Soviet oil prospecting

Lagging behind

SOVIET geologists prospecting in the oil and gas Tyumen' region of western Siberia are failing to keep up with the country's demands, according to Dr F. Salmanov, head of the Glavtyumen'geologiya prospecting organization. Writing in *Pravda,* Dr Salmonov has argued that by 1985, the Tyumen' geologists will have to double their work-load to keep up with the demands of the five-year plan, and by 1990 to treble it. But he acknowledges that they are hampered by the lack of technology appropriate to the geological and climatic conditions of the region.

This it seems, is why the Siberian branch of the Academy of Sciences of the USSR has now established a special council to deal with the development of the oil and gas industry in the Tyumen' *oblast'*. According to the chairman of the council, Dr Andrei A. Trofimuk, the council will concentrate on eliminating specific difficulties that beset the exploitation of remote deposits, and will propagate new techniques and working methods.

Several institutes of the Siberian branch have a special interest in oil and gas prospecting, including the institutes of geochemistry, mining, the Earth's crust, permafrost, and of geology and geophysics of which Dr Trofimuk is himself director. These institutes have already put forward proposals for speeding up prospecting, improving the transport of compressed gas and making trunk pipelines more reliable.

The new council will act as a coordinating body between the various institutes, and also between the research teams and the on-site workers. Members of the new council have already visited the oil and gas recovery sites at Novyi Urengoi, Nizhnevartovsk and Surgut, to tell the local production crews about the new research programme.

Research and new technologies are not, however, sufficient. Dr Salmanov cited the case of the high-performance TPS-172 drilling motor which gave excellent results in field trials during the Surgut survey of 1979, but which was then blocked by the Ministry of Chemical and Petroleum Machinery for no apparent reason. Ten of these machines were made available to Glavtyummn'geologiya in April 1982 and found to be successful yet the "Turbobor" production association which manufactures them is, says Dr Salmonov, "in no hurry" to expand production.

What is needed, Dr Salmonov suggests, is a totally new approach to the opening-up of western Siberia. The distribution of capital investment for research, machine building, prospecting and pilot projects should be reassessed. As things are, he complains, there is a tendency to economize by drilling fewer boreholes, so that surveys are delayed. He says that special attention should be given to support services, including transport equipment and personnel, as well as to housing and social services in west Siberia.

The end-of-year statistics for the region suggest that much progress has in fact been made. In Ureggoi alone, 100,000 square metres of accommodation was built last year, but Dr Salmonov complains that prospectors have benefited less than the existing inhabitants of the region.

At present, the west Siberian fields will remain the mainstay of the Soviet oil and gas programme, with the exploitation of the reportedly-rich east Siberia fields left largely for the future. It is from Urengoi, in west Siberia, that the pipeline to Western Europe will draw its supplies. Dr Salmonov's criticisms and demands, (which appared on the Party policy page of *Pravda*) coming so soon after the formation of the special oil and gas council of the Siberian branch of the academy, suggests that the Soviet Union is worried about the prospects of success in the region.

Vera Rich

French nuclear power

A year to watch new PWRs

WITH another seven nuclear power stations due to be connected to the French national grid in 1983, France's ambitious nuclear programme will soon be producing more than half the country's electricity. But the stations already in operation have had their problems (see table) and with such large numbers of similar, production-line reactors, the performance of the new stations this year will be keenly followed by those outside France favouring nuclear power.

France now has 22 working pressurized water reactors (PWRs), most of them less than 2 years old, but during the first 10 months of 1982 six of them operated at less than 25 per cent capacity, according to figures released by the national utility, Electricité de France (EDF). However, on the positive side, 10 of the reactors turned in availabilities of more than 70 per cent, and one, Fessenheim 2, recorded 84 per cent.

The net availability of the whole system (including seven gas-graphite reactors and the Phénix fast breeder) was 50 per cent, according to published power-production figures. PWR availability alone was 51 per cent, against a planned figure of 62 per cent.

The shortfall will not recur in 1983, says EDF optimistically: the faulty control-rod tube-guide clips are to be replaced on all 22 reactors, involving shutdowns of "five to six weeks" on each, and problems with steam superheaters are "solved". So far there has been no trouble with the steam generators — corrosion of which plagued the Westinghouse reactors on which the French design is based. The French version is more rugged, the constructors claim.

Robert Walgate

The French nuclear power programme

	MW (electric)	Construction began	Connected to grid
From 1954 to 1968			
Marcoule G-1*	2	1954	1956
Marcoule G-2*	38	1955	1959
Marcoule G-3	38	1956	1960
Chinon A-1*	70	1957	1964
Chinon A-2	210	1958	1965
Chinon A-3‖	480	1961	1966
Chooz A-1	310	1962	1970
Monts d'Arrée	70	1962	1966
St-Laurent A-1	480	1963	1969
Bugey-1	540	1965	1972
St-Laurent A-2‖	515	1966	1971
Phénix (breeder)	233	1968	1973
1970 Programme			
Fessenheim-1§‖	880	1970	1977
Fessenheim-2‡	880	1971	1977
Bugey-2§	920	1972	1978
Bugey-3	920	1972	1978
Bugey-4‖§	900	1973	1979
Bugey-5	900	1974	1979
First 900 MW series			
Tricastin-1	920	1974	1960
Gravelines B-1‖	920	1974	1980
Dampierre-1‡	900	1974	1980
Tricastin-2‡	920	1974	1980
Gravelines B-2‡‖	920	1975	1980
Dampierre-2	900	1975	1980
Tricastin-3	920	1975	1981
Gravelines B-3	920	1975	1980
Dampierre-3	900	1975	1981
Tricastin-4	920	1975	1982
Gravelines B-4	920	1976	1981
St-Laurent B-1§‖	800	1976	1981
Dampierre-4	900	1976	1981
St-Laurent B-2§‖	880	1976	1981
Le Blayais-1	920	1976	1981
Le Blayais-2‖	920	1977	1982
Second 900 MW series			
Chinon B-1	870	1977	1983
Chinon B-2	870	1977	1983
Second 900MW series (cont.)			
Le Blayais-3	920	1977	1983
Le Blayais-4	920	1978	1983
Cruas-1	880	1978	1984
Cruas-2	880	1973	1984
Cruas-3	880	1979	1984
Cruas-4	880	1979	1985
Gravelines C-5	920	1979	1985
Gravelines C-6	920	1980	1986
Chinon B-3	870	1981	1986
Chinon B-4†	870	1982	1987
First 1,300 MW series			
Paluel-1	1,285	1977	1983
Paluel-2	1,285	1977	1983
Paluel-3	1,285	1978	1983
St-Maurice-1	1,285	1979	1985
Flamanville-1	1,285	1979	1985
Paluel-4	1,285	1980	1986
St-Maurice-2	1,285	1980	1986
Flamanville-2	1,285	1980	1986
Superphénix (fast breeder)			
Creys-Malville	1,200	1976	1984
Second 1,300 MW series			
Cattenom-1	1,275	1979	1986
Cattenom-2	1,275	1980	1986
Belleville-1	1,275	1981	1987
Nogent-1	1,275	1981	1987
Belleville-2	1,275	1981	1987
Cattenom-3†	1,275	1982	1988
Nogent-2†	1,275	1982	1988
Golfech-1	1,275	1982	1988
Further 1,300 MW stations			
Chooz B-1†	1,275	1982	1988
Penly-1†	1,275	1983	1989

* Stations closed down
† 1982 and 1983 orders placed in October 1981
‡ Cracks detected in pressure vessel
§ Stopped in 1982 with tube guide or superheater problems
‖ Availability below 25% in first 10 months of 1982