

ISSUES TO BE RESOLVED FOR THE SUCCESSFUL IMPLEMENTATION OF THE NUCLEAR WASTE POLICY ACT:

THE VIEWPOINT OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

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ABSTRACT

After several decades without success in creating a program for disposing of spent nuclear reactor fuel, the Congress made a grand prescriptive effort to establish a successful pathway to disposal, embodied in the Nuclear Waste Policy Act of 1982 (the Act). Among the many new approaches is the funding of the nuclear waste program, now estimated to cost \$20 to 40 billion. The majority of that expense is for commercial waste disposal and is now by law the burden of nuclear electric utility ratepayers; for, while utilities funnel the monies to the U.S. Department of Energy (DOE), it is ratepayers from whose pockets these billions are supplied. Recognizing that fact and its surpassing importance, the regulatory utility commissioners of the nation have formed through their organization, the National Association of Regulatory Utility Commissioners (NARUC), a program to monitor, assess and advise the federal administration and the Congress of the United States on the subject. Officially active since early 1985 but consisting of individuals who long have observed the ups and downs of the federal effort, the NARUC Subcommittee on Nuclear Waste Disposal continues to review, reach conclusions, comment and testify on the many fiscally-related aspects of the program.

The responses of the DOE to the Act have raised increasing public concern, especially in the wake of the DOE's apparent unilateral decision on May 28, 1986 to postpone indefinitely a search for the site of a mandated second high-level nuclear waste repository. The Congress responded to this most recent action by funding the program for the next fiscal year at less than two-thirds the Administration's request.

To survive, the program should be revised to assure maximum resistance to political influence, deal more openly with states under study for sites, restore and maintain program credibility, and demonstrate a technically competent and thoughtful approach that generates general public acceptance. This paper outlines areas of the program which the NARUC considers critically important to be revised and strengthened lest the present difficulties totally overcome progress toward a disposal solution. The Congress must take the lead in this effort.

INTRODUCTION

This year of 1987 represents the fourth anniversary of the Act, the end of four of the scheduled 15 years during which a nuclear waste repository is to be developed. It is an important time to consider revisions in the federal program, a task the Congress is fully expected to undertake very early in this year. The NARUC's responsibilities to ratepayers require our earnest attention to assuring that this highly radioactive waste is successfully removed to permanent disposal in a cost-effective, efficient and safe manner. Mid-course corrections are not out of line with the history of other complex programs; indeed the surpassing importance of the public, political, social and technological issues demands their consideration. Issues the NARUC believes must be resolved and suggestions for resolution discussed in this paper are:

- . program management
- . cost control
- . repository licensing by the U.S. Nuclear Regulatory Commission (NRC)

- . funding for disposal of defense wastes
- . program credibility
- . the effectiveness of the Congress in overseeing the disposal program.

Management and Its Effectiveness in Implementing  
The Program Must Be Assessed

The driving force behind the NARUC's involvement in this tightly prescribed federal program is a concern for sound management or, what we have decided is only a half step away, sound fiscal control. The technical complexity, the great public apprehension the program generates, the primary requirement for safety, and the necessity for a widespread conviction of program credibility cannot be overestimated. It is understandable that the Congress produced a financial scheme that would make this, we are told, the largest public works project in our nation's history. The NARUC sees its responsibilities necessarily as contributing to the diverse and often conflicting goals that must be

reached. The NARUC must be able to assure its rate-payers that the program management is no less than excellent, that reasonable progress toward the ultimate goal is being achieved, that there is a very high degree of safety being developed into the disposal process and that their funds are being wisely utilized. The most closely-related areas of public utility regulatory experience on which the NARUC has drawn are those of nuclear electric power-plant construction and operation. While the relevance of the nuclear aspect of both powerplants and waste repositories is obvious, the parallel goes much deeper. This nation is now attempting to move toward the construction of another costly, first-of-a-kind facility proposed and regulated at the federal level. It is to be licensed by the NRC, an agency whose approval is not only legally mandated but publicly essential. It is also an agency that routinely places cost much lower on its list of priorities than would state regulators. The DOE, the constructor or construction administrator, while necessarily cost-conscious, needs to finish, perhaps at all costs. That it utilizes someone else's money is not insignificant. And the Congress, while putting the overall program into motion, embodies within itself diverse, conflicting political and individual objectives and desires.

