Synfuels Program Gets the Knife But Not the Ax

The House voted on 2 August to take back $5 billion of the spending authority it gave a few years ago to the Synthetic Fuels Corporation (SFC), reducing the agency's budget to $8.25 billion. This was a severe blow to the SFC but not the worst that might have happened. Environmentalists and budget trimmers sought to take away $10 billion, and the White House has requested a $9-billion cut (*Science*, 10 August, p. 604).

One after another, members of the House rose to express disappointment with the SFC's leadership. They described "waste, incompetence, and scandal"; "horror stories of bad management"; "the only word I can use for their management is . . . 'horrendous' "; "a clear and convincing case of mismanagement"; and "incredibly poor management." One radical and penetrating line of criticism came from Representative Richard Ottinger (D–N.Y.), who argued for abolishing the program altogether. He pointed out that engineering companies have testified that methanol from coal, a possible gasoline substitute, can be produced today for about half the price of raw shale oil, which the SFC is trying to "commercialize" at $67 a barrel.

The House settled on a compromise. In addition to taking back $5 billion, it specifically forbade the SFC from backing two projects that have received preliminary "letters of intent." These are the Union Oil phase II project at Parachute Creek, Colorado, and the Cathedral Bluffs project nearby. Both would exploit a shale technology used by Union in its phase I project, which won a $400-million price guarantee from the government. The House bought the argument that these ventures are too much alike and so fail to meet the requirement that the SFC finance a variety of technologies. In particular, some coal-state members hoped that the funds liberated from shale projects might be spent on coal instead.

Another amendment that may have helped bring about a consensus was offered by Don Fuqua (D–Fla.), who proposed to shift $2 billion in the remaining SFC budget to the Department of Energy. Fuqua's amendment would make extra funds available for nonfossil projects, including solar and geothermal power. It would also expand the potential for pork barreling, in that these funds would come more directly under congressional review. Ottinger, for one, spoke against it, saying, "It will provide an opportunity to resurrect failed demonstration projects and to start new ones. . . . [It is] a $2-billion blank check to the Department of Energy." The amendment is still pending a final vote.

The Senate has yet to take up the Energy authorization bill and the Interior appropriation bill, which are to be the vehicles for these changes in the SFC.—**ELIOT MARSHALL**

U.S.–Poland Exchanges Slow to Resume

One of President Reagan's initial responses to the amnesty and release of political prisoners, which began 21 July in Poland, was to say that the scientific exchange programs between that country and the United States are to be reinstated. However, according to officials at the State Department, the actual resumption of programs will not occur for some as yet undetermined period. The exchange programs were suspended in 1982 during the period of martial law in Poland and after two U.S. embassy officials were forced to leave the country (*Science*, 13 January, p. 145).

Two major reasons are being offered to explain the delays—one practical, the other political. Although the President said that the scientific exchanges could resume immediately, he indicated that other sanctions against Poland would be lifted gradually, allowing U.S. officials to assess whether the amnesty was being implemented in a satisfactory fashion. A less than speedy move to restore the scientific exchange program to its level of 3 years ago allows this gesture to be immediate without precluding the option to withdraw it.

On a more pragmatic level, the various federal agencies—principally, the National Science Foundation—that participated in exchange programs with Poland will need time to review where things were left off, what funding is available, and who might want to participate. According to a State Department official, although several agencies are asking about the status of their programs, there has not been a formal move to put the programs back on track. "It is painful and difficult to arrange exchanges," he said. There is interest but "no flurry of scientists has lined up."

—**JEFFREY L. FOX**

NAS Study Casts Doubt on Existing EMP Protection

A committee of the National Academy of Sciences has reported that electronic systems can, in theory, be protected against electromagnetic pulse (EMP) from high-altitude nuclear explosions, but the panel says it is "uncomfortable" with one of the shielding methods currently employed.* One implication is that military communications systems may still be vulnerable to disruption.

The committee notes that the magnitude of the EMP effect was not predicted until after atmospheric nuclear testing was halted in 1963, and thus there has been no opportunity to gain first-hand knowledge of the phenomenon. Some EMP effects were, however, noticed in Hawaii during a series of nuclear tests in the Pacific in 1962. Street lighting was disrupted and burglar alarms were tripped.

Growing concern about EMP during the 1970's has, however, prompted measures to test vital systems and shield them against damage. Among the consequences of lack of protection are disruption of military command and control systems and damage to a vast range of electronic equipment including weapons systems, telephone equipment, computers, and automobile ignitions.

The committee, which concerned itself exclusively with military systems, concluded that adequate protection is possible by shielding electronic equipment in copper-lined buildings or boxes, with electrical connections using fiber optics rather than metal wiring wherever possible.

