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.