The NARUC knows well this playing field; it has lived through the tortured national history of nuclear electric powerplant construction and operation so strongly affected by the same forces. State commissions are painfully aware that on a national basis, those experiences have ranged from excellent to abysmal. Some powerplant constructors have been reasonably successful at schedule and cost control; others have simply run out of money before completion. Some have proceeded to completion in six to seven years; others cannot finish after 14 or 15 years. The point is that the successes in nuclear plant construction and operation prove the job can be done, even as every project is regulated by the NRC and includes passage through the frequently berated hearings process.

Reasons for this array of results abound and have been repeatedly offered to the Congress. A major factor in the disparate results is program management. Public service commissioners believe much of the success of a construction program is lodged in the competence, awareness, intensity of involvement, activity and plain hard work of utility executives; successful projects are not unforeseen gifts from unknown sources. Managers who have achieved successful projects have not done so by relinquishing authority either to a plateau of lower level employees or to a hired firm. One suspects a correlation between a failed nuclear program of enormous proportions at one utility and its organizational structure in which 12 individual project managers reported to the same executive. Another utility CEO has testified that, at the time he was hired away from a nuclear supplier and given complete control of the utility's troubled nuclear program, he did not make an initial investigation of the project and its problems.

Fresh from the chore of weighing prudent and imprudent nuclear powerplant construction and the role of management in that process, the NARUC has turned its members' experience toward contributing to a successful, cost-effective federal high-level waste disposal program.

With cost control in mind, one analysis was made of the DOE management's record in timely

performance. There has been considerable slippage in meeting most of the mandated deadlines--even as the DOE continues to maintain it will begin to accept spent fuel in 1998 in accordance with its contracts with the utilities we regulate. Interestingly, the tasks associated with payments by utilities to the DOE, that is, establishing the one-time fee for old fuel and the method of payment and collection for the ongoing one mill fee, have been completed on time. On the other hand, those dates associated with administrative and physical progress towards repository operation have slipped. An extreme example is the mandated 1990 date for the President to submit to the Congress a recommendation for the second repository site, the task the DOE has now abandoned, or at least significantly postponed. As of March 1986, it was already projected to be 17 months late and the slippage was increasing. Another example is the Presidential recommendation for the three candidate sites for the first repository. While in April 1984, the DOE stated in the draft Mission Plan that the task was on schedule and would meet its March 1985 mandated date, the actual recommendation was made in May 1986. Thus, in the elapsed 25 months, the milestone slipped by 16 months.

The Presidential final recommendation for the first repository site, mandated for 1987, was reported two years ago to be 39 months behind schedule. By May 1986, 23 months had elapsed and the milestone had slipped an additional 16 months. According to the DOE, the recommendation will not be made now for almost 5 years. There is no guarantee against additional slippage.

Experience with nuclear powerplant construction showed that programs that failed to meet deadlines also failed to meet cost estimates and both problems were indicative of management difficulties.

Recognizing the enormous influence of management on the waste disposal program, the NARUC arrived at these findings:

- continuing problems in meeting repository program schedules and deadlines are evident; despite the resulting compression of time to complete necessary tasks, the DOE has not revised the 1998 fuel acceptance deadline. The NARUC believes that lessons available from powerplant construction and previous waste program attempts have not been learned;
- whatever the extenuating circumstances, significantly missed deadlines spell incorrect program cost estimates;
- as a management tool, the Mission Plan is and remains important; as a device in eliciting confidence that the DOE's program is conservative, predictable and reliable, it is indispensable. Events of 1986, including the decision on May 28 to indefinitely delay a major portion of the program, raise serious questions as to whether the program enunciated in the Mission Plan is being implemented;
- while neither affirming nor opposing the Monitored Retrievable Storage (MRS) proposal, the NARUC cautioned the DOE over the added stress on management this newly-proposed major project would create, and on the added need for careful planning and dispassionate assessment of cost and schedule;

- in response to the DOE's announcement that its primary program management plans and tools, specifically the Project Management System (PMS) manual, were in place, the NARUC has asked the DOE to assess whether this control program is fully deployed and measurably effective;
- the DOE field office approach places added burdens on management and raises a question as to adequate oversight and control of contractors.

