feel threatened. Many respondents suggested that information flows freely in their relationship and in some cases the contractor has open access to the customer's information systems.

Developing a relationship

Several operators regard 'cultural fit' with their contractors as being more important in the selection process than commercial considerations. Thorough analysis and planning before the new relationship is implemented is valuable and the business processes affected by the new relationship need to be understood. Clarity of purpose is important when setting up a collaborative relationship and general principles and expectations should be agreed before the contractual detail is discussed. The risks involved in the relationship need to be balanced acceptably between the customer and the contractor.

Openness, honesty and trust are essential during the development of the relationship. Trust at senior levels within the relationship is vital, allowing senior management to set a good example to rest of their staff. It is important that the ideas and benefits of collaborative working are explained to everyone involved and that the intention to work collaboratively is reinforced frequently. A collective desire on both sides to make the relationship work is essential. It is important to realise that it takes time to build up trust and good relations, and that they can be damaged very quickly by inappropriate behaviour.

It is also very important to have an implementation plan for the new relationship which is available to everyone who is affected. The planned time-scales should be realistic and there must be sufficient funding to enable the implementation plan to proceed. The customer must be prepared to assist the contractor during the implementation period, either by training, funding or providing staff.

Maintaining a relationship

Although all the respondents view their present relationships as being collaborative at the moment, many suggested that the relationships are still evolving from initial adversarial positions. Internal politics, poor communication or lack of trust within or between customer departments can threaten the successful working of a collaborative relationship and it is in the customer's interest to resolve these issues. It is very important that the *final* customers for the service are involved in setting up the relationship. Other parts of the supply chain should be involved too – the supply bases, for example. The development of collaborative relationships with contractor companies has often taken place against a background of major restructuring within the customer company. The resulting uncertainty and the multiplicity of changes taking place can seriously affect the smooth development of a good relationship. If implementation is protracted, morale and service levels can drop drastically. It is important that the staff involved are counselled so that they understand what is going on and what the future holds for them.

Behaviour needs to change

Behaviour of both customer and contractor staff must change to allow the benefits of collaborative working to be attained. Staff resistance can severely hinder the development of a good relationship. The customer needs to ensure that its staff have the appropriate interpersonal skills and realise the intention to collaborate. It is important that the contractor is given clear and consistent messages from whoever he speaks to in the customer's organisation. Customer staff must also learn to let go of some of their former activities and contractor staff must learn to take responsibility for them instead.

Monitoring

Both customer and contractor must continue to monitor the performance of their relationship so that novel and cost-saving solutions are pursued where they are available. It is important to be open about mistakes so that lessons can be learned from them. An open relationship allows for harder, more direct discussion and criticism than the traditional relationship. In a collaborative relationship the emphasis is on performance and joint achievement of tough targets. It does not mean a 'cosy' relationship, where nothing is achieved.

This article is a summary of a paper presented at the British Academy of Management's 1994 Annual Conference.

New exploration and production sharing agreements in Libya

By Judith Gurney, Oxford Institute for Energy Studies

A number of foreign oil companies, with the notable exception of American companies, are currently operating in Libya. More activity is expected in 1995 as European companies signed three new important exploration and production-sharing agreements (EPSA) in the last months of 1994. These involve work in fields widely regarded to contain considerable reserves, although the extent to which these reserves are recoverable on a commercial basis is disputed. Agip, the operator of the producing Bouri offshore field, with its estimated 5 billion barrels of reserves, has committed itself to complete the first phase of Bouri's development and apparently to proceed with the second phase. A consortium headed by Repsol will soon begin the long delayed development of the Murzuk field in southwest Libya, estimated to contain 2 billion barrels of crude reserves. And finally, Total and Saga have signed an agreement to investigate the production potential of the Mabruk field in central Libya, with reserves estimated at 1.3 billion barrels.

That foreign oil companies are willing to risk investment in this politically isolated country attests to a belief that Libya has more reserves of good quality crude oil which can be commercially exploited. Presumably this conviction is shared by the Libyan government, although its published estimated proved crude oil reserves figure of 22.8 billion barrels has not been revised since 1986, despite subsequent discoveries and production. (It is often difficult to ascertain if Libyan reserve figures refer to recoverable reserves and/or to reserves in place.) Optimism regarding increased production is based partly on Libya's geological features and partly on the expectation of the effect of the use of advanced recovery techniques on older fields. Most foreign oil companies, however, were unwilling to work in Libya until the Libyan government decided to sweeten the terms it offered them in EPSA contracts.

Libya's Sedimentary Basins

Most of the crude oil fields which were discovered and commercially developed by foreign oil companies in Libya in the 1960s and 1970s are located in the Sirte Basin which covers 155,000 square miles in the central part of the country. This sedimentary basin, which stretches southward from the Gulf of Sirte on the Mediterranean, is a structure of Mesozoic-Tertiary origins with strata of marine clastic and carbonate sediments. It was formed during transgressions and regressions of the seas across the relatively flat North Africa Shelf in prehistoric times.

The Sirte Basin's crude reservoirs are generally carbonates with shale providing the caprock, although those in the southeast, such as the Sarir field in the Calenscio Sand Sea, are sandstone of Cretaceous or Cambrian Age, overlain by thick marine Cretaceous shales.

There are other sedimentary basins of Palaeozoic origins which were not exhaustively explored by foreign oil companies in the heady early days of the extraction of crude oil in Libya. Companies which found ample supplies of good quality crude in their Sirte Basin fields had little reason to invest in searching for other fields further from the coast and far from their existing export pipeline systems. As the industry began to mature, and companies might conceivably have considered going further afield, pricing and profit-sharing disputes with the government decided them against taking on additional commitments.

A second, large sedimentary basin is the Murzuk Basin which lies in western Libya, some 500 miles south of Tripoli in the former province of Fezzan. Murzuk is separated from its northerly extension, the Ghadames Basin, by the Al Qarqaf uplift. Situated close to the Illizi (former Polignac) Basin of Algeria, Murzuk and Ghadames have similar Palaeozoic geological features to Illizi. Early exploration by foreign oil companies in the Ghadames Basin resulted in findings of crude oil reserves which were considered unprofitable. In the 1970s, however, the Libyan National Oil Company discovered several small oilfields in the Hammadah al-Hamra plateau in this basin which it decided to develop. Later, in the 1980s, the Romanian and Bulgarian National Oil Companies made significant discoveries in the Murzuk Basin.

Libya's third main sedimentary basin is the Kufra Basin, which lies in the southeast. Although it contains Palaeozoic strata which are partly marine, it appears to lack suitable hydrocarbon source rocks. It has, however, proved to contain an important underwater reservoir which now forms part of the so-called Great Manmade River Project designed to bring water to coastal areas. To date, no oil companies have shown any interest in the Kufra Basin, although some are currently considering exploration in Chad, which lies close to this basin.

Oil was discovered offshore in the 1970s, primarily west of Tripoli in the Tripolitanian Shelf (known in North Africa as the Pelagian Shelf) which lies off the Libyan and Tunisian coasts. There have also been some minor offshore discoveries in the Gulf of Sirte and near Benghazi, off Cyrenaica, but these

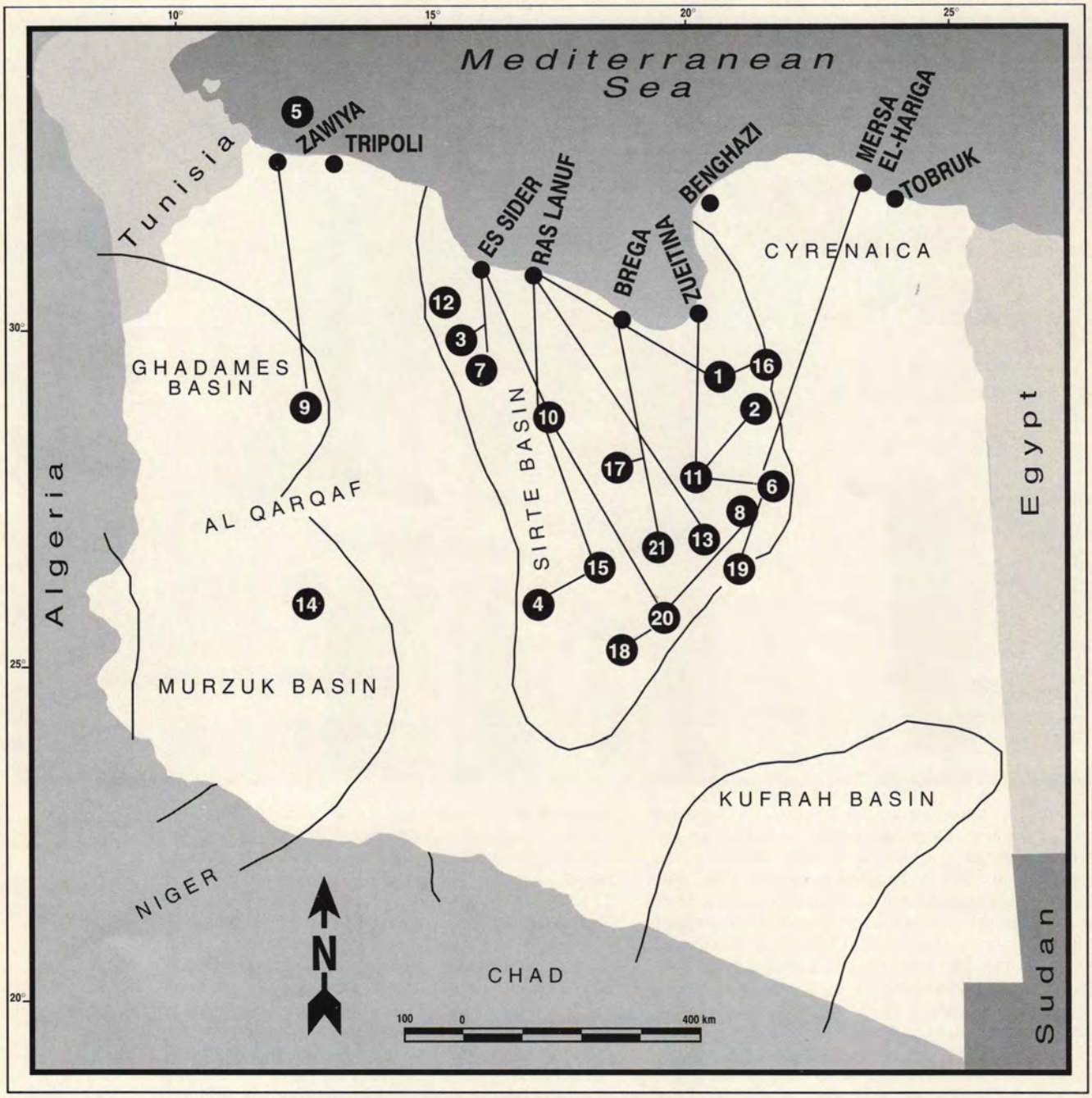
have not yet been proven commercial. Elf-Aquitaine was active in offshore exploration in the 1970s and made several promising discoveries on the Tripolitanian Shelf. It declined to sign an EPSA contract for the development of these discoveries, however, in protest against Libyan intervention in Chad, a former French colony. In 1976, Agip discovered the Bouri offshore field on the Tripolitanian shelf. Bouri is reported to contain 2 billion barrels of crude oil with an API gravity of 26° and 2.5 trillion feet of gas. It has been in production since 1988.

Moreover, there are undoubtedly more, probably small, commercially viable fields to be exploited in the Sirte Basin. The Mabruk field, which Total and Saga will try to develop, is in the west of this basin and Bu Attifel is in the east. Discovered in 1968 by Agip in partnership with the Libyan National Oil Company, Bu Attifel has been in production since the early 1970s and several discoveries of additional reserves have been made in the field in the past few years. Another important relatively new field in Sirte is Messlah, discovered by the Libyan National Oil Company in 1976, some 12 miles northwest of the Sarir field, which was discovered by the BP/Hunt partnership in 1961. Messlah's reserves have been estimated at 1 billion barrels and it has been in production since the early 1980s.

Recent activity

By 1986, when the American government ordered all US oil companies to leave Libya, most of the original foreign oil producers had gone, and the Libyan National Oil Company and its subsidiaries carried the major responsibility for exploration and production. The government had invited selected foreign oil companies to submit bids for EPSA contracts in 1974 and 1980 but the terms attracted few bidders. It was only after 1988 that EPSA contracts offered more favourable conditions, including a more generous production-sharing split and faster payment for contractors. Details of recent individual EPSA contracts have not been made public, but the fact that there have been so many signed since 1988 suggests that the terms are, in fact, attractive to foreign oil companies even though most, if not all, EPSA contracts still require a specified number of seismic studies done and exploratory wells drilled, within a given time period.

There are at least 23 foreign oil companies currently involved in Libya with EPSA contracts. Some began operations prior to the change of government in 1969 and have stayed on. Most of these continue to produce relatively modest quantities of crude from their holdings in the Sirte Basin and occasionally venture further afield, extending in to adjacent areas or getting involved with other companies in new ventures. OMV, the Austrian national oil company, which acquired 25 percent of the Occidental holdings in 1985, and the German companies Wintershall and Veba fall into this category. OMV is involved in the consortium to develop the Murzuk field in southwest Libya and holds participating interests in several blocks in the Ghadames and Sirte Basins, some of which it has held for many years. In 1992, it reported a medium-sized discovery in a block NC-163, 217 miles south of Benghazi, for



MAJOR LIBYAN OILFIELDS

Field	Date of Discovery	Field	Date of Discovery	Field	Date of Discovery
1 — Amal*	1959	8 — Gialo	1961	15 — Ora	1962
2 — Augila	1967	9 — Hammada al-Hamra	1975	16 — Nafoora*	1966
3 — Bahi	1968	10 — Hofra	1958	17 — Raguba	1961
4 — Beida	1959	11 — Intisar (Idris)	1967	18 — Samah	1961
5 — Bouri	1977	12 — Mabruk	1959	19 — Sarir*	1961
6 — Bu Attifel*	1968	13 — Messlah*	1976	20 — Waha	1960
7 — Dahra	1959	14 — Murzuk	1985	21 — Zelten (Nasser)	1959

*** high wax content**

MAIN PIPELINES

Sarir to Mersa el-Hariga	318 miles	Amal to Ras Lanuf	170 miles
Messlah to Ras Lanuf	298 miles	Intisar to Zueitina	132 miles
Waha to Es Sider	267 miles	Zelten (Nasser) to Brega	107 miles
Hammada al-Hamra to Zawiya	236 miles		

which it has submitted a development plan. Wintershall and Veba also continue to produce their long-held fields, with Wintershall gradually increasing its output in recent years from its Sirte Basin holdings. Wintershall has brought forward the development of its As-Sarah field, discovered in 1989 with proven reserves of about 33 million tons.

Agip, another old-timer, is currently Libya's largest foreign producer. In August 1993, it upgraded its existing EPSA contracts to include terms which it considered sufficiently attractive to proceed with the further development of the Bouri offshore field. One report ascribes Agip's production share of Bouri as having increased from 19 percent to 30 percent. Although frequently described as containing 5-7 billion barrels of oil, Bouri's recoverable reserves have been reported by some to be only 500-670 million barrels. Agip is also the operator of the extensive Bu Attifel field in the Sirte Basin whose production it hopes to increase, and it is reported to be trying to acquire new exploration acreage in the Murzuk, Ghadames and Sirte Basins.

