The Senate's Plan for Nuclear Waste

A new bill offers to relieve the utilities of spent fuel, but leaves the bureaucracy the hard job of deciding where to put it

Judging by the spirit of compromise that carried the National Nuclear Waste Policy Act (S. 1662) through the Senate on 29 April, Congress may be ready this year to end a long legislative tussle over how to dispose of spent nuclear fuel. The Senate's bill establishes procedures and deadlines for selecting waste disposal sites, but it does not attempt to determine what technologies should be used.

Secretary of Energy James Edwards has said that he thinks a waste bill will pass this year, and he is not alone. Another optimist is Andrea Dravo, a staff consultant on the House interior subcommittee on energy and environment. For several years she has watched Congress try and fail to come up with a workable policy. But this time, she says, the Senate is "much closer" to what the House Interior Committee has proposed in earlier sessions and proposes again in 1982. The bill (H.R. 3809) was sponsored by the Interior Committee Chairman Morris Udall (D–Ariz.).

Dravo says, "If we can get to conference this year, we will produce a bill." The catch, however, is that the House has not passed a bill and cannot begin voting on one until the House Energy and Commerce Committee, which shares jurisdiction with Interior, reviews the subject. Apparently the chairman and ranking minority member cannot agree where to start.

The indecision on waste policy has had an adverse impact on the nuclear industry. Most importantly, it has magnified the fear that there may be no safe way to isolate the highly radioactive byproducts of the fission reactor. Together with the bad publicity of the Three Mile Island accident in 1979, this has undermined public confidence in nuclear technology.

In addition, nuclear industry spokesmen say that the delay is beginning to create a real garbage crisis for some utilities. It has been estimated that commercial reactors have already generated some 8000 metric tonnes of high-level waste, and military reactors have produced more than that amount. No commercial reprocessing plants are now operating in the United States, and consequently utilities have been storing their spent fuel rods in "swimming pool" storage tanks at reactor sites. Many of these are getting full. During the Senate debate, Senator John Warner (R–Va.) made much of the fact that the Virginia Electric Power Company will run out of storage space in 1983, for example. The Department of Energy has said that the crisis could arrive in 1986 and some industry experts have said it may come a bit later, but it is clear that current storage facilities have a limited and rapidly diminishing capacity.

One of the most important features of the Senate bill is thus a provision that would establish an interim storage facility for spent fuel rods until a permanent waste deposit is available. This provision also turned out to be one of the more controversial items, however, for it raised concerns among some senators that the facility would be built in their states.

Aside from the technical difficulties, the biggest obstacle to forming a national waste disposal plan has been the tendency of state and local interests to prevail over national needs. Leaders who agree that a radwaste disposal site is needed are not so enthusiastic to build one if their town or state is being considered as a possible location. Thus, some self-described supporters of nuclear power such as Senators John Stennis (D–Miss.), Charles Percy (R–Ill.), Alfonse D'Amato (R–N.Y.), and Strom Thurmond (R–S.C.) spoke strongly on 29 April against the part of the bill that might create interim storage facilities in their states. They put their case in general terms, saying they did not want to sponsor an expensive bail-out of the nuclear industry, and arguing that utilities should build additional storage capacity until a permanent site is ready. But they did not try to conceal an additional motivation: voters back home are worried that their communities will become the nation's most hazardous waste dumps. The senators did not succeed in deleting this portion of the bill, however.

The fact that the Senate overrode these powerful special appeals ought to cheer the nuclear industry. It suggests that Congress may be ready to make some difficult decisions. Some of the compromises incorporated in this bill also suggest Congress is ready to act.

One of S. 1662's major limitations is that it applies only to commercial, not to defense, waste. It was written this way partly for parliamentary convenience. Had it covered the military as well, it would have been referred to the Armed Services Committee. Here there was a special concern that state secrets might be jeopardized by sections of the bill requiring full technical disclosure of waste shipment, storage, and disposal plans. To avoid controversy the authors simply left the military out of the picture, but included the provision that waste from military reactors may be included in "civilian" disposal sites later.

Similarly, the bill steers clear of the fuel-reprocessing debate by calling for disposal systems that will handle processed or unprocessed fuel.