An alternative approach, involving

**Evaluation of Methodologies for Estimating Vulnerability to Electromagnetic Pulse Effects*, Engineering Board, National Academy of Sciences, 2101 Constitution Avenue, NW, Washington, D.C. 20418.

the use of heavy-duty components and electrical shock absorbers to "harden" systems against EMP is currently widely employed. But the committee says it is "skeptical" of this method because there have been unpredicted failures in testing.

Asked whether this means that the committee believes that military systems are currently poorly protected, John M. Richardson, the Academy staff member who directed the study, said that the committee deliberately refrained from making an assessment of the current state of protection.

One of the chief recommendations of the study is that testing of components and systems under simulated EMP should be stepped up. One such test, planned by the Navy to monitor the effect of EMP on communications equipment, is, however, currently on hold because of fears of environmental damage. The test was to take place on the Chesapeake Bay in Maryland, but following protests from state officials, the Navy has promised to produce an environmental impact statement before going ahead.

The committee was chaired by John R. Pierce, emeritus professor of engineering at California Institute of Technology, and the study, which took 2 years, was conducted for the Defense Nuclear Agency.

—COLIN NORMAN

Soviets Tighten Rules on Contacts with Foreigners

Soviet authorities appear to be making concerted efforts to further limit dealings between Soviet citizens and foreigners visiting the U.S.S.R. One likely effect is to reduce informal contacts between American scientists and their Soviet counterparts.

A series of incidents in Leningrad involving U.S. citizens in recent months prompted the U.S. State Department on 6 August to issue a travel advisory warning Americans that they risk detention and denial of access to U.S. officials if they visit that city. In one instance, an American academic on his way to a private meeting with a Soviet scholar was arrested and held by police for two hours. A State Department spokesman said that the American was told "that a new Soviet law which took effect on 1 July did not require that foreigners be granted access to their consular representatives unless they were being deported."

In July, the State Department in Washington issued a broad analysis noting that the Soviets had tightened the laws on internal security, amending the provision on state crimes in a way that "has placed sweeping authority in the hands of the authorities." According to the analysis, the definition of state secret has been broadened to include the concept " 'work-related secret.' As a result, Soviet citizens face the possibility of criminal charges if they provide virtually any kind of information to a foreigner without official authorization." Some observers here note that if the law is applied rigorously, Soviet scientists would not be able to discuss their work with foreigners.

Before laws on state crimes are enforced they require implementing legislation in the separate Soviet Republics. Until that occurs, it will not be possible to gauge their impact. Knowledgeable observers here say that Soviet laws are often put on the books to be available if policy requires it but may be selectively enforced.

The State Department analysis comment:

"How these changes in the criminal code will be implemented in the post-Andropov period remains to be seen. Their very existence, however, is sure to have a chilling effect on contacts between Soviet citizens and foreigners and so affect those who travel in the U.S.S.R. as tourists or to meet relatives or who engage in business, exchange or academic activities."

A less portentous change already in effect seems likely to cut into informal contacts between visiting American and foreign scientists and their Soviet opposite numbers. A change in the rules passed by the Supreme Soviet on 25 May prohibits Soviet citizens from providing foreigners with "housing or means of transportation or . . . other services in violation of established regulations." One section is interpreted here as being aimed at discouraging Soviet citizens with private automobiles from transporting foreigners and from inviting them to stay overnight in their homes.

Violations of the rule are punishable by fines ranging from 10 to 50 rubles (the average monthly salary is about 150 rubles). Violators are liable to administrative penalties and are not subject to prosecution under the criminal code, however.

The provisions apparently apply not only to foreigners on ordinary tourist visas and members of delegations but those participating in formal exchange programs and relatives of Soviet citizens. One U.S. National Academy of Sciences staff member commented that the rule "theoretically applies to everybody, but how it's going to be implemented is not clear."

—JOHN WALSH

Comings and Goings

The Senate on 6 August confirmed the appointment of **Erich Bloch** as director of the National Science Foundation. Because of the legislative logjam as Congress headed toward the August recess, no hearings were held on the appointment. He will assume his duties full time in early September.

Thomas H. Lee, director of MIT's Laboratory for Electromagnetic Systems, has been appointed to a 3-year term as director of the International Institute for Applied Systems Analysis near Vienna. The Reagan Administration at the end of 1982 withdrew U.S. government support from the research organization which was founded in 1972 mainly through American and Soviet initiative (*Science*, 2 April 1982, p. 35). American participation has been maintained, however, through private fund-raising efforts with the American Academy of Arts and Sciences serving as U.S. national member organization.

Columbia University's two top medical administrators are stepping down as part of a management reorganization. **Robert I. Levy**, currently vice president for health sciences, and **Donald F. Tapley**, dean of the faculty of medicine, are relinquishing their positions, which will be combined into one post. Both will remain on the medical faculty at the university. **Henrik H. Bendixen**, currently chairman of the Department of Anesthesiology, will fill the post for the 1984–85 academic year. Tapley has been dean since 1974, Levy, a former director of the National Heart, Lung and Blood Institute, was brought in last year from Tufts University.