Total, which began exploration activities in Libya in 1963, is the operator in the Mabruk field which Exxon discovered in 1959 but left undeveloped due to the highly fractured nature and low pressure of the reservoir and its low gas-oil ratio. The oil industry press has reported that the terms of Total's EPSA contract for Mabruk, finalized in late 1993, included a 20 percent-25 percent profit share for Total, and a 15 percent-20 percent projected rate of return. In mid-1994, the independent Norwegian oil company Saga took a 25 percent stake in the Mabruk field concession, contributing capital and expertise in exchange for a share of future oil produced. Saga is expected to invest $26.23 million in the first three-year phase of Mabruk development, including $13.6 million on exploration and testing in the first year. The first production of an eventual 50,000 b/d or more of 35°-40° API gravity crude oil from this field is planned for 1995.

Total and OMV are partners in the consortium headed by the Spanish company, Repsol, to develop a block NC-115 in the Murzuk Basin. Repsol, with a 20 percent share in the Consortium, will be the operator; Total and OMV are each taking 15 percent shares, leaving the Libyan National Oil Corporation with a 50 percent share. The Romanian National Oil Company, Rompetrol, found 35° API, sulphur-free crude oil in this concession in the mid 1980s. NC-115, with an estimated 950 million barrels of reserves, was declared commercial in 1989, but Rompetrol was unable to raise sufficient funds for its development and sold its holding to Repsol in 1993. A phased development is planned, with output expected of 50,000 b/d - 70,000 b/d within two years, if the 250-mile pipeline to connect Murzuk with the existing 230-mile pipeline from the Hammadah al-Hamra fields to the export facilities and refinery at Zawiya on the coast can be completed quickly.

Petrofina is exploring three areas in the eastern Sirte Basin, south of Zueitina, after finalising a six-year EPSA contract in 1990. Petrofina signed a farm-in agreement with PanCanadian Petroleum for a 15 percent interest in these blocks and subsequently granted participating interests to two other Canadian firms, Westcoast Petroleum and Chieftain International. Petrofina has made discoveries in a block in the eastern part of the Sirte basin; participating interests in this block include Yukong of South Korea and Scirocco Energy of Canada.

Several other Canadian companies are active in Libya. The International Petroleum Corporation was awarded three blocks in the Sirte Basin as operator in an EPSA contract signed in 1989. In 1991, it farmed out interests in these blocks to two British companies, Lasmo, with a 40 percent stake, and Hardy Oil and Gas with a 15 percent stake. In January 1993, IPC obtained three more concessions in the Sirte Basin where it has identified several Palaeocene reef prospects. It is reported to be delaying drilling of these concessions, however, because of difficulties with transferring money into Libya. Another Canadian firm, Husky Oil, is involved in a consortium with Brazil's Braspetro and OMV in blocks in the Sirte and Ghadames Basins. Lasmo, meanwhile, has entered into a joint venture, as the operator, with the South Korean state-owned Petroleum Development Corporation (Pedco) in a 1991 EPSA agreement for two concessions, one offshore in the Gulf of Sirte and the other onshore in Block NC-174 in the Murzuk Basin where it has found some oil. Another UK firm, North African Petroleum Limited, was awarded a block in the Sirte Basin in 1991.

East European companies have been active in Libya for a number of years but financial weakness has made it difficult for them to profit from their discoveries. The Bulgarian National Oil Company, Geokom, which had concessions in both the Ghadames and Murzuk Basins, discovered oil in Block NC-101 in the Murzuk Basin in the 1980s, with estimated reserves of 600 million barrels, but the Bulgarian government has insisted that Geokom divest itself of all its Libyan concessions. Rompetrol sold its interest in the Murzuk field to the Repsol Consortium in 1993, and the former Yugoslav firm INA-Naftaplin, which acquired two concessions, one offshore Tripoli and the other in the Sirte Basin, in 1989, has been hampered in working these by problems arising from the conflict in the former Yugoslavia.

A risky business

There are, of course, obvious risks for those embarking on operations in Libya under present circumstance. Even if a company should discover a field containing abundant crude reserves production may present serious problems made much worse as a result of the effects of UN sanctions on the importation of materials, equipment and process licences. The climate and terrain of the interior is harsh, and the distances from the coast are generally great, especially for discoveries in the Murzuk or Ghadames basins. Many Libyan reservoirs require water injection even at the start of production and this often means that sea-water must be piped in across the desert and the oil produced must undergo a desalination process. There is also the possibility that the crude found will be waxy as many currently producing Libyan fields, including Sarir, Bu Attifel, Messlah, Amal and Nafoora, produce waxy crudes. These pose problems regarding oil-gelling and wax deposition if the temperature falls below their high pour points. Looking on the brighter side, Libyan crude is virtually always light, sweet and contains little sulphur; a prize presumably worth the risk for some oil companies .

New onshore production in Yorkshire

By Geoffrey Mayhew

A £30 million project, the onshore Ryedale Gasfields, scheduled to start production late last month, comprises three small adjacent fields in North Yorkshire. Kelt Energy plc, the operator, is confident that a fourth will be found in its nearby acreage and become part of the same chain of development. If so, Mr Paddy Spink, Director, says the cost of bringing it into production will be minimal. They will make a start with the plan in 1995.

Gas processing unit at Ryedale, Yorkshire. PHOTO: PETER SMITH

While it is more than one year since a UK onshore field came on stream, the first drillings for coalbed methane have put pressure on technical costs, as Mr Henry Boyd, of the United Kingdom Onshore Operators Group, points out.

'Other small fields are likely to come on stream because coalbed methane has driven operators to consider the use of new technology and methods in order to reduce costs,' he said.

'If a 2,000-3,000 feet well can be drilled for £150 for coalbed methane, that must make economic a number of small gas discoveries which will be useful for gas distribution or power generation.'

There were no oil or gas discoveries onshore in 1991 or 1993, and the issue of six onshore exploration licences out of Round in 1993 caused some to wonder if Onshore Rounds were a matter of the past. However, it is understood that another Onshore Licensing Round is likely to take place later this year.

Ryedale gas

Ryedale's gas generates electricity on the 10-acre low-profile site and this is exported direct to the national grid via a short overhead power line. The customer, Scottish Power, was expecting this first production to help cover its Hogmanay surge in demand.

Based on current operations, the supply has an estimated life of 10 years at a continuous production rate of 10 million cubic feet of gas a day. Each of the production wells could meet the daily production requirement, should that be required. The fields are between one and five miles from each other and a single six-inch diameter buried pipeline takes the products from four wells to the gas gathering, processing and generating station a further five miles away.

Malton, Kirby Misperton and Marishes produce sour gas and liquid condensate, and water, from Permian limestone some 4,000-5,000 feet below the surface. The flow is subject to dehydration on entering the processing area, the water being sent back to the reservoir by a three-inch diameter pipeline. An injection well is located at Kirby Misperton.

The liquid condensate is taken out on entering the power generation site and this joins the water for re-injection. In addition, there is a Sulphur Removal Unit placed immediately before the gas enters the gas turbine generator. The sulphide content of the gas is small – some 0.1 per cent or less.

Kelt also produces gas at Caythorpe, on Humberside. This field produces sweet gas and after processing it is transported by pipeline to the British Gas installation at Rudston for distribution through the regional system.

At Ryedale, however, Kelt and its partners concluded that a power generation scheme would be the best technical route – for environmental, engineering and economic reasons.

'We wanted a simple, compact and low-profile plant with virtually no emissions and which would be acceptable in the rural landscape - and yet still be a commercial proposition,' said Mr Spink. 'It is surprising how difficult the unit is to see from a field away. We also constructed a landscaped bank to camouflage the site.'

On Kelt's behalf, great care was taken by an independent consultant in siting the processing and generating plant. It had to be at least 500 metres from any habitation. Grade 1 and 2 agricultural land was excluded, as was any proximity to Nature Reserves or to tourist activities. A Public Inquiry was held in 1992 and 12 months went by before consent to proceed was given to Kelt, acting for partners DSM, Tullow Exploration and Edinburgh Oil & Gas.

The exported gas is metered as it enters the gas turbine. This is the point of sale for the owners but by agreement Kelt is the operator of the whole site, including the turbine which is the property of Scottish Power.

The present processing plant would be sufficient to meet a substantial increase in production. If a second generator was required, the generating site would be able to accommodate it, subject to planning consent.

'Ryedale is a complex, unique formation and will have to stay continuously on basic load supply in order to operate at best efficiency,' said Mr Spink.

'It is more a question for the Ministry of Foreign Affairs'

Journalist Christopher Pala interviewed Kazakhstan Oil Minister Nurlan Balgimbayer last November in Almaty. The minister talked about negotiations with the Russian government over the use of pipelines and Kazakhstan's plans to sell crude to Iran.

Christopher Pala: Russia is seeking veto power over the exploitation of underwater mineral resources in the Caspian Sea and has threatened to take 'appropriate measures' against shore states that unilaterally start drilling. How are you going to deal with this threat to Kazakhstan's Caspian Shelf Consortium?

Mr Nurlan Balgimbayev: We have formed a consortium of seven companies. There was a presentation in Houston. These companies have started working on the shelf, they have chosen a president, they have hired people and started geophysical exploration and have already done exploration work on 20,000 square kilometres. As far as the issue of Russia's participation and that Russia is against Kazakhstan's participation in negotiations, it is more a question for the Ministry of Foreign Affairs rather than the Minister of Oil and Gas because the status of the Caspian Sea needs to be defined. As far as I know, ministers recently gathered in Baku and discussed this issue. What have we done on our part? Last week, we signed a protocol with the oil ministry of the Russian Federation in which we expressed the opinion that we do not object to Russia's participation in conducting geophysical exploration and probably later in drilling and oil production also on the Caspian Shelf.

Kazakhstan is currently negotiating with Russia its quota of oil that can be moved in Russian pipelines. Do you expect an increase in that quota for 1995?

In our meeting with Rosneft last week, we also included in the protocol provisions for the exchange of oil between Kazakhstan and Russia. And for the first time, in the last two years, we have been able to export 1.6 million tons/year from the Actyubinsk oilfield through a pipeline that goes directly to Orsk (just north of the Kazakhstan border in the Urals) bypassing Samara. Earlier, Orsk was not included. From the total amount of 10 million tons/year to Samara, we are releasing 1.6 million. Thus, we have the opportunity to increase our quota of Tengizchevroil (TCO) oil.

TCO has requested 5 million tons of oil for 1995. We are sure we can give this quota to TCO and we have 5 million tonnes for our own sales to the FSU and abroad.

Calculations were made jointly with US, Kazakhstan and Russian specialists on the capacity of the pipeline to Samara. They showed that because Tengiz oil is less viscous, it is possible to increase the flow up to 40 percent. Thus, instead of 10 million tons, we can export around 13 million tons/year. So at the end of 1995, when the TCO will be able to produce 6 million tons/year, we should be able to increase the flow correspondingly in 1996. That is how Kazakhstan can give the TCO the requested 5 million tons/year.

Negotiations over the financing of the new pipeline to Novorossisk seem hopelessly deadlocked over financing. Do you think the issue will be resolved in 1995?

The consortium was created three years ago between Kazakhstan, Russia and Oman. So far, there are no results as far as financing is concerned but recently there has been some progress. In particular, the European Bank for Reconstruction and Development has indicated it was ready not only to take the function of co-ordinator of the project but also to cover with its own money 50 percent of the pipeline cost in exchange for 25 percent of the shares – conditions that TCO agrees to.

On 10 November, [Russian Prime Minister Viktor] Chernomyrdin and [Chevron Chairman Kenneth] Derr met in Moscow. There is some progress. Then on 24 November, Mr Chernomyrdin is going to Oman to meet with the Sultan and one of the issues will be the pipeline. Here in Kazakhstan we look at the pipeline very optimistically and think there will be progress.

Currently, we are developing good relations with Russia. Our new government, and our Prime Minister [Akezhan Azhegheldin], have already met Mr Chernomyrdin and Mr Shafranik [Minister of Fuel and Energy of the Russian Federation]. I think that together, Kazakhstan and Russia, with the goodwill of Chevron and of the world community, can start construction of the pipeline to Novorossisk in 1996 despite all the obstacles.

The oil and gas law has not been presented to parliament yet but already there are objections. What do you think of this law?

The law has been worked out by oil specialists in the cabinet and President [Nursultan] Nazarbayev has sent it to the supreme soviet. On 17 November, the law will be discussed at the co-ordination council of the supreme soviet and on the 23 November it will be discussed by the full parliament. I am optimistic here too that the law will be adopted very soon and will improve our image before potential investors in the oil sector. The law will remove many difficulties facing western oil companies.

Kazakhstan is planning to sell Iran 2 million tons/year of crude that will be shipped across the Caspian Sea in Iranian tankers. Are you afraid that if there is an oil spill, this could threaten the Caspian Shelf project where pollution is a major question?

We have received an invitation from the government of Iran that they are ready to provide their tankers for transportation to Iranian terminals. A group formed of specialists from TCO and our ministry went to Tehran to discuss this issue. The problem is that Iran requested to buy only Tengiz oil but it is very difficult to do that technologically. Our proposal is to mix Tengiz oil with heavy oil from the Mangishlak region and deliver it to Iranian ports. We are working on solving the problem. This is one of the alternatives for exporting our oil that we are looking at. As to whether we are afraid of having an accident with one of the tankers that will endanger the Caspian Shelf project, during the Soviet era we used to transport 5 million tons/year from the Buzachi oilfield in Mangishlak to Baku and we never had an oil spill. So here one must be optimistic. If we are afraid of everything, we would never do anything.

Timor Sea turns up trumps

By William Scholes

The long-expected replacement for Australia's declining Bass Strait oilfields has been found in the Timor Sea where the Laminaria 1 oil discovery has confirmed its status as a major oilfield.

Laminaria 1 in the Northern Territory administered Permit AC/P8, 69 kilometres west of the Elang oil discovery, flowed 7,500 barrels of light crude from a test combining 23 metres at the top of the 102 metres oil column with a lower five metre zone. Oil reserves in the range of 300 million recoverable barrels are suggested, much larger than Woodside's Wanaea field which is being developed in the North West Shelf region.

The latest discovery is of similar size to Elang and the first of at least four almost identical structures now located by BHP within the Elang permit. Elang flowed 5,800 b/d from a depth of 3,000 metres and fuelled speculation of a discovery of up to 60 million barrels.

Laminaria has been hailed as the most exciting oil prospect since the heady days of the mid-1960s when the Esso-BHP partnership discovered the Bass Strait fields.

Success after earlier delays

The latest round of exploration in the Timor Sea was delayed for more than two decades while Australia and Indonesia finally settled the seabed boundary between the two countries. The settlement produced the Timor Gap zone of co-operation area, with joint management by both countries. The time taken to reach the settlement caused major delays in assessing the region's oil and gas potential.

Now, after a dozen wells and the departure of some of the explorers, BHP and Woodside have become the key beneficiaries of a new geological understanding of the area, leading to more sharply focused well site selections and success. Woodside's interest in permit AC/P8, which contains Laminaria, is 50 percent. BHP and Shell Development Australia each hold 25 percent.

The first Laminaria 1 drill stem test conducted over the interval 3,292-3,302 metres over a 10-hour period produced a low gas/oil ratio of 40 cubic feet of gas per barrel and an oil flow of 5,900 barrels a day.