The NARUC has asked the Congress to examine the appropriateness and effectiveness of the management organization and control systems the DOE employs. The success of the program hinges on a sound management approach.

#### Program Costs and Their Control Must Be Assessed

A twin concern, or perhaps the other side of the coin that is management excellence, is effective overall program cost control. Bad or failed nuclear powerplant construction projects often had frequent official cost and schedule revisions; this led to a total loss of confidence in any of these estimates on the part of regulators.

Recent events have led us to believe that the stated waste disposal program cost ultimately may be much higher than even the upward revised estimates of the DOE. Substantial cost impacts may occur because of:

- the long delays to the conclusion of the program, implied by slippage of task deadlines;
- disruption of the overall program by at least temporary abandonment of the mandated two-repository approach and by the program-altering response of the Congress;
- the possibility that the NRC, as it recently requested, may recover its waste licensing review costs from the Nuclear Waste Fund;
- an attitude that state and local resistance to a waste facility will be overcome, in part, by the infusion into local economies of large sums of monies derived from the Waste Fund;
- the growing number of lawsuits that reflect both emotionally- and politically-charged state, tribal and citizen reactions, and responses to DOE technical conclusions which have been alleged to be imperfect, erroneous, and (in some cases) manipulated.

Noting the widely dispersed DOE management structure, the fact that contractors who are managed under this system expend 85% of all ratepayer-supplied program monies, and the frequently revised program schedule dates, the NARUC has raised several issues in this area, including:

- the need for an upgraded, thorough investigation and audit of all contractors, reflecting the department-wide and program-specific advisories of the U.S. General Accounting Office (GAO). While recognizing that the DOE has instituted a commendable independent accounting of funds used, the NARUC believes

this activity is not a substitute for the thorough audits called for by the GAO.

- revision by the DOE of its method of establishing program schedule first and cost estimates only some time later;
- the need for the DOE to update its assessment of the impact on both projected spent fuel inventories and on the total anticipated payments to the Nuclear Waste Fund, in the event there is little or no future reactor construction;
- an understanding that all program plans, evaluations and analyses must be based on identification of all spent fuel handling costs from the time fuel leaves the reactor core until it has become innocuous in the repository.

While government agencies and the Congress may only be responsible for the limited waste fund management covered by the Act, they must recognize that ratepayers will pay for all spent fuel handling, storage and ultimate disposal costs whether at the reactor site, in transit or at the repository.

The DOE's management of contractors in areas other than nuclear waste disposal raises concerns over its general effectiveness as a manager, the balancing of the often conflicting goals of cost control and program objectives, and departmental credibility with the public. Special attention must be devoted to these matters.

The NARUC has identified activities which, if implemented, would assist the Congress in assuring the program's goals are achieved at reasonable cost. These include:

- independent, extensive and task-specific investigation and audit by agents of the Congress; focus would be on program tasks, with the depth of penetration dependent on cost of the individual task and on the importance of the task to the overall critical path;
- a review of the DOE management to assure early incorporation where possible of recommended improvements; this includes evaluation of the DOE's traditional management organization approach, and the waste office's implementation of it;
- a revisitation of the question of whether a different waste management organization structure is needed, a matter reviewed by the Advisory Panel on Alternative Means of Financing and Managing Radioactive Waste Facilities (the AMFM Panel). Long before the focus on the second site controversy, the NARUC and others called for this determination by the Congress; optimal control of billions of dollars is at issue. A continuing oversight, advisory or decision-making structure to assure that all parties' interests in this controversial national program are being fully and dispassionately considered is not an unreasonable approach.

