

Radioactive Waste Policy Is in Disarray

Carter Administration and some key members of Congress go in opposite directions; White House is slow to act

High among the Carter Administration's priorities are developing more abundant energy supplies, protecting the environment, and preventing the proliferation of nuclear weapons. But, as a former White House staffer recently observed, situated right at the point where these issues intersect—and complicating efforts to deal with them—is the controversial and politically recalcitrant problem of managing the large and growing inventory of radioactive wastes from the production of nuclear power and nuclear weapons.

At the moment, national policy-making in the field of "radwaste" management and disposal is in disarray. For one thing, the Department of Energy (DOE), the government's waste management agency, is in disagreement with most of the other interested departments and agencies on several radwaste policy issues. But the policies of DOE and the other agencies can be said to be almost in harmony compared to the extreme divergence of viewpoints in Congress.

Various senators and representatives, including several key committee chairmen, are galloping off in different directions in their search for solutions to the radwaste problem. For example, Senator Gary Hart (D-Colo.), chairman of the Subcommittee on Nuclear Regulation, is one of several members who would make the survival of nuclear power dependent upon an early solution to the waste problem. Hart is proposing that, unless by 1985 the Nuclear Regulatory Commission (NRC) can attest that an adequate plan is available for the permanent isolation of spent reactor fuel or high-level waste from the biosphere, a moratorium on the licensing of new reactors would take effect and the operation of existing reactors would be phased out over a 10-year period.

At the other extreme is a bill by Senator Bennett Johnston (D-La.) and co-sponsored by Senator Henry M. Jackson (D-Wash.), chairman of the Committee on Energy and Natural Resources, that calls for spent fuels to be stored indefinitely—up to 100 years or even longer—under continuous human surveillance and control; the wastes would be readily retrievable and, according to a Johnston aide, repositories of this kind might be

located in any or all regions and would probably be either surface or near-surface facilities.

Although strong presidential leadership might help build a consensus in the Congress and in the nation on the waste issue, it has not yet been forthcoming. Shortly after the Carter Administration took office in 1977, however, an ambitious review of radwaste policy was undertaken, first by DOE, then by an Interagency Review Group (IRG) on Nuclear Waste Management.

This past March, the IRG issued its final report to President Carter. It was expected that, within several weeks, the President would decide the issues on which the IRG members had been unable to agree and then make the long-awaited announcement of the Administration's radwaste policy. But that announcement has been delayed repeatedly, and at this writing it is again said to be some weeks away.

The delay has been attributed in part to the difficulty encountered in drafting a "decision paper" for the President and the press of other White House business. Whatever the cause, the delay has been costly to the Administration in terms of lost momentum and a lost opportunity to fill a vacuum that members of Congress have now rushed into, some with proposals that will clash sharply with the President's own policies.

The IRG report set forth a number of findings and recommendations which the member agencies agreed to unanimously and which Carter is expected to endorse. In particular, all of the agencies agreed that the most promising way to dispose of the most hazardous wastes is to commit them to mined repositories in deep geologic formations such as bedded and domed salt, granite, shale, basalt, and tuff.

The agencies were unanimous in concluding that a philosophy of technical conservatism should guide selection of the repository sites, but they differed as to the degree of conservatism called for. Eager to demonstrate the feasibility of ultimate disposal and thus refute charges by the "antinukes" that nuclear power is choking on its own wastes, DOE took the view that a site should be chosen as soon as two or three sites, in different

geologic media, have been investigated and found to meet criteria prescribed by either NRC or the Environmental Protection Agency (EPA). DOE was supported by two of the other participants in the IRG, the Department of State and the Arms Control and Disarmament Agency (ACDA)—each apparently persuaded that no time should be lost in demonstrating to other nations that spent fuel can be disposed of as waste and need not first be reprocessed for recovery of its plutonium.