No water was recovered with the oil, suggesting that the well has contacted a high point in the reservoir, despite the 102 metre total oil column intersected between 3,207 and 3,309 metres.

The test produced the oil, measured at a specific gravity of 59° API, through a half-inch choke with a well-head pressure of 960 psi during the 10-hour flowing period. Insignificant amounts of hydrogen sulphide were recorded. Higher zones in the oil column will be tested later in the programme.

Elang discovery

The Elang 2 well, within the Timor Gap zone of co-operation area in permit ZOCA 91-12, is currently being cased by BHP prior to testing to confirm the oilfield discovery made in the Elang 1 wildcat.

BHP has up to six more wells on the drawing board for the ZOCA 91-12 permit. The first is likely to the Baguio structure, which straddles the border of ZOCA 91-12 and 91-13 and could be drilled this year.

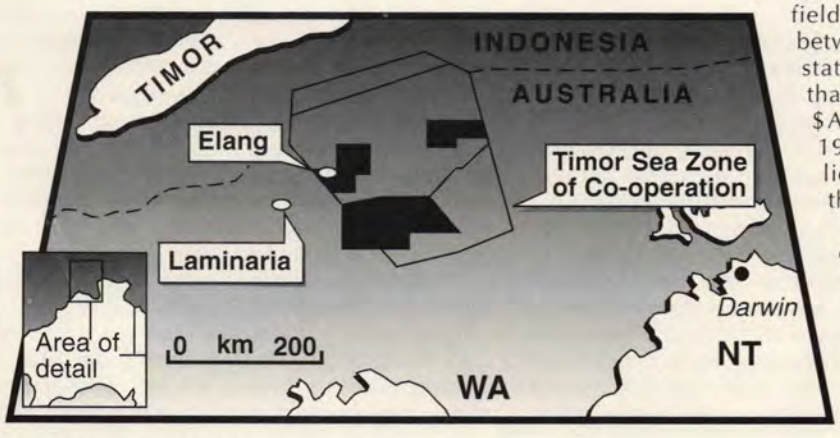
Immediately following Baguio is likely to be the Kakatua 1 wildcat, located northwest of Elang but testing similar objectives in the principal host Flamingo formation.

Other wells planned include Kaladin, another Elang look-alike; Bebek 1, southwest of Elang; Bayu 1 adjacent to Baguio and dependent on the first well; and Jalak 1, which will test Tithonian age sands adjacent to the ZOCA 91-13 border.

The finding of an estimated 200–400 million barrels of oil in the Elang and Laminaria fields off the northwest coast of Australia is the end of a costly odyssey for BHP Petroleum. Before the latest discoveries, its oil reserves had been falling because of the run-down of the fields in the Gippsland Basin in Bass Strait, between the Victorian coast and the island state of Tasmania. After spending more than a billion dollars on exploration and $A2.6 billion on acquisitions between 1986 and 1994, BHP had about 94 million barrels less oil and liquid reserves than it had in 1986.

So, 1994 was a welcome year when the company's reserves rose dramatically following the discovery in its own backyard.

Overall, however, the Timor Sea remains under-explored – only 100 exploration wells sunk, compared with more than 4,000 in the North Sea, an area of similar size.



Independents carve out a North Sea stake

By Geoffrey Mayhew

As the North Sea matures and financial rewards diminish, the majors are moving aside and allowing independents to share the spoil. Technical know-how and shorter lead times are just two advantages on offer from the smaller companies.

Of the £10.7 billion invested in UKCS oil and gas production projects starting in 1993/94, some £2.7 billion was raised by independent companies. These companies are participants but, for the most part, do not have an operating role offshore. In contrast, back in 1974 when oil first began to come ashore, there were few non-operating participants.

Some £1 billion of this 1993-94 money came from companies which belong to the Association of British Independent Oil Exploration Companies (BRINDEX). The large sum highlights the increasing influence and growing financial stake of the non-operating participants, not only in exploration but also in development and production.

'Independents dominate in Liverpool Bay'

Traditionally, the independents' role has been stronger in exploration and their co-operation at this initial stage has always been praised for its usefulness. But people within the industry are now reporting that this co-operation has been increasing steadily in the subsequent stages of development and production – the period when large sums are required and long-term financial commitments have to be made to support very important decisions.

'We will see more of this, with non-oil companies and new entrants such as PowerGen and Far Eastern companies entering the arena,' said Mr Gary Howorth of Arthur Andersen Petroleum Services. 'There could be high returns for those wishing to develop small fields with subsea technology. The average internal rate of return (IRR) of these smaller developments could be around 30 percent - assuming no difficulties arise. The net present value will be small, but this is likely to be attractive to smaller companies.

'Historically, the smaller companies have been more exploration-oriented. They have also been excluded from field operatorship by the financial commitment required. For example, to develop a field, something like £200 - £300 million used to be spent on development. If a company wished to be an operator it had to take at least 20 per cent of the investment and also have the credibility to operate a platform on behalf of itself, its partners - and the government. That is not easy. Subsea development, however, will enable smaller players to become operators with less financial commitment but, of course, with less reward.'

Domination in Liverpool Bay

BRINDEX estimates that 17 percent of the total current production of hydrocarbons on the UKCS (some 666,000 boe/d) is financed by participating independents. In 1984 such investment accounted for just nine percent of production. 'This role could expand as the North Sea grows in maturity and the independents acquire a larger share of the remaining smaller and satellite developments,' said BRINDEX Chairman Malcolm Gourlay. He added that independents are also active in the newer exploration areas of Liverpool Bay, where they actually dominate, and even West of Shetland, the new frontier region.

'In exploration, there has always been a recognition that non-operating partners in joint ventures have technical strength,' said Dr George Watkins, Chief Executive of Conoco (UK). 'It has been rare for a participant not to have a technical view. Because of that, there has tended to be a great deal of interchange on technical viewpoints and debate about the best path forward. This has created a form of teamwork that has benefited all the partners. You may end up with one viewpoint but this is because the dialogue has resulted in a superior technical case which everyone accepts.

'It has not always been the same in development and production. Naturally, operators like to feel they are chosen for their technical and commercial capability and should take the lead in defining the development concept. However, they also recognise that the basis on which they operate is as the agent of the field owners.

'Unfortunately, the owners may not always share the operator's opinion on how a development should proceed. Not all these differences may be technical; some may reflect different needs in terms of cash flow and timing of investment. While each of the partners will undoubtedly put a value on the undeveloped oil or gas field in which they share ownership, their views on how to realise this value can be very different. It has not always been easy for the operator to move ahead with field development unless these differences within the partnership are recognised and reconciled in some manner.

'Over recent years there has been a move towards involving all the partners in a team which seeks to define the most effective and economic development. Today it is more often the case that the operator leads a team comprising representatives from all the partner companies who wish to participate in this process. A prime example of this teamwork is the Britannia development where Chevron and Conoco act as joint operators.

'This philosophy of co-operation is also flowing over to potential new development areas such as West of Shetland where, because of the arduous operating environment, it may be essential for companies to combine their resources to achieve the economy of scale needed for economic development in the area.'

'BP, to its credit, has brought together a number of companies with acreage West of Shetland with the object of discussing a co-operative approach to future exploration and development,' Dr Watkins pointed out. 'It must make sense for companies to talk with one another about how such an area can be developed successfully.'

Statoil (UK) began to invest in the British sector in 1987 and is currently a participant in some 20 exploration licences. Its stakes as a non-operating participant in field developments range from five percent in Jupiter, to 10 percent in Victor and 45 percent in Hyde.

'Small stakeholders have influence'

'The North Sea was developed without many of these smaller participants but they are becoming increasingly important as a consequence of the region's maturity,' said Mr Ian Sutherland, Development and Production Manager at Statoil (UK). 'Our role varies from licence to licence. Typically, development requires unanimity and therefore, even with five percent, you can influence decisions. However, when it comes to operating and optimising fields in production, it is important that participants have the necessary resources and expertise to meet their responsibilities.

'The UK sector was becoming more mature with less opportunity, but the findings in the north-west frontier make it a more business-balance area. Including our assets in the southern North Sea, Central Graben and our long term investment in Tranche 8 in the frontier with Total as operator we have a good balance. We are also the operator under a frontier exploration licence in the Irish Erris and Slyne fields with Union Texas and Rimrock as license partners.'

Some UK licences, however, have large numbers of participants which, according to Mr Sutherland, can be difficult to manage because of conflicting interests.

'Different companies have different commercial interests which can conflict with their partners,' he said. 'One company may own the platform and the reservoir but may not have an interest in the pipeline or the onshore terminal.'

Mr Alan Higgins, Alba Asset Manager, believes that the eight participants in the Alba project all played an integral part in the overall scheme. 'They were involved in all decisions and went on inspection visits for quality in Scotland, Spain and Holland. As a group they have been offshore several times, twice in 1994. They have shared the good news and the bad news.

'As we came on stream, there was a problem with a new type of crude, with a gravity of 19. We asked if any participant had any experience of this. Oryx Energy sent a heavy oil specialist from the United States to work onshore and offshore for a week. His report endorsed the actions we were taking. It was a demonstration of participant involvement.'

'Four BRINDEX members have now become fully-fledged North Sea operators'

Reduction in lead time

BRINDEX, which has 18 members, believes that the ability of independents to explore and exploit assets which are marginal for large companies encourages all to get the best from the acreage. Among the fields which independents have helped to discover, they say, are Angus, Argyll, Blenheim, Buchan, Beatrice, Bruce, Douglas, Fife, Glamis, Gryphon, Hamilton, Ivanhoe/Rob Roy, Lennox, Miller, Nelson, Ravenspurn North, Scott, Thistle and some early discoveries West of Shetland.

The main contribution these independents believe they can make is in reducing the lead time between confirmation of commerciality and first oil and gas production. Low oil prices and abolition of relief under PRT has made this imperative in their opinion.

They point to cost-effective solutions they have initiated and believe that a symbiotic relationship has grown between the large and smaller companies. That four of its members, Clyde, Enterprise, Lasmo and Premier, have become North Sea operators shows their growing maturity.

Photos courtesy of Chevron

'Whether as operators or as non-operators, BRINDEX members believe fervently that there is an important role to be played by non-operating participants in the future development of the UKCS,' said Mr Gourlay, who is Chairman of Clyde.

Ireland attracts the exploration dollar

Ireland has made substantial progress in enticing international companies to explore its waters, members of the IP's Irish Branch were told at their 1994 Annual Dinner. The speaker was Secretary of the Department of Transport, Energy and Communications, **Mr John Loughrey**, *and his speech provided a concise and upbeat overview of the country's petroleum industry.*

Exploration

You will no doubt have seen the recent references to the discovery of gas and oil in the exploration well just completed in the St. George's Channel. This is a particularly welcome development for Ireland's petroleum industry in that the well was on a cross-border prospect and was located very close to the boundary line between the Irish and UK Continental Shelves.

This is an important discovery and must provide an additional incentive to those who already have an interest in the Irish Offshore. Further work, including seismic and hopefully an appraisal well at a later stage, will need to be done to appraise this accumulation so that a decision on its possible exploitation can be taken. Of course, with our attractive licensing and tax terms even small accumulations can now be produced commercially in Ireland.

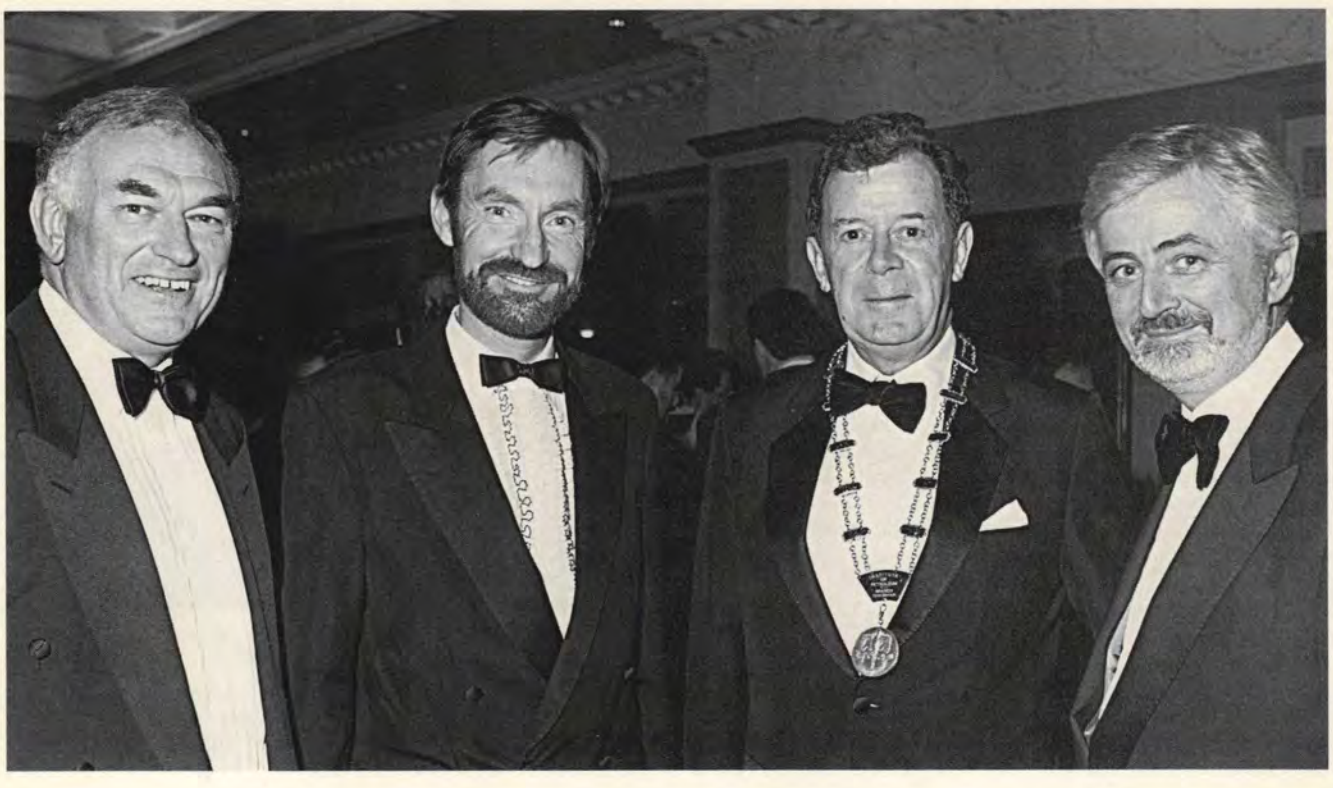
The taxation measures and the Licensing Terms introduced in 1992 have placed Ireland in a very competitive position on the world scale for attracting the exploration dollar. Since the 1992 Terms were announced, 12 exploration licenses have been awarded covering some 50 blocks or part blocks. The number of major exploration companies now turning their attention towards offshore Ireland gives me confidence that this renewed interest will result in a significant increase in exploration activity in the coming years.

Last year, we had the Frontier Licensing Round in the Slyne and Erris Troughs off the north west coast of Ireland. The positive response to this round, with 10 companies in five groups being awarded licenses over 28 blocks, was very encouraging. The Slyne Erris Round signalled both the return of a number of oil companies to Ireland and introduced a number of new companies to the country. I am therefore confident that there will be a very positive response to the Porcupine Round. This Frontier Licensing Round was announced on 5th January 1994 and covers 172 blocks. There is a significant amount of technical data already available on the area which can be used by interested companies.

