

advanced technologies in the energy field, the emerging British program will push for immediate modernization and expansion of coal and oil supplies for domestic use, with nuclear and energy technology generally being developed for export to Arab and Third World countries.

Hydrocarbon Development

The British government's first priority in energy development is obviously North Sea oil, but the high cost of developing the oil reserves has put severe restraints on the amount of oil that can be economically pumped from the sea bed. Consequently, most reliable sources are warning that the country will already have enjoyed the bulk of the benefits from the North Sea by the mid-1980s. While this is more than enough time to give the government the leeway it needs to regenerate the country's economy, it hardly provides the basis for a long-term energy policy.

To fill this energy gap, the National Coal Board announced this week that it was embarking on a 25-year investment program, dubbed Plan 2000, which would pump a total of 10 billion pounds into the industry and would mean "virtually the rebuilding" of coal capacity. The NCB is aiming for the production of 170 million tons of coal a year, as compared with 130 million tons in the past five years, and to treble productivity by shutting down exhausted pits and concentrating on equipping existing viable and new pits with the most advanced mining technology. The Coal Board's investment program must still be approved by Parliament, and a spokesman for the NCB stressed that its acceptance would depend largely on trade union cooperation.

Why Not Nuclear Energy?

The general collapse of industrial investment in the past 5 to 10 years has had a major effect on such high technology fields as nuclear energy where up-to-date production is dependent upon a large research and development sector. Britain's major nuclear project, development of the light water AGR reactors, has finally shown some success with the successful operation of the

Hunters Point and Hillingdon reactors, but the prospects for expansion of domestic orders are practically nonexistent since the Central Electricity Generating Board — the country's prime nuclear contractor — already has a 40 per cent energy surplus.

Nonetheless, the government has consistently reaffirmed its commitment to the development of nuclear power, both in British companies and in the context of a joint European nuclear energy policy. Culham, the site of Britain's fusion research center, is a central research center for U.S., European, and Soviet scientists, and a major contender for the site of the European fusion research project.

The Central Policy Review Staff, the private "think tank" for the British Prime Minister, released a proposal this past week which would allow for the continuation of this critical high technology sector by restructuring it for export, rather than the home market. The Nuclear Power Company, the operating arm of the National Nuclear Corporation, which is a government-inspired amalgam of major power station contractors in which the Government holds a 50 per cent stake and GEC (General Electric Corporation) 30 per cent, would have major "turnkey" responsibility for export orders to the Mideast and developing regions. Implicit in such a policy would be a reversion to the "heavy-water" reactors of the type developed by the U.S. which have more reliable completion and delivery dates.

This export strategy for nuclear technology complements the decision announced by Energy Minister Tony Benn several weeks ago to launch a major campaign to export oil technology to the Mideast, Asia, Africa and Latin America to allow for maximum oil exploitation in those regions. The Financial Times of Dec. 30 linked this announcement directly to the "eclipse of power of the major international oil companies," and noted that "there is now less likelihood that oil deposits in any given country would be left undeveloped because their development would go counter to the production and marketing strategy of a major international oil company."

ERDA Taking Another Look at Project Independence Energy Programs

The Federal Energy Research and Development Administration (ERDA) is questioning the economic and technical feasibility of aspects of the Rockefeller family-backed Project Independence energy program, according to articles in the Dec. 26 edition of the *ERDA Bulletin Information*. An ERDA review of current research and development efforts in oil shale and a reevaluation of a pilot coal conversion project show that the generation of synthetic fuels from coal and oil carry a "high technical risk," involve substantive

environmental problems, and entail economic uncertainties which have combined to weaken government and industrial commitment to such projects, reports the *Bulletin*.

Dr. Philip White, ERDA's Assistant Administrator for Fossil Energy, noted in the *Bulletin* that the agency is reevaluating the Clean Boiler Fuel Demonstration Plant Project (Coalcon). The proposed Coalcon demonstration plant, using a process called hydrocarbonation, would use 2,600 tons of high sulfur coal a day to produce 3,500

barrels of liquid fuels for use in boilers and 22 million cubic feet of synthetic pipe-line gas. Currently, however, it appears doubtful that the plant will ever be built. This, according to White, is because "the technology for hydrocarbonization with agglomerating coal is considered to be high risk and the projected economics of a full scale plant are marginal when compared with projected economics of other coal conversion processes."

The problem of economic feasibility for all coal conversion schemes is highlighted by White's "Statement on ERDA's R and D Program in Oil Shale" published in the *Bulletin*. Here, White asserts that because "production of liquid fuels from oil shale is technically simpler than from coal (it is) consequently

cheaper," and yet without financial assistance from the government there will be no commercial shale oil plants developed between now and 1985.

The development of shale oil synthetic fuel production might be useful as a secondary fuel source in the context of the necessary increased energy utilization required for economic recovery, for it yields fuels which are primarily important in the nation's mass-transportation sector and, as White points out, is the second most plentiful domestic fossil resource.

ERDA estimates that the production costs for fuel derived from shale oil would range from approximately \$10 to \$29 per barrel, depending on the method used. The Occidental method is claimed to cost only \$6 per barrel.