But a majority of the IRG agencies, including the EPA, the Department of the Interior, the Council on Environmental Quality, and the Office of Science and Technology Policy, concluded that no site should be selected until at least four or five sites, in different media, have been found qualified under EPA or NRC criteria. Whereas selection of a site might come as early as 1982 if only two or three qualified candidates were to be considered, it could be delayed at least until 1985 under the policy favored by the IRG majority.

All the agencies agreed that, pending the opening of the first repository sometime between 1990 and 1995, most of the spent fuel from nuclear power plants should continue to be stored in "swimming pools" at the reactor sites; but that in cases where the capacity of the pools could not be enlarged enough to accommodate the need, the government would, for a fee, accept spent fuel for storage at one or more Away From Reactor (AFR) surface storage facilities to be established during the next several years.

Actually, the agencies were merely restating the spent-fuel policy announced by President Carter in the fall of 1977. Besides providing for AFR storage of domestic fuel, Carter's policy envisioned storage of some spent fuel from foreign nations which might otherwise be reprocessed under circumstances that would create a risk of theft or other diversion of plutonium.

The IRG report dealt with a number of other important questions, including several bearing on political problems. These are, if anything, more recalcitrant than the scientific and technical problems. The member agencies concluded unanimously that the role of the state govern-

ments in the selection of repository sites should be one of "consultation and concurrence," which means that the states would be consulted about candidate sites within their boundaries and given the right to reject them.

DOE has been saying in recent years that the states already have a "de facto veto" over site selections. By recommending that the President explicitly recognize that the states should have a right of concurrence, the IRG was hoping that the states could be brought around to a more willing and cooperative attitude. As matters stand, more than a dozen states have enacted laws that either flatly prohibit or make difficult the establishment of radwaste repositories.

What seems especially to be needed at this point is for the President to present all of the major elements of the Administration's radwaste policy to Congress in a coherent, persuasive, and forceful statement. For instance, a case can be made that the proposed AFR program and the geologic repository program are mutually supporting. If assured that there will be adequate AFR storage, the government can proceed cautiously and deliberately with repository development, making it far less likely that the program will end in another failure such as the attempt in the early 1970's to establish a repository in a salt formation in Kansas which was ultimately found to have numerous drill holes from previous exploration for oil and gas. At the same time, having a well-funded repository development program under way can be pointed to as evidence that AFR storage is not one of those provisional measures that will go on forever and frustrate attainment of a permanent solution.

There is, however, a strong tendency for environmentalists to see the AFR storage program as an unwelcome stop-gap that "lets the nuclear industry off the hook" on the radwaste issue. For their part, many in the nuclear industry view the repository program as not merely technically conservative, but as driven by a desire to ensure the security and permanence of waste isolation to a degree that is unattainable given the immense time spans involved. Also, they suspect that the anti-nukes really do not want to see an early solution to the waste problem and that they prefer instead to cite the continuing accumulation of wastes at the reactor sites as an argument to shut down nuclear power.

In his present weak political condition, President Carter may find it difficult to assert effective leadership on so controversial and divisive an issue as radwaste policy. Even so, he could establish

Cancer Policy Announced

The heads of the major Washington regulatory agencies gathered on 28 September to announce with considerable fanfare that they had reached agreement on a national policy for the regulation of chemical carcinogens.

The agencies "will work together to combat these hazards, will use the same scientific basis for their actions, and take . . . the least disruptive, most efficient path to minimizing or eliminating the dangers," said Douglas Costle, administrator of the Environmental Protection Agency (EPA) and chairman of the Federal Regulatory Council, which coordinated the agreement.

The announcement, which was made in the Old Executive Office Building adjacent to the White House, contained little in the way of news. The President's top domestic adviser, Stuart Eizenstat, appeared just long enough to give a 3-minute speech on behalf of President Carter's general deregulation effort and disappear, leaving the Carter regulatory appointees behind to talk up a major new initiative. In fact, the spirit of the occasion was dampened considerably when the bureaucrats acknowledged they had barely disagreed about the regulation of carcinogens in the first place.