Turning to gas distribution, it is heartening to note that Bord Gais plans to have natural gas available to 40 percent of Irish homes by the end of the decade.

Downstream

The major issue in the downstream oil industry is to find a balance between maintaining essential



From L to R: Ian Ward, Dr Pat Shannon, Gerry McManus, John Loughrey

security and encouraging a competitive market. We are conscious that pre-tax prices for oil are above the European average but recognise that our particular set of circumstances contribute to this situation. It is only to be expected that our location and the structure and characteristics of the Irish market give rise to differences with the main markets of Europe. Nevertheless, in the most recent published survey of pump prices, Ireland is the fifth cheapest for petrol, being about eight percent below the European Union average.

The Whitegate mandatory offtake regime is no longer a significant factor in high pre-tax prices in Ireland. Its impact on final retail prices is now estimated to be less than 0.4 pence a litre, far less than price variations among suppliers. Nevertheless, the government has accepted the recommendation of the Culliton and Moriarty Reports and the regime will therefore be terminated by the end of 1996.

The Irish National Petroleum Corporation is currently engaged in a commercialisation process involving significant capital investment at the Whitegate refinery which, allied to marketing initiatives, will enable it to compete with market prices. This initiative will enhance our energy security and will lead to reduced prices for petrol, diesel and home heating oil thereby contributing to the competitiveness of the Irish economy. Joint venture possibilities for a major refinery upgrade will continue to be explored.

Security of supply

A cornerstone of policy at European and OECD level has been the holding of strategic stocks for use in times of emergency. We are obliged, under EU legislation, to hold oil stocks equivalent to 90 days of national consumption. The existing system whereby oil companies here have prime responsibility to hold strategic oil reserves has not worked satisfactorily and a large proportion of these oil reserves are held by INPC. In a competitive market, the cost of stockholding must be made transparent and separated from commercial pricing.

In the light of the difficulties experienced with the current system and to ensure equal treatment of all participants in the downstream market, a revised stocks policy is currently being put in place. Under the proposed new arrangements, oil companies will no longer be obliged to hold strategic stocks over and above normal commercial stocks. A National Oil Reserves Agency will be established which will have responsibility to ensure that our 90 days EU stockholding requirement is met. This new agency will be empowered to hold stock on its own account and to enter into stockholding agreements with other parties to hold stocks on its behalf. The costs incurred will be funded through a levy on all sales of oil products payable by oil companies. I am hopeful that the arrangements can be brought into force early in 1995.

FORTHCOMING EVENTS

January

10th-11th
Aberdeen: 'Successful and Cost-Effective Abandonment'. Details: IIR Ltd: 28th Floor, Centrepoint, 103 New Oxford Street, London WC1A 1DD.
Tel: 0171 412 0141
Fax: 0171 412 0145

11th
London: 'Modelling in Oils'. Details: Robert Simons, Mathematical Programming Study Group.
Tel: 0525 852660
Fax: 0525 852654

15th-17th
Oman: 'Third Annual Middle East Petroleum & Gas Conference (MPGC '95)'. Details: PO Box 1736, Raffles City Post Office, Singapore 9117.
Tel: (65) 256-9341
Fax: (65) 254 5628

16th-20th
Leeds: 'Spark Ignition Engine Emissions'. Details: Miss Julie Charlton, Department of Fuel and Energy, University of Leeds, Leeds LS2 9JT.
Tel: 0113 233 2494
Fax: 0113 233 2511

20th
London: 'Competition in Gas: New Challenges in an Evolving Market'. Details: Lisa Inch, Marketing Executive, The Economist Conferences, 15 Regent Street, London SW1Y 4LR.
Tel: 0171 830 1154
Fax: 0171 409 3296/ 931 0228

23rd-24th
London: 'Maintaining a Profitable Presence in The North Sea Oil and Gas Industry'. Details: AIC Conferences Ltd, 2nd Floor, 100 Hatton Gardens, London EC1N 8NX.
Tel: 0171 242 1548
Fax: 0171 242 2320

23rd-25th
France: 'Essential Elements of Finance for the Oil and Gas Industry'. Details: Ms Josée Foucault, ENSPM-FI, Economie et Gestion, 232 avenue Napoleon Bonaparte, BP 311, 92506 Rueil-Malmaison Cédex, France.
Tel: 33 1 47 52 72 93
Fax: 33 1 47 52 70 66

24th-26th
Cairo: 'Egypt Gas Seminar'. Details: Roger Hughes, Overview Conferences, 82 Rivington Street, London EC2A 3AY.
Tel: 0171 613 0087
Fax: 0171 613 0094

25th
London: 'Marine and Noise Vibration'. Details: The IMarE Conferences Department, The Institute of Marine Engineers, The Memorial Building, 76 Mark Lane, London EC3R 7JN.
Tel: 0171 481 8493
Fax: 0171 488 1854

25th-26th
Aberdeen: 'The Future Development of the North Sea and Atlantic Frontier Regions'. Details: Conference Officer, OCS, 34-36 Apsley End Road, Shillington, Hitchin, Herts.
Tel: 0462 712049
Fax: 0462 711889

25th-26th
Hong Kong: 'GasTrade '95'. Details: Mrs Nicola Chaplin, Conference Administrator, GasTrade Ltd, Bracken View, Hawridge Common, Chesham, Bucks HP5 2UG.
Tel: 0494 758121
Fax: 0494 758802

26th-27th
London: 'Refinery Loss Control Training Course'. Details: Melissa Wright, SGS Redwood Ltd, Cornwall House, London Road, Purfleet, Essex RM16 1PA.
Tel: 0708 866855
Fax: 0708 868994
Telex: 23361 SGSLON

26th-27th
London: 'Exploiting Opportunities and Future Developments in Power Generation & Supply'. Details: IIR Ltd, 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD.
Tel: 0171 412 0141
Fax: 0171 412 0145

30th-31st
London: 'UK & European Gas; Price, Supply & Demand'. Details: Monique Quant/Nicola Coslett, Bookings Department, IBC Financial Focus Ltd, 57/61 Mortimer St, London. W1N 8JX
Tel: 0171 637 4383
Fax: 0171 323 4298

31st-1st
Haugesund, Norway: 'Gas Transport Symposium '95'. Details: Gerd Jaeger, Norwegian Petroleum Society, Sandslimarka 251, PO Box 95, 5049, Sandsli, Bergen, Norway.
Fax: (47) 55 22 89 80

February

6th-9th
France: 'Financial Management in the Oil and Gas Industry'. Details: Ms Josée Foucault, ENSPM-FI, Economie et Gestion, 232 avenue Napoleon Bonaparte, BP 311, 92506 Rueil-Malmaison Cédex, France.
Tel: 33 1 47 52 72 93
Fax: 33 1 47 52 70 66

6th-10th
Houston: 'Reservoir Geology for Engineers'. Details: OGCI Training, Inc., PO Box 35448, Tulsa, Oklahoma 74153-0448, USA.
Tel: 1 800 821 5933/1 918 742 2334
Fax: 1-918 742 2272

7th-8th
Amsterdam: 'Identifying & Seizing Opportunities in Europe's Changing Gas Market'. Details: European Gas Strategies 95, Administrator, ICBI, 2nd Floor, Market Towers, 1 Nine Elms Lane, London SW8 5NQ.
Tel: 0171 344 3830
Fax: 0171 344 3860

7th-8th
Poland: 'The 3rd International Conference on Chemicals in Central and Eastern Europe'. Details: Expoconsult, PO Box 200, 3600 AE Maarssen, The Netherlands.
Tel: 31 3465 73777
Fax: 31 3465 73811

9th-10th
Denmark: 'Offshore Pipeline Technology'. Details: Nadia Ross, IBC Technical Services Ltd, Gilmoora House, 57-61 Mortimer Street, London W1N 7TD.
Tel: 0171 637 4383
Fax: 0171 631 3214

13th-16th
Washington DC: 'Energy and the Environment'. Details: US Geological Survey McKelvey Forum, Mail Stop 934, Denver Federal Center, Box 25046, Denver, CO 80225-0046.
Tel: (303) 236 5769
Fax: (303) 236 8822

20th
Birmingham: 'The Petroleum Officer's Course'. Details: Petroleum Training, Suite 1, Morley House, 314 Regent Street, London W1R 5AB.
Tel: 0171 255 2335
Fax: 0171 255 1828

21st-23rd
London: 'Scada Oil & Gas Workshop, Conference and Exhibition'. Details: Energy Logistics, 1 Gorse Road, Cookham, Berks SL6 9LL.
Tel: 0628 525492
Fax: 0628 521928

21st-24th
London: 'Static and Dynamic Measurement of Crude Oil and Petroleum

FORTHCOMING EVENTS

Products'. Details: Melissa Wright, SGS Redwood Ltd, Cornwall House, London Road, Purfleet, Essex RM16 1PA.
Tel: 0708 866855
Fax: 0708 868994
Telex: 23361 SGSLON

22nd-23rd
London: 'Offshore 95: Design and Safety Assessment for Floating Installations'. Details: Fleur Heapy, Conference Organiser, The Institute of Marine Engineers, The Memorial Building, 76 Mark Lane, London EC3R 7JN.
Tel: 0171 481 8493
Fax: 0171 488 1854

27th 3rd
Oxford: 'The Structure and Economics of the International Petroleum Industries'. Details: The Registrar, The College of Petroleum and Energy Studies, Sun Alliance House, New Inn Hall Street, Oxford OX1 2QD.
Tel: 0865 250521
Fax: 0865 791474

March

1st-3rd
Vietnam: 'PetroVietnam '95'. Details: Reed Tradex, 16th Floor, BB Bldg, 54 Asoke Road, Bangkok 10110, Thailand.
Tel: 662 260 7103 8
Fax: 662 260 7109
Telex: 22030 XTRADEX TH

6th-7th
Singapore: 'Global Fund Management'. Details: International Herald Tribune, Conference Office, 63 Long Acre, London WC2E 9JH
Tel: 0171 836 4802
Fax: 0171 836 0717

11th-14th
Bahrain: 'SPE 9th Middle East Oil Show & Conference'. Details: Will Martin, Overseas Exhibition Services Ltd, 11 Manchester Square, London W1M 5AB.
Tel: 0171 486 1951
Fax: 0171 486 8773

20th-21st
London: 'Terminal Operation and Static Measurement'. Details: Abacus International, 214 Inchbonnie Road, South Woodham Ferrars, Essex CM3 5WU.
Tel: 01245 328340
Fax: 01245 323429

22nd-23rd
London: 'Flow Metering and Meter Proving'. Details: Abacus International, 214 Inchbonnie Road, South Woodham Ferrars, Essex CM3 5WU.
Tel: 01245 328340
Fax: 01245 323429

20th-24th
Zurich: 'Multiphase Flow and Heat Transfer'. Details: Prof. G Yadigaroglu, ETH-Zentrum/CLT, CH-8092 Zurich, Switzerland
Tel: 41 1 632 4615
Fax: 41 1 632 1166

26th-31st
Florida: 'Corrosion '95'. Details: NACE International, 1440 South Creek Drive, Houston, Texas 77084-4906 USA.
Tel: 1 713 492 0535 ext 81
Fax: 1 713 579 6694

27th-29th
Houston: 'SPE/EPA Exploration and Production Environmental Conference'. Details: Fred Herbst, PO Box 833836, Richardson, TX 75083-3836, USA.
Tel: 1 214 952 9393
Fax: 1 214 952 9435
Telex: 163245 SPEUT

27th-31st
London: 'Wellsite Geology'. Details: OGCI Training, Inc., PO Box 35448 Tulsa, Oklahoma 74153-0448, USA.
Tel: 1 800 821 5933/1 918 742 2334
Fax: 1-918 742 2272

Investors should listen to what all Cubans say

By Maria Kielmas, Editor, LATOIL

Cuba's first oil exploration round since 1959, which was presented in February 1993, was received by potential foreign investors with a mixture of joy and relief. Not only were Cuban fiscal terms undercutting those of all other Latin American countries but there was an unambiguous provision for international arbitration in contracts. The concept of international arbitration has been the subject of major political battles among Latin American politicians and no country in the region provides this facility in its entirety. Just prior to industry presentations in Calgary and in London, the Cuban government also gave the impression of heeding investor worries on fiscal matters by abolishing an 11 percent royalty. European, Canadian, Latin American and even some Far Eastern executives were overjoyed at the opportunity to invest in a country without US competition, which has been barred ever since the imposition of the 1962 US embargo.

Welcome opportunity?

Though Cuba's tantalising geology made it resemble northern Morocco with source rock, exploration here was an opportunity no company could afford to miss. But few oil investors considered at the time, and few do today, that Cuba's anachronistic political situation and disintegrating economy would in any way affect oil exploration, except to provide more incentives for the investor. But which investors? This misreading of political signals, and current foreign investors unwillingness or inability to listen to what Cubans say about themselves, aside from the government propaganda machine, may cost dear.

A heavy oil discovery in Block 10, located offshore of Cárdenas Bay and operated by Canada NorthWest, in association with Talisman Energy, gave the Cuban government the first opportunity to trumpet the success of its exploration round. The Cup-IX well flowed 3,750 b/d of 16° API crude, an oil quality superior to production from the nearby Varadero field, which is between 10° and 11° API. But the well is reported to have cost about US$20 million to drill to 10,670 feet encountering 'the mother of all circulation problems' when drilling through carbonate layers in two thrust sheets. No decision had been taken in late November about further drilling. The consortium is also producing incremental volumes from the Varadero, Las Pinas and Boca de Jaruco fields. The crude is about 14° to 20° API and the consortium is understood to be paid between US$6 to US$7 per barrel by the state oil company, Cubapetróleo (Cupet).

Chicken King

The Canadian find focused attention on acreage held by Oil for Development (OFD), a company owned by Gérard Bourgoin, a French national and Europe's second largest chicken farmer, popularly known as the 'Chicken King'. Mr Bourgoin reportedly negotiated exploration deals with President Fidel Castro, over beef and Chablis in his private jet, for five onshore blocks: 7, 12, 13, 14 and 15. Blocks 12 and 14 were the subject of negotiations in 1992 between Cupet and Brazil's Braspetro but were subsequently abandoned. Work commitments for OFD here included shooting 1,700 km of seismic by September 1994. In addition he contracted to shoot 500 km offshore of Block 2 and a further 1,000 km offshore of Block 4. Havana sources say that this seismic is now complete and Mr Bourgoin, who has since sold his chicken empire to his daughter to concentrate on Cuban exploration, is preparing to drill his first well. But there was some concern among oil investors with the news that OFD had also obtained an enhanced oil recovery (EOR) contract for the Varadero field to produce at reservoir levels below that being exploited by the Canadian partnership.

French drilling

Another French operator, Compagnie Géofinanciére, was preparing to test its Puerto Escondido-4 well in Block 7 in late November. The company has an EOR contract for the Yumurí and Puerto Escondido fields but tends to regard the PE-4 well as a wildcat, given the poor quality of existing technical information and earlier Cupet drilling practice which resulted in mud invading formations. Oil shows started at 500 metres in PE-4 and continued all the way down the hole but with differences in API, up to a blow-out, quickly controlled, at 1,200 metres. Unusually, there has been no sulphur content identified in the crude so far. Other wells in the Puerto Escondido field have registered 7 percent sulphur content in the crude.