## All Aspects of The Licensing Process Must Be Made Timely and Effective in Their Implementation

The NARUC sees the NRC's role as not only a legal requirement but an enormous contribution to public confidence. The extent of NRC attention to licensing issues, to careful planning of subsequent activities, and to productive interaction with the DOE are of concern. The repositories and the MRS, as proposed, will occupy NRC attention until well into the twenty-first century. The final NRC activity may well be the regulation of waste emplacement in and long-term performance of the then closed repository. Obviously, licensing will be a long, nearly continuous and extensive process, one the NRC clearly has recognized, as reflected in its staff's activities. While the NRC is not expected to be transformed into an agent for waste program cost control, the NARUC seeks to increase NRC awareness of its influence on cost through the quality and timing of its work. This becomes even more critical if, as the NRC intends, its administrative costs are recovered from the Nuclear Waste Fund.

A carefully thought out, but necessarily arms-length, relationship between the NRC and the DOE is paramount to safety and cost control. It is well known that many NRC critics, and some supporters, have conducted evaluations of the NRC powerplant licensing program and its hearings process. The NARUC has asked the NRC Commissioners to review the lessons learned from that program process and from external oversight bodies such as the Kemeny Commission. The NARUC's request to the NRC is that all changes recommended or implemented in the NRC's reactor licensing process also be assessed for implementation where appropriate in the waste licensing process.

The NRC is encouraged to recognize that unnecessarily delayed conclusions on licensing issues, perhaps a natural tendency in the face of the uncertainty that such first-of-a-kind-licensing might bring on, will raise costs. Delayed or revised decisions could, especially if implemented after construction or spent fuel deployment, lead to significant cost increases. The NARUC has encouraged the NRC and the DOE to reach resolution of differences as early as possible.

Another major question raised to the NRC concerns the nature of the licensing process itself. To its credit, the NRC has recognized the magnitude of this process and has installed an electronic system to facilitate legal discovery of all the anticipated documents. The NRC estimates that 10 million documents will be generated, a number so large as to stretch the limits of the handling technology. (The largest private university library in America contains only 11 million documents.) This staggering estimate raises for the NARUC the question of whether the traditional licensing process is even usable.

The NRC has announced its intention to utilize a traditional two-step licensing process, that is, separate licenses and companion hearings for construction and for operation. Reactors and repositories differ in many ways: operating lifetime; energy content; period of most hazardous operation; risk level; ownership and the resultant ability to pursue, redress or correct errors; and differences in the profit motive. In view of these differences, the traditional reactor licensing process may not be an obvious choice. The NARUC has thus asked the NRC to review this question and has suggested evaluation of an alternative -- essentially a continuous

licensing process. It should not be equated with what is now referred to as the one-step process promoted for licensing a new generation of commercial power reactors.

## Defense Waste Disposal: Payments to The Nuclear Waste Fund Must Be Initiated and Must Include Restitution for Past Omissions

The President's decision to commingle defense and commercial wastes has not yet been followed with a decision on the amount and timing of defense payments for the associated costs. Negotiations inside the DOE between the defense programs and waste management offices lasted well over a year. Their assignment was to agree on financial responsibility and the schedule of defense payments to the Nuclear Waste Fund. First predicted to be out in November 1985, the DOE released a Notice of Inquiry (NOI) in October 1986. The NOI did little to suggest that the DOE would take an affirmative stance with the Congress nor did it suggest what the DOE believes is a just and reasonable payment process. The DOE's position seems to leave to the Congress resolution of much of the issue.

There are several open items associated with this massive financial debate. Among them are the level of the defense financial responsibility and the proper way to calculate it. A method the NARUC believes has both merit and precedence in utility regulation is that the defense and commercial houses would share proportionately in the savings achieved by commingling of the waste in common facilities. The Edison Electric Institute earlier submitted to the Congress an analysis based on this approach which prices out defense responsibility at about \$10 billion. The DOE acknowledged this alternative, rejected it in the NOI with very limited reasoning, and offered no response to related concerns previously voiced by the NARUC and others.