Costle spoke of the need 11 months ago, when the government first began grappling with a policy statement, to "head off a confusing situation" in which each agency was preparing to write its own carcinogen policy. Several of the agencies still have plans to do that, but supposedly each will come under the umbrella of broad ideas outlined by the council. "The left hand will [now] know what the right is doing," Costle predicted.

No one, however, could identify exactly how an agency might differently regulate a carcinogen, now that a uniform policy has been enacted. "The effect of the policy is more subtle than that," said one official.

Most of the policy reaffirms principles that have come into wide acceptance among federal scientists within the last decade. It vigorously supports the validity of animal tests for the prediction of human hazard, for example. Recently, the President's Council on Environmental Quality noted that 22 prestigious scientific reports have endorsed this principle since 1956. The new federal policy also points out the need to assess human health risks, and the importance for each agency to take most seriously the greatest health risks within its jurisdiction.

Federal regulators find value in strumming these harps repeatedly. "The policy demonstrates a broad consensus to the public and to industry," says Steve Jellinek, associate administrator for toxic substances at EPA. "We are taking a consistent intellectual stand and presenting a unified view."

In those isolated areas where a dispute really did exist, such as the currently hot topic of cost-benefit analysis, the language of the policy document was deliberately fudged so that the consensus could be maintained. About the issue of removing a carcinogen from the environment so that no risk remains, for example, the policy has this to say: "In some cases, zero risk will be an appropriate regulatory goal," particularly when chemical substitutes are less costly and create no risks of their own. On the other hand, "zero risk will not routinely be considered achievable." And in any event, "these principles will ordinarily guide the agencies in initiating regulatory actions, but they will not be rigidly and uniformly applied in all cases."

The policy also sidesteps the controversial issue of whether the regulators should be forced to estimate exact human exposure to a risk, and to quantify it in excess deaths or other terms. Several of the federal statutes on carcinogens are silent on the point, and some of the regulators would prefer not to make such estimates unless forced to do so. The Occupational Safety and Health Administration, for example, prefers to identify a hazard and order correction, without first detailing the level and significance of the human exposure. The new national cancer policy states firmly that "the particular form and type of risk assessment will depend on the suitability of the available information to support different types of analyses, and upon the amount of information the agency needs to support proposed regulatory actions." Explicit direction, that is not.—R. JEFFREY SMITH

a unified policy for the Executive Branch and could probably do a lot more than anyone else to help Congress see the radwaste problem in a clear perspective.

The President could, in fact, help clarify and reinforce Administration policy on several specific issues.

- *He could explain how the proposed AFR storage program fits into the Administration's overall radwaste management and nonproliferation strategy.*

If Congress takes any action at all this year on the Administration's request for authority to begin an AFR storage program, it may be only to provide money for study and planning. Some members, such as Senator Hart, are decidedly skeptical as to the need for AFR storage and are particularly distrustful of the motives behind proposals to establish some of the storage capacity at the Allied General Nuclear Services reprocessing facility at Barnwell, South Carolina; in their view, an AFR storage facility at Barnwell could (in Hart's words) "create an undue incentive . . . to restart the reprocessing program" which President Carter decided to stop in 1977 as an example for other nations.

As already noted, most environmental lobbyists see AFR storage as an easy way out for the nuclear industry and, like Senator Hart, say that the electric utilities should increase spent-fuel storage at the reactor sites. But studies by DOE, the nuclear industry, and even the congressional General Accounting Office all indicate that some AFR storage will be needed by the end of the 1980's, if not sooner.

Also, if the U.S. nonproliferation policy is to be taken seriously, the government must be prepared to make good on its offer to receive some foreign spent fuel. Some Administration officials have looked to tiny Palmyra Island, 1000 miles southwest of Hawaii, as a place to establish an AFR storage facility for nations such as Japan, South Korea, Taiwan, and the Phillipines, should they wish to take the United States up on its offer. But New Zealand and Australia are strongly opposed to the idea of a nuclear dump in the South Pacific, and for this as well as other reasons, the Palmyra Island proposal looks like a loser.