Sharp differences in crude quality and sulphur content are the norm in Cuba. Earlier wells in Total's Block 9, located on the Santa Clara coast north of Varadero, registered flow rates of 4,000 b/d of 60° API crude while another well close by flowed 50 b/d of 11° API. 'This is just the tip of the iceberg,'

says one professional working in Cuba, 'and it can be truly awful, you just don't know where you are in time or place.' The problems of unravelling Cuba's mangled geology have been compounded by the practice, common in other former East Bloc countries, of poor records, outdated technology and a concentration on qualitative rather than quantitative analysis. The lack of any political reform and real international contact over the years since 1959 means that professionals are not of the quality they could be. Cupet, like other state companies in Cuba, is run by politically acceptable personnel from the Ministry of the Interior and under the control of the armed forces. Meetings with foreign companies are supervised by political commissars similar to the practice in the former Soviet Union in the 1960s.

The US embargo against Cuba brings further problems since all oilfield services tend to be monopolised by French or Canadian contractors. Some executives have said that this adds 25 percent to 30 percent on costs. Seismic costs range between US$10,000 to US$15,000 per kilometre, though some operators claim cheaper rates. Seismic mobilisation costs are between US$250,000 and US$300,000 while logging is between US$10,000 and US$30,000 per suite. Well costs range between US$3 million and US$6 million to 2,500 metres, assuming no problems.

There were unconfirmed reports in late November that Total was considering quitting Cuba after drilling two dry holes on Block 9. But other companies are continuing. The Premier Consolidated/British Borneo consortium had just completed seismic on Block 21 in November, though industry sources believe that targets below an ophiolite sequence in the region will be visible. British Borneo meanwhile was completing negotiations for onshore Block 11, close to the city of Cienfuegos. Sweden's Taurus Petroleum has been seeking farm-in partners for its blocks 5, 6 and 7, where it had been granted an extension to its exploration period and has yet to shoot seismic. A Canadian company, Angler Petroleum International, was reported to have been granted an option on an unnamed block and was seeking avenues to exploration funding on the stock markets.

Cuban market

Cuban domestic oil production is estimated at about 15,000 b/d. Government statistics are regarded as unreliable by foreign companies, however, and have tended to be contradictory. Last July the government reported that oil production had reached a record 600,000 tonnes for the six-month period to July, while in August it reported that seven-month production was 566,000 tonnes and that 27 percent of gas production had been 'wasted by the commercial sector.'

Precise figures for oil imports are equally unclear. Up to 1989, 95 percent of Cuban oil imports came from the former Soviet Union through a three-way swap with Venezuela and at times Ecuadorian crude, and were based on barter for mostly sugar as well as smaller quantities of nickel ore. The 1989 imports totalled 270,000 b/d of crude and products but dropped dramatically to 190,000 b/d by the summer of 1991, the year when the USSR began to charge its Comecon partners and other client states in hard currency. Re-exports of Russian crude earned 30 percent of Cuba's export revenues up to the mid-1980s. The oil price drop of 1985-86, on top of existing structural weaknesses in the Cuban system, and not as commonly assumed the end of communism, was the trigger for the country's present economic crisis.

Throughout the 1980s Cuban-Soviet relations were marked by much angry megaphone diplomacy but the Soviet aid to Cuba (US$4 billion to US$5 billion annually) increased, in particular during the Gorbachev era. The Cuban government frequently announced that Soviet oil supplies and/or assistance had been cut off but this was part of a disinformation campaign aimed at evading international debt payments. As of this year, Cuban foreign debt to the West is some US$8 billion and that to Russia, which absorbed Soviet debt, is reported to be US$24 billion. (The debt was contracted in roubles which at the time were officially accounted for as equal to the US dollar).

'The price drop of 1985-86 was the trigger for the country's present economic crisis'

Disinformation about Cuban-Russian economic relations continues. In early November the Russian media reported that an oil-for-sugar deal had been cancelled unilaterally by the Russians. This was part of a 1993 agreement for oil supplies which would supply 3.3 million tonnes of Russian oil in exchange for some 1 million tonnes of sugar. Further supplies on the same basis were contracted with Kazakhstan (1.5 million tonnes of oil) and Iran (1 million tonnes of oil.) The Russian deal was not ratified in Moscow until March 1994 at which point the fuel supply fell to 2.5 million tonnes, at a time when the Cuban sugar harvest was falling due to fuel and fertilizer shortages as well as storm damage.

The 1993 deal, which also provides for 24 Russian, mostly oil, companies to conduct joint ventures in Cuba, was promoted by Aleksandr Shokin, who until his resignation in early November was regarded as pro-Western and pro-free market. Mr Shokin was in charge of negotiating repayment by former client states of their debt to Russia and has supported debt-for-equity deals. Even after Mr Shokin's departure, the Russian government announced a deal to continue use of the radar base on Lourdes on Cuba's north coast at an annual payment to Cuba of US$200 million, through supplies of spare parts and energy. The base will be used to gather economic rather than military intelligence, the Russians say. Some political observers have suggested that Russia has been subjected to considerable US pressure to end its trade with Cuba. But this could also be a disinformation ploy. The United States and Cuba have a mutual interest in maintaining stability in Cuba even though this 'stability' will disintegrate eventually.

Foreign exchange worries

Oil executives are becoming concerned about Cuba's foreign exchange situation but even these

figures are unclear. The Cuban sugar ministry has announced two years running that falling sugar harvests will cost the country US$1 million in export earnings each year, although total foreign currency earnings for each of these two years have been only US$1.7 billion. Measures ordered by US President Bill Clinton to limit expatriate remittances to Cuba are expected to cost Cuba US$500 million. Foreign oil executives in Cuba are beginning to worry that as the government's foreign exchange falls, they will face either payment delays for production or increased taxation. Although there are contractual guarantees that the terms will not be changed for oil investors, such guarantees in Cuba have always been meaningless in the face of arbitrary government decisions.

'But US policy towards Cuba is in a gridlock'

What if ...?

The big imponderable facing investors in Cuba is what happens after Castro. As the government has opened the economy to foreign investment, so political repression has increased to its worst in 35 years, human rights and dissident groups of all political persuasions inside Cuba assert. The foreign investment dollars do not filter down to the population but circulate within a favoured group of party apparatchiks and army officers. The pent-up frustration within a Cuban population which is mostly poor, black and passive is on the point of explosion, the internal dissidents say. Anti-government riots in August last year were the first such sign.

For the internal dissidents, including those on the left, the US embargo is an irrelevance. What matters is that a transition to democracy through the removal of President Castro to a comfortable Spanish exile should be enabled. As the Castro government began to persecute its former privileged supporters, such as writers, salsa singers and ballet dancers, even the liberal establishment in the United States, who had formerly supported a lifting of the embargo, have said that the embargo should stay in place as long as there is no political reform. But US policy towards Cuba is in a gridlock since there is no conceivable political advantage for Washington to lift the embargo unilaterally. In the 1970s when Washington developed contacts with various Eastern European countries, this was done on the assumption that they were distancing themselves from Moscow. With the end of the Cold War, this ideological excuse no longer exists. Meanwhile the much-trumpeted economic reforms which have been introduced in Cuba are even less than reform in countries such as Poland and Hungary in the late 1950s. Independent Cubans say they are aimed at keeping the current government in power and foreign exchange and nothing more.

What the future holds

Most of the pressure to lift the US embargo comes from companies wishing to invest in Cuba. Countries such as Britain, Mexico, France and Spain have been positioning themselves in investment accords with Cuba more as a response to the 1993 Cuba Democracy Act, or Torricelli Act, which tightened the US embargo by prohibiting US companies in third countries to do business with Cuba. The British and other governments regarded this step as an unjustified US interference in their sovereign trade policy and have reacted accordingly. But now many western business executives say that they believe that a lifting of the embargo will enable a smooth transition to a market economy.

Cuban exiles and internal dissidents say openly that these investors are fooling themselves and that the country is on the verge of a blood bath. The hardline Miami-based Cuban American National Foundation and other more moderate exile groups in Europe have said continuously that a post-Castro government will confiscate assets of current foreign investors and return them to their pre-1959 owners. The exiles, such as the equally hardline Madrid-based Union Liberal Cubana, say also that accords between Russia and Cuba should continue. A multitude of legal claims on this are already pending in the United States. It could be in the political best interests of a post-Castro government to ignore as many of the present government's obligations as possible. Some oil executives have taken this on board and say that they fear that a 'wall of US money' could surge into a post-Castro Cuba should Washington make aid contingent on investment opportunities for US companies. But as current foreign oil explorers do not own anything apart from the right to explore for a number of years, the biggest change that a post-Castro government could introduce would be lease negotiations with the old landowners.

However, President Castro remains in power and no internal opposition is strong enough yet to displace him. Insurgency groups, such as the Florida-based Alpha 66, which claims to have agents in Cuba, is seen as militarily inept. Only the army has enough strength. But the armed forces run industry, foreign investor relations and the greater part of the agricultural sector. The opening of so-called 'private' peasants' markets, has been devised especially as a money-earner for the military, not peasants. Even the lower ranks of the army are receiving hard currency allowances in a government effort to ensure loyalty, and that presumably when the time comes, they will shoot at their own people.

Internationally, the image of Cuba as a 'victim' of the US embargo, a feeling widespread among foreign oil executives too, is due to President Castro's unsurpassed talent for manipulating the modern media. The British historian, Hugh Thomas, wrote that Fidel Castro's revolution succeeded not because of ideology or military prowess but because pre-1959 Cuba was a sophisticated society rich enough to ensure the largest per capita distribution of televisions in any Latin American country, and which worked to Fidel Castro's advantage. With US policy on Cuba in a straightjacket, and President Castro's survival still unquestioned, current investors in Cuba have a breathing space. But no investor should assume that the next government in Cuba will still want to do business with him when many new offers will be waiting in line.

The European Energy Charter Initiative

Presentation by Clive Jones, Secretary General of the Conference on the European Energy Charter

The Energy Charter Treaty has been negotiated between 50 countries, including nearly all the countries of Europe, East and West, and of the former Soviet Union region. The Treaty will create an international framework of legal safeguards within which companies can invest, operate and trade in the energy sector. This will be the first multilateral Treaty of such wide scope for one particular economic sector – a fundamentally new approach. It will also be the first substantial multilateral Treaty between East and West since the Cold War ended (see Petroleum Review, August 1994).

History and objectives

The history of the European Energy Charter initiative began with a suggestion by the former Prime Minister of the Netherlands, Ruud Lubbers, at a European Council meeting of the heads of government of the 12 EC countries in June 1990. He put forward the idea that the best way to help the Soviet Union (as it then was) would be to establish a cycle of real economic activity in the East, rather than trying to deal with the economic problems of the former Soviet Bloc through massive amounts of international aid. He suggested that the right place to start would be the energy sector, where there was a natural complementarity between the massive energy resources and energy systems of the East, and the resources of industrial strength, technology and investment funds available in the West.

It is therefore essential to recognise that, from the start, the objectives of the Charter initiative go far beyond energy policy.

The EC heads of government welcomed Mr Lubbers' idea and the European Commission was asked to study how to put it into effect. In February 1991 it came up with the idea of a European Energy Charter. Because that was a concept which went far beyond the European Community itself, the Community called together an international conference in July 1991. That first meeting appointed Ambassador Charles Rutten from the Netherlands as Conference Chairman, and myself as Secretary General in charge of an international secretariat which has organised the negotiations since that time.

The first round of negotiations on the Energy Charter (which it is important to distinguish from the Energy Charter Treaty) went well, and it proved possible to sign the Charter at a ministerial conference in The Hague in December 1991.

To underline the scope of this exercise, the European Energy Charter then and subsequently has been signed by 50 countries, as well as the EC itself. The 50 countries are the 12 members of the EC, all the other countries of Western Europe, all the former Communist countries of Central and Eastern Europe except (for obvious reasons) some areas of the former Yugoslavia; the three Baltic Republics; three countries in the Mediterranean area; and all 12 independent Republics of the former Soviet Union. As well as these countries four major OECD countries outside Europe are also signatories – the United States, Japan, Canada and Australia.

The Charter is essentially a political declaration that the signatories will co-operate in promoting mutual investments, trade etc in the energy field. It reflects the original Lubbers proposal by putting its emphasis on the role of the industry and on the creation of an open international energy market throughout Europe, and indeed beyond.

Since the key to the success of the Charter initiative will be industry's willingness to invest and operate in the East, it was essential that we should go beyond the Charter and create a framework of legal safeguards for companies' operations – similar but in some ways more ambitious than the safeguards already in existence in the West. Political declarations are not enough to create industrial confidence. It was therefore recognised in the Charter itself that a legally binding agreement needed to be negotiated. The Energy Charter Treaty will be that agreement.

The Energy Charter Treaty

I would like to make two points clear. Firstly, it is important to recognise the nature of the Charter initiative. This is not an aid programme. Nor is it an attempt by governments to plan energy developments. Nor is it an attempt to regulate industry. The best way to think of the Charter Treaty might be to regard it as an instrument for determining the behaviour of governments towards industry; entered into voluntarily but bindingly by the governments concerned.

Secondly, the main reasons for needing to negotiate new safeguards for industry did of course lie in the East, where companies were faced with a rapidly changing situation in which laws governing the private sector were often still being written; responsibilities between different authorities were still unclear; and attitudes towards foreign investment were a matter of political controversy. The Charter and the Charter Treaty are designed to remove these uncertainties. But it is important to recognise that the Treaty is impartial between East and West. Its safeguards will apply to Russian companies investing in the North Sea, as well as to

Before Mr Clive Jones gave the Lothian Lecture, Edward Price was presented with an IP Student Prize. Pictured here are (left to right) Professor Alistair MacFarlane, (principal and Vice-Chancellor, Heriot-Watt University), Mr Clive Jones, prize-winner Edward Price and Mr Bob Edmondson (IP Education Liaison Manager).

British companies investing in Russia, or come to that British companies investing in Japan.

Turning now to the content of the Treaty, I would like to concentrate on investment and trade.

Investment

The investment rules of the Treaty are remarkably ambitious and represent a very considerable success for the negotiating process. Some of the protection provided for foreign energy investors is based on the OECD Investment Code. But even there it has been something of an achievement to extend those rules to Eastern countries and, what is more, to make the rules legally binding, which in OECD they are not.

But the investment provisions in Article 10 of the Treaty go well beyond OECD rules in two particularly important ways. Firstly, the Treaty embraces all agreements reached between investors and governments in the energy sector, whether entered into before or after the Treaty is signed. The significance of this point is that any company which encounters a breach of such an agreement by its host government will now be able to have recourse to the Energy Charter Treaty's arbitration procedures – in effect adding a new enforcement mechanism to agreements signed before the Treaty had even been thought of.

The other striking aspect of the investment part of the Treaty is the concept of 'National Treatment', a jargon phrase which simply means that governments must treat foreign energy investments at least as well as the investments made by their own national companies. In other words, once established in a country, a foreign 'Charter' company must not be discriminated against in any way.

This is of course a very powerful incentive for companies wondering whether to commit their resources to an overseas venture in the energy field. It is worth adding that the concept of National Treatment has for some years been under discussion in OECD, between Western countries, without any agreement being reached. The successful negotiations of National Treatment in the Energy Charter Treaty shows very well, I believe, the advantages of concentrating on one particular sector of the economy, rather than trying to negotiate common investment rules for the whole economy.

