INTEGRATING THE COMMERCIAL AND DEFENSE HIGH LEVEL WASTE PROGRAMS- A UTILITY PERSPECTIVE

James R. Tomonto
Senior Consultant
Florida Power & Light Company

ABSTRACT

The Nuclear Waste Policy Act of 1982 provided that disposal of high-level wastes resulting from defense activities be included in the authorized repository unless the President determined that separate facilities are required. President Reagan approved commingling of defense and civilian wastes on April 30, 1985. The impacts of this decision on the repository schedule, civilian spent fuel acceptance rates, and cost sharing are reviewed and recommendations for resolving these issues are presented.

"Double, double toil and trouble;
Fire burn, and caldron bubble."
W. Shakespeare
Macbeth

INTRODUCTION

Section 8 of the Nuclear Waste Policy Act of 1982[1] required the Present to evaluate the use of the facilities to be developed under the Act for disposal of high-level radioactive waste resulting from atomic energy defense activities by January 1985. The Act further stated that:

> "Unless the President finds...that the development of a repository for the disposal of high-level waste resulting from atomic energy defense activities only is required...the Secretary shall proceed promptly with arrangement for the use of one or more of the repositories to be developed under subtitle A of title 1 for the disposal of such waste."

In July 1984, the DOE issued a draft evaluation[2] which recommended the disposal of defense waste in the civilian repository since it was more cost effective to implement one repository program rather than separate civilian and defense repositories. The report evaluated commingling against seven criteria and concluded that there would be a savings of about $1.5 billion realized with joint use of the repositories. It also concluded that there were not significant differences in the areas of health and safety, regulation, transportation costs, transportation risks, public acceptability and national security to favor one approach over the other. DOE received a variety of comments on this draft from utilities, the UNWMG, the states, and other Federal Agencies.

The DOE recommended approval of a single repository program to the President on February 6, 1985, and President Reagan approved commingling of Defense and civilian wastes on April 30, 1985. The final version of the feasibility report[3] was issued in June, 1985 with a statement that "a response document is being prepared that will include comments received during the comment period, and the DOE response." To my knowledge, this response report has never been issued.

Where does that leave the utilities and the ratepayers that they represent? Our comments to the draft feasibility report were largely ignored and we were left in the dark with respect to how this would affect the disposal of civilian spent fuel.

There are three main issues involved:

1) Impact on the repository schedule,
2) Impact on civilian spent fuel acceptance rates,
3) Cost sharing equity principles.

The satisfactory resolution of these issues are of the highest importance to U.S. nuclear utilities.

IMPACT ON THE REPOSITORY SCHEDULE

One of the major considerations in nuclear waste disposal is that of public acceptability. The DOE evaluation of commingling noted that the issue of defense waste disposal in a commercial repository could easily become the focus for activities delaying the licensing process based on purported concerns over multiple waste sources, forms, and a general perception of greater complexity. The civilian waste disposal program has enough problems without taking on these additional burdens.

There is also a possibility that States, Indian tribes and local officials may not be pleased by the addition of defense waste to a commercial repository in their locality based on concerns over increased repository waste volumes and a larger number of shipments.

Nowhere has the DOE analyzed the impact of these complications on the projected schedule for completion and operation of the commercial spent fuel repository. I believe that, contrary to the conclusion stated in DOE/DP-0020 that "the differences in acceptability between the options appear to be minor compared to gaining public acceptance for any high-level waste repository", the relative impacts could be major. Accordingly, there must be agreements between DOE and representatives of utilities and ratepayers on the potential opposition stemming from combined disposal and the DOE's contingency plans for maintaining the repository schedule mandated in the Act.

IMPACT ON SPENT FUEL RECEIPT RATES

It appears that the volume of defense waste is substantial and, depending on the relative allotments,

indeed may very well be comparable to or greater than that of commercial waste.

The draft version of DOE/DP-0020 indicated receipt rates of 620 packages of defense waste per year for the initial ten years of repository operation and then increasing to 1,000 packages per year for the next fourteen years. On this schedule, the defense wastes would constitute 90% of the volume and 78% of the equivalent weight of radioactive material received during the initial years of repository operation.

The final version of the DOE Mission Plan[4] issued in June 1985 was a little more gracious. It delayed defense waste until the first repository attained a 3,000 MT per year receipt rate. The defense waste would then constitute 30% of the volume and 13% of the equivalent weight of radioactive material.

These limiting values indicate the magnitude of problems. Spent fuel acceptance rates are of vital importance to utilities. The DOE should make it clear that defense shipments will be managed on a not-to-interfere basis. The DOE acceptance rates should:

1) Provide for civilian spent fuel acceptance rates beginning in January 1998 that are not less than the annual rate at which spent fuel is then being discharged from civilian power reactors.

2) Work off the backlog so that by January 2013, DOE shall have accepted all civilian spent fuel which has been discharged for at least five years.

3) Acceptance rates in excess of these levels should be used for spent fuel from decommissioned reactors and defense waste.

An option that should be considered is the dedicated use of the first repository for civilian spent fuel and the dedicated use of the second repository for defense and civilian wastes (if necessary).

