"Cooperative Federalism" Proposed for Siting Waste Repositories

What the nuclear enterprise needs most as it tries to fend off its critics is a well defined, widely accepted national policy and program for the disposal of radioactive wastes. The Carter Administration may have taken a major step toward establishing such a policy with the issuance on 19 October of a draft report by the Interagency Review Group (IRG) on waste management, which the White House set up late last winter. Spokesmen for the National Governors' Association and two prominent environmental groups praised the report as an improvement over past efforts at formulating a waste management policy.

This report, which is accompanied by a subgroup report on alternative technology strategies prepared under the leadership of the White House Office of Science and Technology Policy (OSTP), will be put in final form and submitted to the President after the close of a 30-day period for public comment.* It seems to be the most technically conservative and politically discreet official discussion of nuclear waste management put forward so far.

Past statements have indicated that the scientific feasibility of disposing of high-level reprocessing wastes (HLW) or spent reactor fuel in deep geologic formations—and in salt formations in particular—is not in doubt. The present report also takes an optimistic view, but does so in a guarded and carefully qualified fashion, and characterizes the past emphasis on seeking engineering solutions to the waste disposal problem as "too simplistic" and as having suffered from too little reliance on the materials and earth sciences.

John M. Deutch, chairman of the IRG, acknowledged at a press briefing that the IRG was divided as to the two key policy options set forth in the report for selecting the first repository site for spent fuel or HLW. One option is to choose a salt formation, the geologic medium which the Department of Energy (DOE) has been investigating and counting on all along; under this option, the site might be selected by 1980 and the repository constructed as early as 1988. The other option is to await the availability of a wider range of media (basalt and granite are among other media being investigated); but in this case site selection could not be made before 1984 and construction of the repository could not be completed before 1992, at the earliest.

Although Deutch did not say how the IRG member agencies lined up on this issue, most of the 14 agencies represented on the IRG are understood to favor the more technically conservative option, or the one looking to the wider choice of emplacement media. The DOE, on the other hand, is said to favor saving time by proceeding with salt.

The draft report acknowledged that adoption of this option could lead to a rapid increase in information and provide an early showing of progress. But it said that it involved "increased risk of both technical and institutional failure which could be detrimental to the overall program." Licensing and construction of "intermediate scale" experimental facilities (for up to 1000 fuel assemblies) in different geologic media was recommended as a key to a sound R & D strategy. The first of these might be available by 1986, the report said.

Past approaches to selection of repository sites have been chiefly notable for the amount of political opposition stirred up in states (such as Michigan, Louisiana, and New Mexico) where salt formations were coming under investigations. The new approach recommended in the draft report is put forward under the label of "cooperative federalism."

Under this approach, the President would establish an "executive planning council" that would include selected governors and representatives of groups such as the National Conference of State Legislatures, the National League of Cities, and the Council of Energy Resources Tribes as well as officials from the DOE and other federal agencies. The council would, among other things, develop criteria and plans for siting repositories and help design and evaluate environmental impact statements on such proposed facilities.

In addition, the particular states where possible repository sites are identified would be assured that site selections would be made by a process of "consultation and concurrence." No site would be selected without the agreement of the state in which it is located. The IRG said

*Available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The IRG report is priced at $9 per printed copy, $3 per microfiche; the subgroup report, $9.50 and $3.

Uranium Mill Tailings Bill Enacted

In its closing hours, the 95th Congress enacted legislation dealing with the disposal of uranium mill tailings, a significant but long-neglected part of the overall problem of radioactive waste management (*Science*, 13 October).

The legislation, which the Carter Administration supported, has two principal features. First, it provides for the federal government—with the affected states to pay 10 percent of the total cost—to undertake to eliminate the hazards associated with more than a score of inactive tailings piles left from past uranium milling operations carried on under Atomic Energy Commission contracts. The cost of this effort has been put at $140 million, but this estimate may fall far short of the true cost, especially inasmuch as a number of the piles probably cannot be stablized and rendered innocuous in place but will have to be moved.

Second, the legislation clarifies and strengthens the authority of the Nuclear Regulatory Commission (NRC) to insist on proper tailings management by its uranium mill licenses. Equally important, it will require those states which have chosen to license such milling operations themselves to abide by substantive standards at least as stringent as the NRC's. Procedural standards for public hearings and environmental studies also are prescribed.

The Atomic Safety and Licensing Board, in decisions issued in two reactor licensing proceedings last summer, indicated that implementation of NRC policies for tailings disposal will reduce future environmental and health effects to negligibly small proportions. This sanguine view will, however, be debated next year when the forthcoming generic environmental impact statement on tailings disposal comes under public review.—L.J.C.

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this right of concurrence is preferable to having Congress confer on the states the authority to "veto" repository projects (although the only difference would seem to be that, with the consultation and concurrence process, no state would be expected to reject a site precipitously).

The IRG recommended against relying on a single geologic repository through the end of the century as present policy contemplates. Instead, it called for two or three repositories, each in a different region. "With [the] single-repository approach," the report observes, "the near-term construction and operating costs might be less. However, the need to transport wastes from all over the United States to a single facility could add significantly to cost and would result in numerous political and other institutional problems during site selection and operation."