Not everything has been a success. We also tried very hard to negotiate the concept of non-discriminatory National Treatment for the 'pre-investment' phase, or in other words for the right to invest – for instance the right to explore for and produce oil. The problem was that many Western countries wanted exceptions to that rule for their existing 'national preference' laws. Even in the United States, for example, foreign companies are not allowed to own nuclear facilities. In some Western countries, for instance Norway or Canada, national preferences are far more widespread.

At this stage of the discussions Russia made the very reasonable point that, if Western countries insisted on exceptions to National Treatment for their existing laws, it would be fair to allow Eastern countries the same privilege. But the difficulty was that Russia and others did not yet have all their laws in place. The solution to this dilemma, after much discussion, was to postpone negotiations on national treatment at the pre-investment stage. The Charter Treaty commits its signatories to negotiate a second Treaty providing such treatment before 1 January 1998.

The Treaty does, however, allow any country that wishes to do so to commit itself voluntarily to accord National Treatment at the pre-investment stage. Such commitments, although voluntary, will be legally binding and irreversible.

Trade

On trade, the approach followed in the Energy Charter Treaty is fairly simple, but again ambitious in scope. Put briefly, the Treaty will have the effect of treating those signatories that are not members of GATT as if they were GATT members – only of course for energy trade. In other words, the probable GATT membership of countries such as Russia at some future time is being anticipated as far as the energy sector is concerned. This means, broadly speaking, that the non-GATT countries will, for energy, have all the rights of GATT membership but also accept the obligations of GATT membership.

In one respect under the trade heading we tried to go beyond GATT, by introducing a 'tariff standstill', or more strictly speaking a ban on any signatory country raising, in future, its import or export duties on energy products. In the end this limitation was only accepted on a voluntary rather than a legally binding basis, but the signatories have committed themselves to begin negotiations next year on legally binding 'standstill' rules.

Other Treaty provisions

Among the many provisions of the Treaty, I would like to mention four points in particular – transit, the environment, transitional measures and dispute procedures.

Transit is a particularly important question for investors. It is no use for a company to have the right to invest in energy production and the ability to trade that production in the world market, unless it can send the gas or electricity or oil which it produces through third countries to the markets of its choice. A good example of this would be a company producing natural gas in Russia and wanting to sell that gas in Austria, after transmission by pipeline through, for instance, Ukraine and Slovakia. The Treaty requires governments to allow such transit or, in the event that the necessary transmission capacity is not available, to allow such capacity to be built on its territory – subject, naturally, to the usual planning procedures.

It is also important to mention that the Treaty forbids countries, in the event of some dispute (eg on transport tariffs), to interrupt an energy transit that is already taking place, without first submitting the dispute to laid down conciliation procedures. Energy transit is a key issue, particularly in the former USSR region, and this Treaty will be the first to lay down such specific rules at the international level.

The Treaty also contains an Article committing its members to responsible behaviour in the energy environment field. To some extent this is soft law but the important point, in my view, is that this Article will set the scene for environmental concerns to be an integral part of the policy discussions in the future Charter Conference. There will also be a Protocol on Energy Efficiency, to be signed at the same time as the Treaty, committing its signatories to co-operate in that field.

The concept of transitional measures is included because it will simply not be feasible for all the countries of the East to change their economic and administrative systems overnight. In the end, however, the requests from Eastern countries for transition periods on particular Articles have turned out to be far fewer than Western countries imagined or feared. In fact the transitional measures which have been requested will have little effect on the Treaty's impact.

Lastly, it is important to stress that the Treaty has teeth. Its commitments are enforceable. If a company believes that it is not being treated in accordance with the Treaty by its host government, it can take that government to international arbitration. Alternatively it can ask its parent government to do so on its behalf. This is obviously a key point in ensuring investment confidence.

Next steps

The Treaty is to be signed at a Ministerial Conference in Lisbon on 17 December, the third anniversary of the signature of the original Energy Charter. The legal step before signature was the adoption of the Treaty text, which required the agreement of a two-thirds majority of the negotiating countries. That majority is certain to be achieved.

The Treaty will not come into full legal effect until 30 countries have ratified it. That might perhaps take a year or slightly longer. But in the meantime most of the countries concerned have agreed to apply the Treaty provisionally from the time of signature, subject to any limitations in national constitutions or laws.

The work of implementing the Treaty should therefore begin this year. The Charter Conference will become a standing body meeting two or three times a year to review progress. It will be supported by a Secretariat which is required to co-operate with other international organisations in the energy field and make maximum use of their work.

In closing, I would like to stress again that the significance of the Charter initiative goes far beyond the energy field. The Treaty will, of course, by encouraging investments and energy trade, improve energy supply and security in the European and world markets. But it will also yield major environment benefits by promoting the transfer of technologies and know-how in the energy efficiency and energy environment fields.

Thirdly, the Treaty will create major business opportunities for both Eastern and Western companies, at a time when such opportunities are badly needed.

But above all the Treaty will give substance to the original concept and objective of the Charter, which is to underwrite economic prosperity and political stability in the countries of Eastern Europe and the former Soviet Union, by catalysing a cycle of real economic growth.

This paper was given as the 1994 Lothian European Lecture at Heriot-Watt University, Edinburgh, on 22 November 1994. The lecture was sponsored jointly by the university and the IP Edinburgh and South of Scotland Branch.

'Business/school links help the environment'

School children across the country are learning about, and benefiting from, the environment in a number of practical ways, thanks to the charity Groundwork and its supporters from industry.

Groundwork is an environmental partnership organisation active in 120 towns and cities. By encouraging partnership, community involvement and practical action, its environmental programmes help communities improve the social and economic prospects of their area.

Groundwork operates in four main areas:

- Education and involvement of the community
- Physical environmental improvements
- Conservation of national resources
- Integration of the economy and environment

Environmental education and community involvement are growing areas of importance and currently account for 30 percent of the activities. These educational programmes provide young people with an understanding of and interest in their own environment. They also learn how their local area relates to the global issues affecting the whole planet.

Groundwork is taking environmental education beyond the pond-dipping exercises of nature study classes. They use the local resources provided by the school or workplaces, which are often next door to the school.

By encouraging the natural enthusiasm of children and working with them and their teachers, local companies and other partner organisations are helping to ensure that the next generation of consumers, managers and decision-makers understand the issues that will affect their future. The joint programmes make a positive contribution to the development of sustainable lifestyles and Groundwork has many examples of innovative ideas which enable communities to meet the UK commitments made at the Rio Summit in 1992.

Currently they have four education programmes sponsored nationally.

Esso Greenlink

Esso Greenlink is the largest and longest running environment programme in schools.

The programme raises young people's awareness of the importance of industry to the community. It also demonstrates how individual businesses are responding to the environmental challenge.

Delivered through the National Curriculum, Esso Greenlink encourages children of all ages to look at a company's impact on the environment. In some cases the children make recommendations that lead the company to make cost-effective environmental improvements. The range of environmental issues covered includes: energy, waste disposal, recycling, 'duty of care', transport, wildlife, life cycle analysis and pollution.

Esso UK plc is one of the main sponsors of Groundwork's school-industry link programme.

Martin Tims, Education Programmes Manager of Esso said, 'We like Groundwork's programmes because they help students to realise that there are no pat and simple answers to the many environmental problems facing industry. They encourage a broad and balanced view and, of course, businesses have had a unique opportunity to see at first hand how our education system works and how they can play a positive role in helping to develop its future.'

GreenIT

GreenIT, sponsored by RTZ, improves the physical environment of business sites and enables young people to play a leading role in practical landscape regeneration. They consult with the participating businesses as a 'client' and establish a design brief and budget. Pupils then use computer-aided design to research proposals for the design and costing of site improvements. They have input from professionals and suppliers who act as consultants. Pupils then 'sell' their design to the business client and persuade them to put it into practice.

GreenIT gives children the opportunity to work in 'real life' situations with adults other than teachers and to find out how industry operates. Business is able to forge links with the local community and its potential future workforce. The projects are extremely 'user friendly', offering teachers a step-by-step guide to delivering and assessing many aspects of the National Curriculum including mathematics, technology, citizenship, art and drama as well as the more usual link to geography.

Schools can apply for a GreenIT pack which contains all the information a teacher will need to set up the scheme, together with a very helpful video. A helpline is also available for schools. The programme is seeking to establish over 750 links of this kind around the country that will have long lasting environmental benefit for local communities. Currently in its third year, GreenIT involves more than 86 companies and schools and approximately 5,000 children of all ages.

Farmlink

Following the success of pilot links between farms and local schools set up under the Groundwork New Countryside Initiative, the Ministry of Agriculture, Fisheries and Food (MAFF) agreed to fund a three-year programme to develop and expand the scheme in seven areas.

Much of the trespassing and vandalism suffered by farms is due to lack of awareness by people who do not realise the damage they cause by walking across fields or fly-tipping.

Farmlink aims to improve the situation by helping young people understand the work of farmers and the problems they face.

Schools and farmers feel the best way to achieve all these benefits is through a long-term partnership, rather than single visits by schools.

Esso YES

Schools in 12 areas of the country are signing up to continue an experiment inspired by Esso and Groundwork.

The Esso Young Energy Savers (YES) Programme ran a pilot programme in Berkshire schools last year. Here children have been learning about the need to preserve the world's finite fuel resources. Through interesting and colourful experiments, they are implementing practical energy saving measures both at school and in their own homes.

As Stanley Goodchild, Chief Education Officer for Berkshire, pointed out 'Energy efficiency inevitably results in financial savings. With schools now responsible for their own budgets, they will be interested to find ways of freeing additional funds to spend on things they need for the classroom.'

This year pupils, governors and staff in 200 primary schools will work together to implement ways to reduce fuel bills, deliver the National Curriculum and make important improvements to the school's impact on the environment at the same time.

The schemes are operated through local area units. However, contact can first be made to Groundwork's head office in Birmingham on 021 236 8565.

Queen's anniversary prizes for oil related work

Heriot-Watt University's Department of Petroleum Engineering and Aberdeen College were among the first winners of the new Queen's Anniversary Prizes for Higher and Further Education, announced last November. The prizes were established in 1993 as part of the official programme of celebration of the 40th anniversary of the Queen's accession and will be awarded every two years.

The prizes will be presented by Her Majesty the Queen in recognition of outstanding educational achievement in areas of service and benefit to the nation. The 21 prizewinners were selected from over 200 entries. Newly independent further education colleges were competing against established universities. Winners Chippenham College and Croydon College provide examples of how local colleges are building close links with industry.

The citation for Heriot-Watt's Department of Petroleum Engineering reads: 'Its educational and research activity for the oil and gas industry is world-class. Model co-operation and collaboration with exploration companies at demanding new engineering frontiers.' Professor Adrian Todd, Head of the Department of Petroleum Engineering, commented: 'Our mission is technological education and innovation in collaboration with industry, in pursuit of ever safer, more efficient and environmentally acceptable exploitation of economically vital oil and gas reserves.'

Aberdeen College's award stems from their training courses relating to explosion risk. In collaboration with the oil industry they have pioneered the development of courses for people involved with the installation, maintenance and inspection of electrical equipment on North Sea oil rigs. Their citation reads: 'This is pioneering training of a very demanding nature in an exceptional and hazardous field. A national success with international relevance.'

Award winners will be authorised to display for three years a specially designed logo approved by the Queen.

The Queen's Anniversary Prizes for Higher and Further Education Award to Heriot-Watt University for outstanding excellence in technological education and research.
(Left) Professor Adrian Todd, Head of Department of Petroleum Engineering, Heriot-Watt University
(Right) Professor Alistair MacFarlane, Principal and Vice-Chancellor, Heriot-Watt University

Spreading the CRINE word

A practical two-day course and follow-up workshop have been established to enable staff within companies to drive through the changes required for CRINE to succeed. Real experiences of the delegates within their own workplace will be used to help them to understand the practical problems of traditional cultures as well as the relevance and value of the new industry culture and initiatives related to CRINE. This will enable them to help drive through within their own organisations the changes necessary to ensure that the UK offshore industry continues to reduce its costs and be competitive in the world market-place. The course was commissioned by the Training and Education Work Group of CRINE and the first courses will be held in London and Aberdeen during the next few months. They will be run by the Offshore Management Centre at the Robert Gordon University and details are available from Alison Wilson on 0224 263101

UK Oil and Gas Scholarships Scheme extended for 1995

This scholarship scheme has been designed by the Foreign Office and the College of Petroleum and Energy Studies (CPS) to bring foreign managers, engineers and economists to the United Kingdom for management and economics programmes. UK oil and gas organisations or equipment and contracting companies sponsor or fund a candidate with a contribution to the costs made by the Foreign and Commonwealth Office.

In 1995 the programme will be extended by the inclusion of new three-month competence-based specialist diplomas, and open to more countries, particularly in eastern Europe, Asia and South America.

The scheme can be utilised for the new diplomas which will be validated by the University of Oxford Delegacy of Local Examinations, as well as for the joint conversion degree courses with Dundee University, Imperial College and Salford University.

They cover a wide range of subjects:

Petroleum Exploration and Development, Planning and Economics;
Refinery Business Management;
Management of Oil Supply and Trading;
Management and Economics of Natural Gas;
Power Generation, Energy and the Environment;
Petrochemicals Business Management;
Petroleum Products Marketing and Distribution;
Lubricants Business Management;
Management of Marine Transportation of Crude and Products.

Countries eligible for the FCO/CPS scholarships in 1995 are:

Azerbaijan, Czech Republic, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Poland, Russia, Slovakia, Ukraine, Uzbekistan; China, Indonesia, Papua New Guinea, Thailand, Vietnam, Angola, Mozambique, Namibia, South Africa, Tanzania, Argentina, Brazil, Chile, Colombia, Venezuela.

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NEW BOOKS

SELECTED ADDITIONS TO LIBRARY STOCK

This list represents only a fraction of the additions to Library stock since the last Information Service News in August. Most of the items, other than directories, are available for loan to IP members. All the items were published in 1994.

DIRECTORIES

1995 Latin America Petroleum Directory. 14th edition. PENNWELL BOOKS.

Petrocompanies 1994/95. PETROCOMPANIES.

1995 Worldwide Petrochemical Directory. 33rd edition. PENNWELL BOOKS.

QUALITY

Total quality measurement in the oil industry. Edited by: *Symonds J D. 1st edition.* BLACKIE.

REFORMULATED GASOLINE

The Energy Information Administration's assessment of reformulated gasoline, 2 Volumes. ENERGY INFORMATION ADMINISTRATION.

SPECIFICATIONS

Specification for offshore cranes. 5th edition. API SPEC 2C. 1 April 1995.

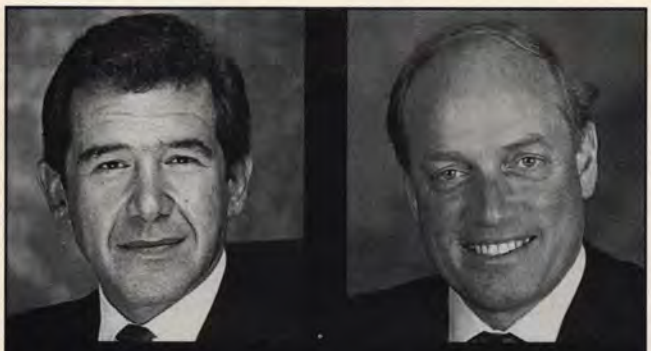
Specification for lease automatic custody transfer (LACT) equipment. 4th edition. API SPEC 11N. November 1994.