EQUITY COST SHARING PRINCIPLES

The Nuclear Waste Policy Act, Section 302(b), establishes the requirement that defense programs pay "for deposit in the Nuclear Waste Fund, amounts equivalent to the fees" paid under the civilian contracts. DOE's regulations establishing terms and conditions under which waste disposal services are to be provided[5], mandate that "fees to be paid by Federal agencies will be equivalent to the fees that would be paid under the contract". "Equivalence" would include the following basic characteristics of the present utility fee structure:

1) The fees should be based on actual past and evaluated future program costs and the proportional sharing of total program costs (as distinguished from just the cost increments due to defense wastes) among all prospective repository users.

2) For wastes generated prior to April 1983, an appropriate onetime payment should have been due in June 1985. Onetime payments made thereafter should accrue interest from April 1983.

3) For wastes generated after April 1983, quarterly fees should be due as the fission products are generated in reactors.

4) To the extent that the total of anticipated fees exceeds evaluated costs by some ratio, both civilian and defense fees should include the same margin ratio.

To date, the DOE has not involved the affected utilities in its consideration of cost allocation even though this is a multi-billion dollar issue. DOE treats these concerns with a noncommittal statement in its Mission Plan[4]:

> "Negotiations are underway with other DOE offices to both establish an equitable cost-sharing method and to develop a waste acceptance schedule that integrates the two major waste streams."

The typical DOE response to repeated utility requests to participate in the process is shown by their letter[6] of August 24, 1985 which stated:

"The Department intends to issue a Federal Register notice, by the fall of 1985, soliciting comments on the proposed methodology. After receipt and consideration of public comments, the Departments recommendation as to the fees to be paid into the Nuclear Waste Fund for the disposal wastes will be incorporated into the normal Congressional authorization and appropriations process."

Utilities share the concerns expressed by the National Association of Regulatory Utility Commissioners[7] that these internal negotiations between the DOE Division of Defense Programs and the DOE Office of Civilian Radioactive Waste Management may be no more than an exercise in creative accounting to justify that the lowest possible cost is allocated to defense wastes. We are concerned that an equitable and realistic basis for cost-sharing will not evolve, especially since DOE's overriding interest may be to minimize the direct impact on its appropriated budget for defense activities. Indeed the shadow of Gramm-Rudman will be most apparent in these determinations.

Actual disposal costs depend moderately on thermal output at emplacement, on the radioactivity, on the number of disposal packages, and the volume of wastes. However, no one parameter sufficiently characterizes the difference in the waste forms. In addition, significant portions of repository costs, such as the Development and Evaluation costs are essentially independent of waste characteristics.

DOE has conveniently attempted to establish the correspondence that one defense waste package at disposal is equivalent in radioactivity to 0.5 MT of reprocessed spent fuel. While this factor may be sufficient to conform to the total waste limit for the first repository established by the Act (70,000 MT of spent fuel or reprocessed high-level waste), it has nothing to do with fees. In point of fact, fees for reprocessed spent fuel have not been established.

When wastes differ markedly as to waste form and cooling period, no single physical measure can be expected to represent cost the most reasonable measure for cost sharing appears to be the costs themselves. Furthermore, the basic methodology for cost based sharing is already in place by virtue of the established methodologies and data for the periodic evaluation of the civilian waste fee adequacy. Specifically, each sector (defense and civilian) should pay a fraction of the combined repository program costs which is the same as that sector's fraction of the sum of the

evaluated costs for separated repository programs.

Once the total combined-system costs and the portions to be borne by each sector have been determined, the amount and timing of fees can also be determined. This could be done by allocating the costs within each sector on a per unit basis which is related to when the fission products are generated.

Our preliminary analysis concludes that defense waste should bear about one-third of the cost of the geologic repository program.

To date, utilities have deposited over $2.2 billion in the Nuclear Waste Fund and anticipate depositing between $500 and $600 million per year over the next several years. We think it is time for the Defense Program to begin paying its share. The nuclear industry is not looking for subsidies from the defense side, nor do we desire to subsidize them.

RECOMMENDATIONS TO RESOLVE ISSUES

To date, utilities and the ratepayers that they represent, have not been afforded any meaningful opportunity to participate in resolving these issues. It is recommended that the methodology outlined in the Nuclear Waste Policy Act, namely consultation and cooperation agreements between DOE, utilities, and Public Service Commission representatives, be adopted as a means of finding solutions to these issues. Then the cost-sharing basis should be subjected to public and Congressional oversight and formalized in the Code of Federal Regulations.

REFERENCES

1. "Nuclear Waste Policy Act of 1982", Public Law 97-425, January 7, 1983.

2. "An Evaluation of Commercial Repository Capacity for the Disposal of Defense High-Level Waste", DOE/DP-0020 (Draft), July 1984.

3. "An Evaluation of Commercial Repository Capacity for the Disposal of Defense High-Level Waste", DOE/DP-0020/1, July 1985.

4. "Mission Plan for the Civilian Radioactive Waste Management Program", DOE/RW-0005, June 1985.

5. "Contract for Disposal of Spent Nuclear Fuel and/or High Level Waste", 10 CFR 961.

6. Letter from Robert H. Bauer, Associate Director OCRWM, to James B. Hall, Director Utility Nuclear Waste Management Group, August 28, 1985.

7. Testimony of Edwyna G. Anderson, National Association of Regulatory Utility Commissioners, Before the Subcommittee of Energy and the Environment of the House Committee on Interior and Insular Affairs, September 13, 1985.