In order to reassure members of Congress that they were not abandoning their right to take part in future decisions, the bill allows for a legislative veto. It works as follows. The secretary of energy must notify each state or Indian tribe by a certain deadline of his intention to consider its territory as a potential host for a disposal site. Within another year, the secretary must work out a plan for cooperation with the state or tribe. Additional notice is given as site choices are narrowed. After all consultations are ended, if a state or tribe still objects to a construction plan, the governor or tribe leader may file an objection in both houses of Congress. It automatically appears on the legislative calendar.

Commercial reactors have already produced 8000 metric tonnes of high-level waste.

0036-8075/82/0514-0709$01.00/0

National Academy of Sciences Elects New Members

The National Academy of Sciences has elected 60 new members and 12 new foreign associates. Those elected bring the total Academy membership to 1386 and the total of foreign associates to 209. The new members are:

Guenther Ahlers, physics, University of California, Santa Barbara; **Don L. Anderson**, Seismological Laboratory, California Institute of Technology; **John D. Axtell**, agronomy, Purdue University; **Howard L. Bachrach**, Plum Island Animal Disease Center, Greenport, N.Y.; **Robert W. Balluffi**, metallurgy, Massachusetts Institute of Technology; **Allen J. Bard**, chemistry, University of Texas, Austin; **Hyman Bass**, mathematics, Columbia University; **Gordon Baym**, physics, University of Illinois, Urbana; **Eugenio Calabi**, mathematics, University of Pennsylvania; **Allan H. Conney**, biochemistry and drug metabolism, Hoffmann-La Roche Inc.; **Clyde H. Coombs**, psychology, University of Michigan; **Erminio Costa**, Laboratory of Preclinical Pharmacology, National Institute of Mental Health, St. Elizabeth's Hospital, Washington, D.C.; **Pedro M. Cuatrecasas**, molecular biology, Burroughs Wellcome, Research Triangle Park, N.C.

James O. Davis, zoology, University of Minnesota; **Margaret B. Davis**, zoology, University of Minnesota; **Raymond Davis, Jr.**, chemistry, Brookhaven National Laboratory; **Irving T. Diamond**, psychology, Duke University; **Dean E. Eastman**, IBM fellow, Thomas J. Watson Research Center, Yorktown, Heights, N.Y.; **Edwin J. Durshpan**, neurobiology, Harvard Medical School; **Quentin H. Gibson**, biochemistry and molecular and cell biology, Cornell University; **Harold S. Ginsberg**, microbiology, Columbia University; **Bertrand I. Halperin**, physics, Harvard University; **Leonard A. Herzenberg**, genetics, Stanford University; **Robin M. Hochstrasser**, chemistry, University of Pennsylvania; **Alan J. Hoffman**, IBM fellow, Thomas J. Watson Research Center; **Leroy Hood**, biology, California Institute of Technology; **Carl B. Huffaker**, entomology, University of California, Berkeley; **Fotis C. Kafatos**, biology, Harvard University; **Ivan R. King**, astronomy, University of California, Berkeley; **Jay K. Kochi**, chemistry, Indiana University; **Stuart Kornfeld**, medicine and biochemistry, Washington University School of Medicine.

Robert W. Mann, biomedical engineering, Massachusetts Institute of Technology; **Barry C. Mazur**, mathematics, Harvard University; **Donald S. McClure**, chemistry, Princeton University; **Fred W. McLafferty**, chemistry, Cornell University; **William L. McMillan**, physics, University of Illinois, Urbana; **Harold A. Mooney**, environmental biology, Stanford University; **William S. Morgan**, geophysics, Princeton University; **Ira H. Pastan**, Laboratory of Molecular Biology, National Cancer Institute, National Institutes of Health; **William E. Paul**, Laboratory of Immunology, National Institute of Allergy and Infectious Diseases, National Institutes of Health; **Donald O. Pederson**, electrical engineering and computer sciences, University of California, Berkeley; **Edmund S. Phelps**, economics, Columbia University; **Phillips W. Robbins**, anthropology, University of Pittsburgh.