FORMER SOVIET UNION

Petroleum exploration opportunities in the former Soviet Union. By: Riva J P. PENNWELL BOOKS.

Russian Energy Prices, taxes and costs 1993. INTERNATIONAL ENERGY AGENCY. *1994*

PEOPLE



The following changes have been announced by the Board of The British Petroleum Company: The Chairman, *Lord Ashburton* will retire on 1 July 1995 after 12 years on the Board. He will be succeeded by *Mr David Simon*, who will retire as Group Chief Executive. *Mr John Browne* (top left) will be appointed Group Chief Executive and *Mr Rodney Chase* (top right) will succeed Mr Browne as Chief Executive of BP Exploration. *Mr Hugh Norton* will also retire from the Board on 1 July 1995, after 35 years with the Group and *Mr Russell Seal*, currently Chief Executive of BP Oil, will assume new responsibilities. *Dr Rolf Stomberg* (below left) will be appointed Managing Director and he will succeed Mr Seal as Chief Executive of BP Oil. *Peter Backhouse* (below right) will succeed Dr Stomberg as Chief Executive of BP Oil Europe and Regional Director, Europe.

John Burt has set up his own company, John Burt Associates Ltd, to provide management consultancy services to the oil & gas and other industries in the specialist areas of safety, health & environment and offshore helicopter operations /general aviation.

Dr Carlo Viotti, currently General Manager of Enterprise Oil's Italian activities, is to become Deputy Chairman of Enterprise Oil Italy Ltd, with effect from 1 January. He will also become a director of Enterprise Oil Exploration Ltd. **Simon Oddie** will succeed Dr Viotti as General Manager, reporting to **Iain Paterson**, International Director. **Mr Steve King** has been appointed General Manager of the Group's Indonesian interests. He succeeds **Peter Jarvis.**

Barrie Stephens is to replace Roland Shaw, the founder of Premier Consolidated Oilfields, who was forced out in a boardroom coup in August. Mr Stephens is also Chairman of SIEBE plc, the international engineering group.

Brown & Root Chief Executive **Keith Henry** has decided to leave the company after more than 23 years to become Chief Executive of National Power plc. With effect from mid-February 1995, **Arthur Stephens** will take over the role of Chief Executive of Brown & Root's Europe, Africa and former Soviet Union region.

CBI Industries Inc have announced the appointment of Dr Stephanie Pace Marshall to its Board of Directors.

The Board of LASMO plc announces that **Norman Davidson Kelly** is to step down as Corporate Development Director. Other changes being made include the appointment of **Peter Nolan** as General Manager, New Business, reporting to **Tom King**, Director, New Business. **Paul Murray** has been appointed General Manager, Corporate Finance, reporting to Finance Director, **Dick Smernoff.**

AMEC chief executive **John Bateson** will retire on March 31, with chairman **Sir Alan Cockshaw** assuming full executive responsibility for managing group affairs. He will continue to assist on a number of matters.

***Robert Solberg* is to take over from *Glenn Tilton* as Chairman of the Board of Texaco Ltd with effect from 1 December. Mr Tilton, who was appointed Chairman in 1991, is to succeed *James Dunlap Jr* as President of Texaco USA (TUSA). *Janet Stoner* and *David Codd* have also joined the board of directors.**

Scott Pickford Group Ltd has established a Seismic Technology Division based in Croydon. It is headed by a top technical team: **Chris Cottam** (Business Development), **Paul Haskey** (Geophysical Development) and **Alan Tidey** (Data Processing).

Wood Group Engineering Ltd has strengthened its management team by appointing **Fred Chadwick** as director, engineering & operations support. His initial role will be to consolidate and help to develop further the company's Asset Engineering Alliance relationship with BP Exploration.

***Mr Bob Connon*, is to succeed *Mr Charles Smith* CBE as Managing Director of Chevron Europe and Middle East Strategic Business Unit. He will take up his appointment in Aberdeen on 1 February 1995 immediately following Charles Smith's retirement.**

British Gas has appointed Mr **Roy Gardner** to the Board as Executive Director with responsibility for Finance, as from 14 November.

Hanover Energy Associates, a private consultancy providing advisory and business development services to energy companies and investor groups, has appointed *Mr Herbert Foxton* as a Senior Associate. Mr Foxton, a Fellow of the IP, was a senior manager at Shell and brings over 30 years refining and related joint venture experience to the group's existing project expertise.

Painting pipelines underwater

Concorde APACS have launched a new metal and concrete protective coating in Britain that can be applied to wet and oily surfaces – even under water. This allowes pipeline repairs where it is impossible to dry out or de-commission, saving both time and money.

When applied to sand-blasted iron and steel or any surface free of crustaceans and heavy laminated rust, Alocit Aquacoat is said to achieve excellent adhesion under-water. A vital aspect is the product's tolerance of salt. As a result, surfaces require no drenching during or between applications, so can be coated regardless of weather windows or tidal dictates. The product can also be applied on oily surfaces and is described as a 'completely environmentally-safe system with no pollutants able to enter the water or atmosphere'.

Alocit Aquacoat can be applied to wet and oily surfaces underwater

The product has been used in waters of many different salinities and temperatures, from pipelines off West Africa and South America to major dockside contracts in Germany and the United States.

The coating was developed 20 years ago in Switzerland for use in the hydroelectric industry, but it was not until the late-1980s, when a precision German application machine was developed, that the two-component epoxy system could be applied more cost-effectively over large areas.

Drain trap for small users

The Bekomat 11 drain trap has been specifically designed for the small user, such as garages, small workshops and the automotive industry.

Available from Beko, the unit incorporates an electronic level control and capacitive system that continually measures and reacts to condensate level. Other features include an aluminium housing and a heating unit.

The company claims the unit offers a safe and efficient method of collecting compressor condensate.

Before discharging condensate, the electronic system in the condensate drain calculates the discharge rate down to the minimum point on its lower capacitive sensor. The valve is fully closed and leakproof, avoiding the pressure loss associated with time-based discharge.

The trap is equipped as standard with a potential-free alarm contact.

The new Bekomat 11 drain trap

Integrated sampler and flowmeter

Montec International has launched the Buhler 1023, claimed to be Europe's first integrated fixed-site sampler and flowmeter.

Specially designed for flow proportional sampling, the new system eliminates the need for purchasing separate systems, saving valuable time and resources.

It can sample and measure flow in open channels, providing accurate and representative flow data for ensuring consent compliance and for process monitoring purposes.

Montec has also incorporated several design features to increase user versatility, convenience and ease of use.

The unit's transducer can be used as a depth only system for flow structures and weirs, or with twin sets of transducers for measuring flow velocity of both shallow and deep flows in open channels using the Doppler technique.

The system can also record flow direction, a feature which is particularly useful for industries discharging to estuaries affected by tidal flows, to avoid the duplication of discharge costs.

Sampling and flow measurement in one unit

The simple, intelligent pocket-sized programmer can be independently pre-set in the operator's laboratory with up to five different programmes for downloading onto the unit on site. With a high memory capacity, the programmer will also retrieve useful flow data and sampling information, including site and device number, timings and sampling rate.

Chip improves mill performance

Albyn Oilfield Services have developed a new tungsten chip breaker for their casing and milling sections which 'dramatically improves performance for milling tubulars'.

The chip, which offers operators the chance to reduce the expense of some of their high-cost remedial operations, incorporates multiple edges. It also gives positive and negative rake angles for improved cutting and chipping action.

Tests to date have been successful in avoiding the cutting of long strands of metal which are usually associated with 'bird nesting' problems in the flowlines or downhole. The same technology can be used to sever casing and may be applied to coil tubing mills.

New budget eyewash station

Steripak has launched a new budget eyewash station designed specifically for the smaller, less hazardous working environment.

Available at under £20.00 (plus VAT), the new station is said to ensure full compliance with health and safety regulations. It holds three 300ml bottles of Steri-Wash sterile 0.9 percent saline eyewash in a compact wall-mounted protective cabinet, which is clearly marked for quick location in the event of an accident.

The station has been developed following feedback from smaller companies concerned about the amount of product left unused in conventional 500ml bottles after minor incidents. With its three smaller bottles, the new station cuts down on waste yet ensures a full 900ml is available should a major accident occur.

Mr David Hughes, product manager for Steripak, said: 'This new budget station means that even in today's cost-conscious climate, companies can afford to place an emergency eyewash facility anywhere it may be needed. And that can mean the difference between an employee losing or retaining his or her sight.'

Emergency eyewash solution for the smaller workplace

International standard for flexible pipes

A project to develop a new, international oil and gas industry specification for unbonded flexible pipes could result in significant time and cost-savings worldwide.

The engineering consultancy, MCS International, is writing the specification which will cover the process from initial enquiry to delivery of the end product. This will standardise the interaction between the purchaser and the manufacturer.

Eleven oil companies, three flexible pipe manufacturers and a number of offshore contractors from seven countries are, along with the Health and Safety Executive, participating in the project, which was initiated by MCS and Shell Internationale Petroleum in The Hague. The project also has the backing of the American Petroleum Institute.

The specification will apply to unbonded flexible pipes for use in offshore locations, including static flowline, and dynamic riser and jumper applications. The service conditions that will be addressed include 'sweet and sour' production, export and injection. No such standard exists at the moment and each potential purchaser currently has to write a bespoke specification for every application.

'By developing such a specification,' said MCS Director Patrick O'Brien, 'both manufacturer and end user will have confidence that the supplied product will be fit for purpose.'

Plans for new drilling unit

A new generation hydraulic drilling unit, which is set to 'revolutionise the way operators conduct their drilling operations', is being developed by Transocean Petroleum Technology.

The unit, which was designed by Transocean and is now being manufactured by Stewart & Stevenson, will come in a modulised package consisting of 22 components. After taking only 24-30 hours to pull together, the complete system can then be operated by only three or four men, as opposed to the usual 14-16 personnel required for conventional drilling rigs.

'As well as offering huge cost savings through reduced labour and overall set-up costs,' said Transocean, 'the unit also enables well flow to take place while drilling continues, preventing damage to the reservoir formation. This will ultimately allow more oil or gas to be retrieved.'

The aim of the new unit, which will be available for work in the North Sea from May 1995, is to allow operators the opportunity to access wells which were previously uneconomical.

Access the plastic 'hotcard' list

ICL Edacom has introduced a new system to prevent plastic card fraud in the petrol industry.

The new interface will enable users of the complete range of E10 to E90 Point of Sale (POS) terminals, to link up with either the Cardcast or CardClear plastic card 'hotlists'. This then gives retailers access to up to four million blacklisted credit, debit, charge, cheque and fuel cards.

The Cardcast and CardClear systems provide data on all types of cards which have been reported lost or stolen, or which have been stopped by the issuer. The information, updated 24 hours a day, seven days a week, can now be transmitted via TV broadcasting networks to all retail outlets with ICL Edacom POS terminals which have the correct software.

One of the benefits to retailers of the electronic 'hotlists' will be a reduction in the costs involved with charge-backs. These are the financial losses sustained by retailers when cards are processed by the cashier despite being registered on a paper 'hotcard' list as illegal by the issuing bank.

Transactions can also be carried out more quickly and easily, thanks to the card swipe feature which gives verification in less than a second. Before the introduction of the interface, each card had to be swiped through the Cardcast or CardClear unit and then the Edacom card reader.

Preventing card fraud

Computerised fuel delivery

BP has introduced a computer system based on TouchPC to its fuel delivery procedures.

TouchPC, from ACS Data, is a robust, lightweight, touch-operated handheld computer. With the computer and a printer in the tanker cab, the driver has access to everything he needs for his deliveries.

At each location he produces a paper printout of the delivery showing the recipient's signature for proof of delivery purposes. The signature is also captured on the touch screen. All the information is stored in the memory for subsequent transfer and archiving.

Computer in a cab

Remediation for problem soils

A new patented device for fracturing near-surface soils is now being marketed in the United Kingdom by Miller Environmental and Golder Associates.

Fractool, which is about to be used for the first time in Europe, allows a variety of remediation techniques to take place in low permeable soils.

The importance of this technology is that hydrocarbons and solvent pollutants can now be recovered in clay and fine-grained soils. Many areas of Britain have these problem soils, where conventional remediation techniques are ineffective because of the low permeability.

With Fractool, which involves hydraulic fracturing, drilling and fracturing are combined in one single operation. The sand propant permanently improves subsurface permeability in a controlled direction.

Hydraulic fracturing can be used to enhance the performance of existing in-situ remediation technologies, such as soil vapour extraction, pump and treat or bio-remediation. The only other equipment needed on site is a simple, shallow, rotary drilling rig, a mud mixing tank and fluid injection system.

The technology can be used above or below the water table, and under existing structures.

Vapour extraction software

Geraghty & Miller have recently added the Exposure and Risk Assessment Decision Support System (DSS) to their extensive range of computer modelling software.

The programme is designed to help environmental professionals in estimating human exposure, toxic risk and non-toxic effects from sites where soil and groundwater are contaminated with petroleum products.

First developed by the American Petroleum Institute, the system can be used to conduct risk assessments for 16 hydrocarbons, six petroleum product additives and three metals.

DSS is a user-friendly software tool that can be used to: estimate site-specific risks; identify the need for site remediation; develop and negotiate site-specific clean-up levels with regulatory agencies; and evaluate the effect of parameter uncertainty and variability on estimated risk.

The software consists of four modules which can be implemented in either a deterministic mode or Monte Carlo simulation mode.

Stainless steel showers

Hughes' Safety Showers have launched a new range of unheated stainless steel emergency safety showers and eyebath/facewash models. This new range has been specifically developed to offer a comprehensive selection at mininal cost.

'Although considerable cost-savings have been achieved, no compromise has been made on the quality of valves fitted to the showers,' said the company.

Cost-saving emergency showers

Second-hand pumps

Wayne Autocourt is offering smaller petrol sites recycled equipment from the higher volume sites.

'While properly maintained pumps can give reliable service for 10 years and more, petrol retailers are under constant pressure to upgrade high-volume sites,' explained the company. 'This new equipment can then be refurbished and transferred to smaller sites to replace older, earlier generation pumps.'

This 'cascading' concept enables the petrol retailer to maximise return on investment by passing on the benefits of upgrades through the dealer network.

Total sees the concept as an important element in its commitment to dealer support. 'While we pride ourselves in getting the maximum service from our fuel dispensers, the cascading concept enables us to spread the costs of updating equipment and improve forecourt service quality' said a spokesman.

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MCS International	01224 325326
Transocean Petroleum Technology	01224 891118
ICL Edacom	01279 647000
ACS Data	0161 873 8323
Miller Environmental	01977 555427
Geraghty & Miller International	01223 236950
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Wayne Autocourt	01875 822500

A Sector Application Guide for BS 7750: for oil refineries

A new IP publication

When the British Standard BS 7750 Environmental Management Systems (EMS) was introduced in March 1992, a pilot programme was established for its implementation. The Pilot Programme's objectives were:

(1) To obtain structured feedback on the implementation of the standard to assist in its planned review in 1993;

(2) To facilitate collaboration within individual sectors of industry and to address specific aspects of implementation pertinent to them.

As a management tool applicable to all types and sizes of organizations, BS 7750 provides a generic specification for an EMS rather than specific environmental performance criteria for particular sectors. However, guidance on sector-specific issues may be given in complementary documents, known as Sector Application Guides (SAGs).

As part of the second objective of the Pilot Programme, industry was encouraged to produce Sector Application Guides for use by both those implementing the standard and those assessing its compliance.