- *The President could explain why he and his IRG advisers feel that deep geologic disposal represents the best ultimate solution for the waste problem, both in terms of secure isolation of the wastes and political acceptability. He could also explain why this disposal program should not be hurried, as it indeed might be if the survival of nuclear power hangs on its completion.*

Senator Johnston, who is willing for AFR storage to become the permanent solution to the waste problem, argues that no plan for geologic disposal of radwaste will be able to withstand the criticism that the repository may fail over geologic time. He would avoid this possibility by keeping the radwastes at AFR facilities under continuous human monitoring and control. But the response of most of the IRG participants to this argument is that human institutions are likely to fail sooner than geologic structures. Moreover, the commitment of wastes to AFR storage for an indefinite period would almost certainly not be perceived by the public in the same light as temporary storage of spent fuel at reactor sites, which is itself becoming controversial in some areas, such as Chicago. Thus, the task of gaining the consent of state and local governments for the siting of the kind of facility that Senator Johnston has in mind could well prove impossible.

The idea of tying the fate of nuclear power to the success of the geologic disposal program within a fixed time period is attractive to many environmentalists as well as to some members of Congress. But a major difficulty with this idea is that it might be far more likely to result in excessive haste in the conducting of research and development and field investigations than in shutting down nuclear power.

At an international symposium on radwaste management held in mid-Septem-

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ber at Keystone, Colorado, there was wide agreement among the participants (environmentalists, academics, and people from industry and government) that, although schedules and mileposts should be established for the repository program, the technical work should be deliberate, careful, and unhurried. One participant, Rustum Roy, director of the materials science laboratory at Pennsylvania State University, asserted the view that if time is allowed for its development, a ceramic matrix for solidifying or packaging radwastes will be developed that can immobilize the wastes for thousands of years.

- *The President could emphasize that success in radwaste disposal is unlikely unless the state governments, and the constituencies they represent, can be persuaded to take a cooperative attitude, and at least not say "no" even before prospective repository sites have been fully investigated.*

Just what form this persuasion will have to take to be effective is not yet clear. Federal efforts to encourage "public participation" may serve chiefly to amplify public opposition. Substantial financial incentives may prove to be necessary to convince states that the benefits of having a geologic repository, or an AFR storage facility, are in balance with the costs and the risks.

One thing appears certain: no state is likely to accept a waste storage or disposal facility unless given the privilege of "consultation and concurrence" referred to earlier. Also, state and local officials are likely to be more receptive to projects for the disposal of wastes from the nuclear weapons program if these projects, like projects for the disposal of power plant wastes, are subject to licensing by an independent regulatory body, namely the NRC. This needs stressing because Congress may be on the verge of authorizing a military waste repository in New Mexico that would not be subject to state consent and NRC licensing—neither is favored by the House and Senate armed services committees. Senator Hart and Representative Morris Udall of Arizona, an energy subcommittee chairman in the House, believe such facilities should be subject to NRC licensing and at least a qualified state veto right (one that Congress could override).

The President can effectively set policy for some aspects of the waste management program but, in the final analysis, the program can go forward only with the support of Congress. This was strikingly illustrated earlier this year when an Administration request for the money to start work on a \$2.8 billion high-level waste solidification facility at DOE's Savannah River Plant was denied.

If the effort to establish an effective radwaste disposal fails, this will be bad news for everybody. It could mean the continuation of waste management practices never intended to be more than temporary, with the risks increasing as the years go by. Or, if the fear of radiation hazards happens to outweigh public concern about energy shortages, it could mean, eventually, the end of nuclear power. The antinukes would welcome this result, but the circumstances leading to it could give them cause only for alarm.—LUTHER J. CARTER