The manner of Departmental deliberation on the fiscal responsibility of defense continues to be of concern. The NARUC has repeatedly notified the DOE and the Congress of its disagreement over the use of an in-house, in-camera process. The NARUC also has noted its concern that the DOE itself will receive and respond to all comments on the NOI. We believe this is not conducive to generating confidence in the openness and fairness of the process. There is no assurance of a balancing of ratepayers' and defense interests; instead a substantial gap in the protection of ratepayers emerges from the NOI. In fact, the DOE's actions raise the issue of a conflict of interests.

Further, defense waste volumes to be disposed and the calculated formula are not generally agreed upon. Widely known is the dispute over the disposition of sludge now in 115 single-walled tanks at the Hanford facility. The DOE proposes to not include their contents in the repository; the state of Washington continues to disagree vigorously. Results from use of the formula for calculating defense financial responsibility will vary considerably depending on whether the base is waste volume, thermal generation, toxicity or radioactivity. Despite the issuance of the NOI, we still await much of the DOE opinion on defense financial responsibility.

It is not unrealistic to assume that the foremost financial commitment of the defense establishment will continue to be weapons production. A complicating factor is the reported needed attention

to environmental management of DOE production and related facilities. The extensive nature of the problem is reflected in an audit of the GAO released September 24, 1986, which reiterated the need for cleanup of chemical and radioactive contamination at many DOE facilities. The expected cost is high; thus, this cleanup may compete with high-level waste disposal for attention in the DOE's defense budget for environmental matters.

Meanwhile, ratepayer payments to the Nuclear Waste Fund continue and include those for ongoing commercial generation and for a large portion of all past waste generation, a fact not mentioned in the NOI. No defense payments have been made. Thus, we believe defense payments must include interest charges, not only because the Act calls for shared responsibility, but because defense responsibility also should include program oversight and a partnership in any cost increases. The ratepayer must not end up as a backdoor subsidizer of the U.S. defense program. The NARUC is under no illusion that the Congress will readily accede to ratepayers' interests. A quote from the House Armed Services Committee's report on the federal budget expresses at least an initial point of view:

"Administrators of the waste repository program within the Department of Energy appear to contemplate the payment of a huge up-front payment from the Department of Energy defense programs followed by annual fees based on the generation of wastes in future years. Further, these payments are contemplated to take place many years prior to the development and construction of a repository -- the political hurdles contained in the NWA may never be crossed.

"The committee is concerned that during succeeding years constraints will preclude the authorization of funds to pay the fees estimated for a repository. The Committee is also concerned that, if the fees are to be paid, vital programs will have to be sacrificed for repository use that may never materialize." (1)

The NARUC and others will respond to the NOI, but it is the Congress that ultimately must attend to equitable resolution of the problem. Not only is the equity of ratepayer costs at stake, but the credibility of the entire process as well. Certainly no credit would be brought to the program by a Congressional decision as to the availability of defense monies based on a conclusion that a repository may never be built. Such a luxury does not exist.

#### Affirmative Measures Must Be Taken to Greatly Improve The Credibility of The Program

In the earliest days of the nuclear electric option, waste disposal was apparently a matter of little interest, perhaps an unwanted but necessary cleanup task. With repeated failure of the federal programs over at least the first 30 years, it has risen in importance to become a highly emotionalized public issue, frequently generating full media coverage.

Like other involved entities, the NARUC is keenly aware of this matter of public acceptance. We too have observed the recurring confrontations among federal and state governments and the public.

The exercising of the rights extended by the Congress to the states and tribal governments was never expected to be easy. Nevertheless, the Congress saw those rights to consultation and cooperation as crucial to success of the program. It may well be that a federal effort which does not generate substantial credibility and some acceptance, however reluctant or begrudging, will never succeed in establishing a disposal facility. On the other hand, the waste is here. There is little choice.