The National Governors' Association had itself proposed the consultation and concurrence concept, and its reaction to the IRG draft report was enthusiastic. The chairman of this group's Nuclear Power Subcommittee, Governor James B. Edwards of South Carolina, dispatched a telegram to Deutch commending the IRG for taking a "most unbureaucratic and refreshingly productive" approach to the waste management problem. In past years Edwards has been concerned lest an attempt be made to commit the high-level military wastes now in temporary storage at the DOE's Savannah River plant to a bedrock formation that underlies one of the most important freshwater aquifers in the Southeast.

Two environmental groups deeply involved with the radioactive waste issue, the Union of Concerned Scientists and the Natural Resources Defense Council, issued a joint statement hailing the IRG report as a "positive and welcome change from the tired rhetoric of waste management reports of previous administrations." But these groups qualified their praise by saying that the IRG had failed to address the question whether more wastes should be generated in the absence of a convincing demonstration that the problem of ultimate disposal will be solved.

They also complained that the report does not evaluate the controversial Waste Isolation Pilot Project (WIPP) for transuranic defense wastes—and possibly an intermediate scale experimental venture with spent fuel—which the DOE has hoped to carry out near Carlsbad, New Mexico, if its site investigations there turn up positive. In their view, WIPP is plainly inconsistent with siting criteria set out in the report. They say, for instance, that, whereas the report indicates that sites should be selected with a view to minimizing the possibility of human intrusions during the thousands of years the wastes remain hazardous, the presence of potash deposits in the vicinity of the WIPP site is an invitation to such intrusions.

The past performance of the DOE and its predecessor agencies in waste management has been such as to inspire proposals in Congress and elsewhere that the department be relieved of responsibility in this field by establishing an independent agency. But the IRG indicated in its report that to set up a new agency would lead to more delay in getting on with the job and to a loss of the appropriate perspective of waste management viewed in relation to energy production and other energy-related environmental issues.

It recommended that the DOE develop and implement waste management plans subject to the regulations and licensing authority of the Nuclear Regulatory Commission. The report makes no mention of the proposal put forward recently by the "Keystone group" (an ad hoc nuclear waste discussion group made up of environmentalists, academicians, and industry people) to have the President's science adviser serve temporarily as the top policy-maker in this field (*Science*, 6 October).

A policy issue considered inconclusively by the IRG was whether all new post-reprocessing facilities to be built by the DOE for high level military wastes should be licensed by the NRC. These facilities would include vitrification and encapsulation plants and tanks for the temporary storage of HLW. Although the congressional armed services committees are resisting proposals to extend NRC licensing to new defense waste facilities, some IRG member agencies (such as the Council on Environmental Quality) felt that all such facilities should be licensed. Final repositories for HLW must be licensed even under existing law.

The IRG report and that of its subgroup encompass such a wide range of technical and policy issues related to both commercial nuclear power and military wastes that only the highlights are summarized here. But some of the incidental findings, such as the one holding that whether spent fuel is reprocessed or not is not a question "fundamentally related" to safe waste disposal, are also weighty in their implications for waste management in the United States and abroad.—LUTHER J. CARTER

RECENT DEATHS

Geary F. Eppley, 82; former professor of agronomy, University of Maryland; 17 June.

N. B. Everett, 62; former chairman of biological structure, University of Washington School of Medicine; 23 May.

Roxana S. Ferris, 83; curator emerita, Dudley Herbarium, Stanford University; 30 June.

Rudolf Grah, 62; professor of forestry and conservation, University of California, Berkeley; 25 May.

Karl F. Herzfeld, 86; former chairman of physics, Catholic University; 3 June.

George H. M. Lawrence, 67; director emeritus, Hunt Institute for Botanical Documentation, Carnegie-Mellon University; 11 June.

K. Lucille McCluskey, 86; professor emeritus of chemistry, St. Xavier College; 16 June.

Walter R. Miles, 93; retired professor of psychology, Yale University; 15 May.

Glenn Murphy, 70; former chairman of nuclear engineering, Iowa State University; 2 April.

Wayne W. Panyan, 37; associate professor of engineering, University of Detroit; 9 June.

Robert Parent, 61; professor of electrical engineering, University of Wisconsin, Madison; 23 June.

Giuseppe Parravano, 60; professor of chemical engineering, University of Michigan; 1 April.

Thomas C. Poulter, 81; physicist and senior scientific adviser, Stanford Research Institute International; 14 June.

Emil Prout, 58; professor of metallurgical engineering, Cleveland State University; 11 June.

Dennis E. Pulestron, 38; associate professor of anthropology, University of Minnesota; 29 June.

Oscar K. Rice, 75; professor emeritus of chemistry, University of North Carolina, Chapel Hill; 7 May.

Lloyd L. Smith, Jr., 68; professor of entomology, University of Minnesota; 17 June.

Russell P. Smith, 80; former chairman of physics, Grove City College; 14 May.

Edmund M. Spieker, 83; professor emeritus of geology and mineralogy, Ohio State University; 6 March.

James T. Wilson, 63; geologist and seismologist and director, Institute of Science and Technology, University of Michigan; 25 May.

Edgar W. Woolard, 79; meteorologist and director, Nautical Almanac Office, U.S. Naval Observatory; 17 June.