Although BS 7750 covers many aspects of environmental management systems, it was considered that for the oil industry many of the Standard's requirements were either:

(a) already well established within the industry;
(b) covered by other existing guidance, eg EUROPIA Guiding Principles;
or
(c) the rightful domain of individual companies and sites to determine, eg the setting of targets;

and therefore did not require guidance beyond that contained in the standard itself.

The area that was felt required most guidance was Environmental Effects Evaluation. This is potentially one of the most complex elements of BS 7750 involves a wide-ranging examination of the environmental effects of an organisation's activities, products and services. This covers past, present and future activities under normal, abnormal and emergency conditions. Therefore it was decided that this would be the primary focus of the SAG, concentrating on Direct Effects, but also giving guidance where appropriate on Indirect Effects.

In order to obtain a balanced framework on which to proceed, an independent consultancy, WRc Alert, was commissioned to produce an evaluation of the environmental effects of oil refineries. At the same time the IP's Environment Section set up a Refineries Environmental Effects Sub-committee to steer the production of the SAG.

WRc Alert's report covered:

(a) environmental effects evaluation;
(b) emissions to all media;
(c) contamination of land and ground-water;
(d) solid waste;
(e) local nuisance issues;
(f) emergencies.

WRc Alert's report, almost in its entirety, forms the basis of the SAG. Additional information has been supplied by the IP, particularly in the form of oil industry reports, and includes information on the indirect effects of a refinery.

Although this SAG addresses the environmental effects of oil refineries, many of the observations may be used for other operations in the downstream oil industry e.g. distribution terminals. A further SAG for use by the downstream marketing and distribution section, based on this document, is planned for later this year.

Copies of the Sector Application Guide for BS 7750: for oil refineries are now available from the IP Library – price £32.00 each.

Correction

Petroleum Review very much regrets that an unfortunate error appeared in last October's issue in an article entitled 'CRINE culture in Liverpool Bay'.

This related to the name of the contractor responsible for all pipeline laying offshore which is McDermott-ETPM (UK) Ltd and not Costain Oil, as stated by Petroleum Review. We apologise sincerely for any inconvenience caused to McDermott-ETPM by this error.

In fact, Costain Oil was operating as a subcontractor to construct the shore approach at Point of Ayr and to pull in 4.5 kilometres of pipeline in shallow waters.

The main contract for offshore pipelaying was awarded to and carried out by McDermott-ETPM (UK) Ltd with the laybarge DLB 1601. The pipelines consist of:

- 16.8 kilometres of 14 inch oil line (w.t. : 11.1 mm) from the Douglas platform to a future offshore loading unit;
- 14.3 kilometres of 14 inch gas line (w.t. 12.7 mm) piggy-backed with a 2 inch diameter glycol line from the Douglas platform to the Hamilton North platform.
- From the Lennox platform, located in only 8.5 metres (after dredging) of water, to the Douglas platform, 31.7 kilometres away:
- 16 inch gas line (w.t. 11.9 mm);
- 14 inch oil line (w.t. 11.1 mm) piggy-backed with one 2 inch glycol line;
- 12 inch gas injection line (w.t. 12.7 mm) piggy-backed with one 2 inch glycol line (w.t. 7.1 mm).
- 11.2 kilometre 20 inch gas line (w.t. 15.9 mm) and 2 inch glycol line (w.t. 7.1 mm) from the Hamilton platform to the Douglas platform.
- 27.9 20 inch gas line (w.t. 20.6 mm), with two 3 inch condensate lines (w.t. 15.2 mm) from the offshore end of the landfall to the Douglas platform. These lines were laid in triple lay mode with the two 3 inch lines laid banded together on a side ramp.

INSTITUTE NEWS

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Mr J Reynolds, Reynolds Tankers Ltd, 16 Clondalkin Industrial Estate, Dublin 22, Ireland.
Mr J Riemersma, Hamilton Oil Co, Devonshire House, Piccadilly, London, W1X 6AQ.
Mr A J Root, Nork House, Chapel Lane, Nomansland, Salisbury, Wilts, SP5 2DA.
Mr M P Saunders, 9607 Heidelberg Ct, Houston, TX 77070, USA.
Mr R D Seymour, 8 West Park, Coundon, Bishop Auckland, Co Durham, DL14 8QR.
Mr H Shima, Sakura Bank, 6 Broadgate, London, EC2M 2RQ.
Mr D A G Simon, The British Petroleum Co plc., Britannic House, 1 Finsbury Circus, London, EC2M 7BA.
Mr R A Solberg, Texaco, 1 Westferry Circus, Canary Wharf, London, E14 4HA.
Mr C T M Spaan, ABN-AMRO Hoare Govett, 4 Broadgate, London EC2M 7LE.
Dr M R Suleiman, Flat A-315, 1004 Housing Complex, P O Box 75637, Victoria Island, Lagos Nigeria.
Dr F Touber, Touber Consult, PO Box 277, Bergen 1860 AG Netherlands.
Mr A J Tyler, 26 Gerard Road, Barnes, London, SW13 9RG.
Mr I W Upson, Esso Petroleum Co Ltd, Esso Hse., Ermyn Way, Leatherhead, Surrey, KT22 8UX.
Mr M Van Ravenstein, Van Ommeren Tank Terminal BV Ltd; Vouk Holding Ltd, Oliver Road, West Thurrock, Grays, Essex, RM16 1EY.
Mr D Volokhov, LUKOIL Baltija R, 149 K. Valdemara Street, Riga LV-1013 Latvia.
Mr M K Warburton, 56 Whitestone Road, Scunthorpe, South Humberside, DN17 1RE.
Mr B R Webb, 85 High Ridge Crescent, New Milton, Hampshire, BH25 5BU.
Dr B Youll, Texaco Ltd, Pembroke Refinery, Angle Bay, Pembroke, Dyfed, SA71 5SJ

STUDENTS

Mr J C Boue, Wolfson College, Linton Road, Oxford, OX2 6UD.
Miss U H Okeke, 13D Clandon House, Clandon Gardens, London, N3 0BD.

STUDENT PRIZE WINNERS

Mr A P J Starkey, Conoco UK Ltd, Rubislaw House, Anderson Drive, Aberdeen AB2 4AZ.
Mr G Sutherland, 13 Barchester Street, Sherwood, QLD 4000, Australia.

DEATHS

We regret to announce the deaths of the following members:-

	Born
R W J Gouldbourn, Dorset	1914
W H Jackson, Middlesborough	1940
D C McGregor, Faringdon, Oxon	1914
R A E Mennie, Essex	1919
C E Steed, Middlesex	1912
T H Tigg, Dorset	1917
D A Taylor, Beaconsfield	1935
R J Lovelock, Wiltshire	1950

INSTITUTE NEWS

NEW COLLECTIVE MEMBERS

Polartech Ltd
Ashburton Road West
Trafford Park
Manchester M17 1SX
IP nominated representative: **Mr Robert Stubbs**
Polartech Ltd develop and manufacture additives for metalworking fluids, specialist technology for aqua lubrication and other associated water-based systems.

Q&Q Control Services UK Ltd
The Pines Industrial Estate
Fordham Road
Newmarket CB8 7LQ
IP nominated representative: **Mr Graham C Dorrington**
Q&Q Control Services was founded in 1984 and provides inspection and testing services to the oil industry. Bulk custody transfer inspections are made on cargoes of crude oils, petroleum products and petrochemicals. The company has representing offices and laboratories throughout Europe, Africa and the Middle East.

Ministry of Defence (Army)
Portway
Monxton Road
Andover
Hants SP11 8HT
IP nominated representative: **Major P Crossman RLC**
The Ministry of Defence (Army) recognises the provision of fuels, lubricants and associated products, and the subsequent storage and distribution of those commodities, as one of its key business areas in both peace and war. MOD (A) (MSD2) acts for the policy focus for this business area.

Eastern Petroleum Supplies
Station Road
Southminster
Essex CM10 7AA
IP nominated representative: **Mr Ron Scott**
Eastern Petroleum Supplies are manufacturers of Avery Hardoll mechanical pump spares and Beta petrol pumps, bespoke manufacturers of fuelling pumping sets, distributors for nozzles, loading arms, bulk flow meters and LPG pumps.

NEW FELLOW

Mr Philip J Dingle
Since graduating from the University of Calgary with a BSc in Civil Engineering, Mr Dingle has gained a wide range of experience of the upstream business both in Canada and Malaysia. Since 1993 he has been Managing Director of Esso Exploration & Production (UK). From 1 January he will be the CEO of the Esso companies in Malaysia.

Around the Branches

Aberdeen Branch
10 January: *The Role of the Procurator Fiscal in Offshore Matters*, G R Craig, Procurator Fiscal.

Edinburgh & SE Scotland Branch
10 January: AGM, and *The Mission and Activities of the IP*, Ian Ward, Director General.

Yorkshire Branch
10 January: Committee Meeting at Millers Oils.

Essex Branch
11 January: *Taking Stock– Aspects of Cargo Surveying*, Mike Rennie, Hammond, Rennie & Company Ltd.

Northern Branch
17 January: *Recycling of Oils* by Paul Ramsden, Evergreen Consultants Ltd.

Midlands Branch
18 January: *Independent Gas Suppliers' View of the Marketplace for Natural Gas* by Peter Franklin, Head of Marketing and Sales Co-ordination at AGAS Ltd.

South Wales Branch:
18 January: Visit to Cardiff Wales Airport

London Branch & Environmental Group
19 January: *Future Air Quality Standards*, Dr Williams from the Department of the Environment.

Humber Branch
19 January: *Effluent Treatment Plants – Concept to Commissioning*, Biwater Europe Ltd.

North East Branch
24 January: AGM

Stanlow Branch
25 January: AGM, and *Hamilton Oils at the Point of Ayr*, Roger Pearson, Hamilton Oil Ltd.

UK Deliveries into Consumption (tonnes)

Products	*†Oct 1993*	**Oct 1994*	*†Jan-Oct 1993*	**Jan-Oct 1994*	*% Change*
Naphtha/LDF	251,522.0	248,326.0	2,511,889.0	2,282,880.0	-9
ATF – Kerosene	653,673.0	634,167.0	6,044,556.0	6,097,995.0	1
Petrol	1,978,728.0	1,876,289.0	19,733,172.0	18,911,160.0	-4
of which unleaded	1,078,760.0	1,115,794.0	10,323,904.0	10,830,223.0	5
of which Super unleaded	120,984.0	114,324.0	1,216,278.0	1,177,355.0	-3
Premium unleaded	957,776.0	1,001,470.0	9,107,626.0	9,652,868.0	6
Burning Oil	224,239.0	209,869.0	2,030,679.0	2,078,845.0	2
Derv Fuel	1,032,398.0	1,113,171.0	9,748,332.0	10,544,524.0	8
Gas/Diesel Oil	670,751.0	634,512.0	6,358,650.0	6,277,912.0	-1
Fuel Oil	750,041.0	823,509.0	8,586,243.0	7,673,027.0	-11
Lubricating Oil	64,553.0	65,317.0	670,979.0	668,037.0	0
Other Products	692,243.0	769,843.0	6,646,412.0	7,123,531.0	7
Total above	**6,318,148.0**	**6,375,003.0**	**62,330,912.0**	**61,657,911.0**	**-1**
Refinery Consumption	563,434.0	501,189.0	5,267,670.0	5,168,214.0	-2
Total all products	**6,881,582.0**	**6,876,192.0**	**67,598,582.0**	**66,826,125.0**	**-1**

*† Revised with adjustments *preliminary*

Sales Manager – EPOS

PM 'Forecourt' Services

We are one of the largest maintenance companies in the UK, involved with fuel dispensing equipment and systems and part of the worldwide GEC Group. Following the successful introduction of the 'Foremost' Forecourt Control & Point of Sale System to the retail market, Bardon Systems Ltd and PM Services have now linked forces to further develop sales within the industry. To this end, the Bardon range will now be exclusively distributed and serviced by PM Services throughout the UK. This new business opportunity means that we now need to expand our existing sales team.

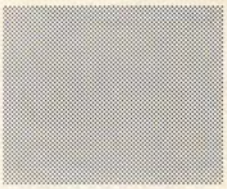
We now require a Sales Manager – EPOS, who will report to our Commercial Manager and work out of our Romford office. Applicants should have experience in either the petroleum retail environment and/or have exposure to selling EPOS to both individual and multiple accounts.

The position offers an attractive salary and a benefits package you would associate with a successful and progressive company. Opportunities for future personal development are available within the GEC Group of Companies.

To apply, please send your C.V. and current salary details to:

Sue Croft,
Personnel & Training Officer,
PM Services, Sertec House,
West Bromwich Road,
Tame Bridge, Walsall,
West Midlands WS5 4BD.

An equal opportunities employer.



PM Services

A GEC Company

IP

THE INSTITUTE OF PETROLEUM

Netherlands Branch

Catastrophe Training — Handling the Media

Workshop and introductory training sessions

Thursday 12 January 1995
14.00-18.00

at Airport Hotel, Rotterdam

The IP Netherlands Branch is organising a workshop in media management in crisis situations. The workshop for members and non-members will be led by Mr John Brand of TRT, a leading UK Television and Radio Training centre.

Participants will be given the opportunity to be interviewed in front of TV cameras, and review the interviews and media encounter with an experienced interview trainer. Guidance will be given in all aspects of media handling in crisis situations. Anyone involved in dealing with the media in any situation will benefit from this workshop. It is important for our industry that our members can handle the media, and we warmly recommend staff at all levels to take this opportunity to sample proven training in competent crisis management.

The workshop will take place at the Airport Hotel in Rotterdam (Zestienhoven Airport). Cocktails and dinner will be available for those who wish to continue the discussion in an informal atmosphere. Costs for the workshop: IP members Nfl 150. Non-members Nfl 175. Registration by fax to Mr Chris Fisher (DNV Rotterdam) 10 4797141; Tel: 10 4798656. Fees should be paid to the acount of Netherlands Branch of the Institute of Petroleum: bank account ABN-AMRO 45.43.72.043 or Post-giro (Netherlands) 0118525

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THE INSTITUTE
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Financing the Frontier

The City's Role in the West of Shetland Oil Development

30th March 1995

To be held at The City University, London

Topics will include:

Setting the Scene – The Potential, Problems & Opportunities

Producing Oil West of Shetland – Addressing the Critical Issues

Safety and Environment – The Natural & Regulatory Environment

Boundary Disputes – The Present Status of UK/Faroes Median Line Discussion

A New Financing Era? – The Drivers of Change

The End of Special Taxes? – A More User-Friendly Tax Regime

Frontier Project Finance – The Benefit of Experience

For a copy of the registration form, please contact Conference Department, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR UK.
Telephone: 0171 467 7100
Fax: 0171 255 1472

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THE INSTITUTE
OF PETROLEUM

Looking over the fence – profit improvement by understanding the fuels/petrochemicals interface

23 March 1995

To be held at the Institute of Petroleum, London

Topics will include:

Hydrocarbon Chemistry at the Interface

The Refining Scenario

The Petrochemical Scenario

Aromatics and Valuation of Aromatics at the Interface

Olefins and Valuation of Olefins at the Interface

Interfaces between Fuels, Power and Petrochemicals

All sessions will be followed by a discussion period

For a copy of the registration form, please contact Conference Department, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR UK.
Telephone: 0171 467 7100
Fax: 0171 255 1472