

Briefing

H-Bomb Power Project Is Laid to Rest

Last week the Energy Research and Development Administration notified the Congress that it has no plans to continue with a controversial project that was ultimately intended to produce electrical power by repeatedly exploding hydrogen bombs in underground salt formations in the southeastern United States.

Major General Ernest Graves, director of military applications of atomic energy at ERDA, informed Representative Fred Richmond (D-N.Y.) that "due to funding limitations, ERDA has no plans at this time to continue its study of the Pacer fusion energy concept."

The name Pacer came from an approved list of titles for classified projects, cleared for security by the Atomic Energy Commission. For some reason, the list favored race horses.

Representative Richmond was the most vociferous member of Congress to oppose the plan, terming it a "mad scheme which should be placed in cold storage and forgotten about completely." The plan also received stiff opposition from residents of Texas, Louisiana, and Mississippi, where suitable salt domes are located.

The reason the plan was considered seriously at all was that physicists studying the problems of underground bomb tests had found that under certain conditions the blast could be "decoupled" from the surrounding environment. But the possible geological, technical, and radiation problems associated with detonations planned as often as twice a day, in addition to questions of cost and the likelihood of a bomb theft, convinced many scientists that, in the words of one skeptic, the idea was a "weapon builder's monstrosity."

Before cancellation of the Pacer plan, approximately \$750,000 was spent to study the feasibility of exploding 50-kiloton bombs in large underground cavities filled with water, to produce steam for generating electricity on the spot, and to breed reactor fuel for shipment to other parts of the country (*Science*, 11 April). The next stage would have cost \$40 million over the next 3 years, if it had been approved. The sponsors of the Pacer pro-

posal were the Los Alamos Scientific Laboratory and R & D associates in Santa Monica, California.

Although there were many questions about the scientific soundness of the plan, ERDA was aware of the political problems with exploding bombs in the American countryside. "If at some future date we decide to resume the study," said General Graves, "we will promptly notify the Congress and the states where Pacer plants might ultimately be situated." From the beginning, he says, "we recognized that it was controversial."—W.D.M.

Binary Program Wins A Narrow Escape

The Pentagon's binary weapons program narrowly escaped total destruction, so to speak, at the hands of Congress last week. A provision in the Senate version of the 1976 defense authorization bill would have made it illegal to do any research, development, testing or production of binary weapons—except by explicit presidential order. The measure was introduced by three freshman Democratic senators on the Armed Services Committee, incorporated into the bill by its powerful R & D subcommittee chairman, Thomas McIntyre (D-N.H.), and sped smoothly through the Senate. But, at the eleventh hour, in conference, it was defeated by House supporters of the binary program.

Binaries are chemical weapons whose two chemical components remain separate and do not mix and become lethal until after the munition is fired. The Army, which plans an eventual \$1 billion binary weapons program, argues that they are safer to store and transport than ordinary chemical weapons. Critics say that this is their only advantage. They say that binaries are less efficient in battle, that they could proliferate worldwide, and that the current chemical weapons (CW) stockpile, which the Army wants to replace with binaries, will not be in need of a replacement for another several years (*Science*, 21 June 1974).

If it had become law, the Senate provision would have zeroed any fiscal 1976 funds for any part of the binaries

program. But as things stand now, \$9.6 million has been authorized for binaries R & D; later in the summer or in early fall the Congress will consider two related appropriations: \$8.8 million to establish a binary weapons assembly line at Pine Bluff, Arkansas, and \$556,000 for related construction there. Last year, construction and preproduction funds requested by the Army were cut by Congress, but it is difficult to predict whether history will repeat itself this year.

For one thing, Secretary of Defense James R. Schlesinger has been raising some specters regarding the Soviet chemical warfare capability, which the U.S. program (which involves some \$45 million in R & D stockpiles in several countries, besides the effort on binaries) is meant to counter. At a 20 June press conference, Schlesinger was asked whether the United States would respond to a chemical warfare attack by the Soviet Union deep into Western territory with nuclear weapons:

"... Of course, we will not eliminate any option under such circumstances and that is certainly a possible response, although not a required response, for the Western Alliance," he replied. The remark echoed testimony of military officials before Congress this year, who have argued that the United States needs a strong CW capability to deter such a Soviet attack in the first place.

Schlesinger's remark was not surprising, since he has been talking a lot lately about circumstances in which the United States might launch a nuclear attack on the Soviet Union. It was even less surprising since he made the remark practically on the eve of congressional resolution of the fate of the binaries program.

With heavyweights like Schlesinger sounding alarms on CW, those seeking to cut the remaining binary weapons production item from the appropriation budget may face more of an uphill battle than ever. In the House, they are principally Floyd V. Hicks (D-Wash.) and Patricia Schroeder (D-Colo.); in the Senate, there are many who voted against a similar item last year. Added to these are the three freshmen who proposed the authorization item defeated last week: Gary Hart (D-Colo.), John Culver (D-Iowa), and Patrick J. Leahy (D-Vt.).—D.S.