We have noted an increasing hardening of attitudes on both the federal and state sides. The DOE declared to us its fundamental perception that the agendas of states and the DOE are simply different and cannot be expected to dovetail. On the other hand, we view with increasing uneasiness the growing number of lawsuits that threaten program progress and all but guarantee cost increases. Should these factors result in a complete breakdown in progress, ratepayers could continue to pay dearly for busy work that leads nowhere. The NARUC, some time ago, requested Congressional attention to this problem. The report soon to be released by the GAO of audit of the state and federal interaction is expected to offer recommendations to improve the current schism. Certainly there was no overall improvement in state-federal relations resulting from the DOE's May 28th announcement that it was discontinuing a search for a second repository site. While easing eastern states' tensions it raised the ire of Congressional representatives from western states, some of them major actors in passage of the Act. The DOE's plans to revise the Mission Plan to reflect as federal intent the delay in going forward with second repository siting are "disingenuous," concluded Rep. Morris Udall. He added, "your continuous failure to honor your second repository obligations is a violation of that Act."

#### The Effectiveness of The Congress in Overseeing The Program

The Mission Plan is an important mandated 20- to 30-year program description which has been available for more than a year but on which the Congress has not appeared to take action. Meanwhile, the DOE apparently proceeds to substantially alter the program announced in that document. Congress's action last November in approving the DOE waste budget reflected more restrictive orders than positive direction. It displayed deep concern with program conduct and admonished the DOE first to reconsider its relations with states and Indian tribes, and then to defend itself before the Congress. However, conflicts in program direction cannot be considered resolved by a budget cut, a prohibition against on-site drilling, and a warning that too many lawsuits are being filed. The Congress may similarly utilize an appropriations decision rather than a more overt project approval to determine whether the MRS is authorized or rejected.

The ultimate responsibility for the success of this project rests with the Congress. Effective deployment of ratepayer monies depends on Congressional attention to:

- the increasingly vigorous disagreement between the states and the federal agency over process, progress and substance;

- . the need for effective public education and for satisfactory response by the DOE to state and tribal concerns;
- . the need for the DOE to adhere to a single, clearly stated game plan that is viewed as conservative, predictable and instilling public confidence -- the Mission Plan;
- . constructive criticism from all quarters, with the present problems and strengths identified so that necessary corrections are made promptly.

The Congress must now sort out these matters, among them deciding whether the program as altered by the DOE will be the national program or whether the mandates of the Act stand. There is a need for clear Congressional definition of what is intended in reducing budget appropriations. There is the troubling aspect that program direction does not now seem unequivocally determined. Congressional consensus and direction is needed to prevent an unraveling or even destruction of the program.

#### SUMMARY

The implementation of this difficult effort was not expected to fall easily into place. The failure of past high-level disposal programs, the challenges to the credibility of the agency in other programs,

and its linkage to commercial nuclear power promotion, add to the problems facing the DOE. The NARUC has pledged its best efforts to contribute to a safe solution to the problems that presently plague a project that all citizens inevitably must support. Our national safety depends on it and the costs of it fall to most of us. Increasingly, local citizens and governments must realize that spent reactor fuel is now stored among us in temporary holding pools. There must be a long-term solution.

In the face of future program cost increases, the DOE may look to recurring fee increases as the way out. In our commitment to assist in the development of a safe and sound program, we recognize there is a legitimate cost for disposal that ratepayers must bear. However, as we have advised the Congress, considering both equity and ability to pay, there is a limit to the financial resources of ratepayers for high-level nuclear waste disposal. Wasted money and resources have no place in the process.

#### REFERENCES

1. National Defense Authorization Act For Fiscal Year 1987; Report of the Committee on Armed Services, U.S. House of Representatives, on H.R. 4428, Report 99-718, p. 433, House of Representatives, 99th Congress, 2nd Session, Washington, D.C. (1986).