John M. Roberts, anthropology, University of Pittsburgh; **Ian M. Ross**, Bell Telephone Laboratories, Murray Hill, N.J.; **Gian-Carlo Rota**, mathematics, Massachusetts Institute of Technology; **Nicholas P. Samios**, Brookhaven National Laboratory; **Matthew D. Scharff**, cell biology, Albert Einstein College of Medicine; **John A. Schellman**, chemistry, Institute of Molecular Biology, University of Oregon; **Robert K. Selander**, zoology, University of Rochester; **Donald C. Shreffler**, genetics, Washington University School of Medicine; **Melford E. Spiro**, anthropology, University of California, San Diego; **Daniel Steinberg**, medicine, University of California, San Diego; **Gunther S. Stent**, bacteriology and molecular biology, University of California, Berkeley; **Saul Sternberg**, human information processing, Bell Telephone Laboratories; **Charles F. Stevens**, physiology, Yale University School of Medicine; **E. Donnall Thomas**, medical oncology, Fred Hutchinson Cancer Research Center, Seattle, Wash.; **Waldo Tobler**, geography, University of California, Santa Barbara; **Herbert Weissbach**, biochemistry, Roche Institute of Molecular Biology; **Robin M. Williams, Jr.**, social science, Cornell University.

The new foreign associates are: **Nicola Cabibbo**, theoretical physics, University of Rome, Italy; **Shmuel Eisenstadt**, sociology, Hebrew University of Jerusalem, Israel; **Paul Fraisse**, experimental psychology, University of Paris V, France; **Marianne Grunberg-Manago**, biochemistry, University of Paris VII, France; **Hua Luogeng**, Institute of Mathematics and Institute of Applied Mathematics, Chinese Academy of Sciences, Beijing, People's Republic of China; **Il'ya Mikhailovich Lifshitz**, Institute for Physical Problems, Moscow, U.S.S.R.; **Jacques F. A. P. Miller**, experimental pathology, The Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia; **Martin J. Rees**, Institute of Theoretical Astronomy, University of Cambridge, United Kingdom; **Ralph Riley**, secretary, Agricultural Research Council of the United Kingdom, London; **John Maynard Smith**, biology, University of Sussex, United Kingdom; **Takashi Sugimura**, molecular biology, Tokyo University, Japan; **Tsuneo Tomita**, professor emeritus, School of Medicine, Keio University, Tokyo, Japan.

If either house supports the objection, the plan must be dropped.

If neither house supports the petition within 90 days, the proposal is submitted to the Nuclear Regulatory Commission (NRC). Even that is not the end of the line. The objector may continue to fight the federal plan through the NRC's administrative review and, after that, through the courts. (The House Interior Committee bill is more protective of states' rights, in that it requires a joint resolution of Congress to override a local objection.)

Another controversial section provides an interim solution to the nuclear garbage crisis by creating a federally owned and run facility called an away-from-reactor storage site (AFR). The Secretary of Energy is empowered to buy spent fuel from utilities that have exhausted all options short of closing. The government would agree to haul the waste from the reactor and keep it at an AFR until a permanent site is ready to receive it. (This is the provision that Stennis, Percy, Thurmond, and D'Amato opposed.)

In addition to this temporary storage system, the bill requires the Department of Energy to offer two kinds of long-term waste disposal. One facility would serve as a permanent repository, and the other would permit waste canisters to be monitored and recovered if necessary. A number of deadlines applying to these still rather vague entities are written into the law. For example, the Secretary of Energy would have to choose three candidate sites for a permanent repository by 1984 and an additional three sites by 1987. After exploration and study, a first site would be chosen by 1986 and a second by 1989. A site for a test waste-processing plant would have to be chosen by 1983, and the plant put into operation by 1988.

One of the most important features of the bill is the provision for long-term funding. Its purpose is to free researchers and planners from the annual appropriations process, so that work on nuclear waste will not be affected by shifts in the political climate. The bill would create a special account in the Treasury financed by a 1-mil-per-kilowatt fee on the generation of nuclear electric power and a commensurate fee on radioactive waste delivered to the government.

Even if enacted this year, a bill like this would have to be considered only a hesitant first try at solving the nuclear waste problem. It deals with none of the technical disputes and leaves the highly difficult task of site selection to the bureaucracy.—ELIOT MARSHALL

0036-8075/82/0514-0710$01.00/0