SRS Citizen's Advisory Board

Recommendation No. 20

May 14, 1996

Storage, Disposition of Weapons-Usable Fissile Materials PEIS

1. As all disposition options require decades for implementation, it is essential to first focus on the safe and secure interim storage of the surplus plutonium.
2. The programmatic environmental impact statement (PEIS) indicates that there are no significant differences in the possible health effects between interim storage options at the various feasible locations. If this is the case, then the choices of locations should be made primarily on the basis of security and cost effectiveness.
3. Risks associated with the transportation of plutonium are primarily derived from the possibility of highway and/or rail collisions that could injure people, not health effects related to the material. Furthermore, established methods for movement of nuclear materials minimize the likelihood of accidents. This being the case, shipment of plutonium between sites should be acceptable in any alternative that provides the necessary safety, security and cost effectiveness.
4. We do not believe that deep boreholes should be pursued as a disposition option because:

   (a) it would face extreme political obstacles

   (b) it would be difficult to be certain that a contaminating event orclandestine theft could not develop over centuries ahead, and

   (c) it might preclude the possible future recovery of the plutonium as a fuel.

5. The choice of a Mixed Oxide (MOX) option for the disposition of weapons plutonium should include the consideration of using commercial reactors if it is a cost effective measure.
6. The PEIS accepts without question the Spent Fuel Standard as the desired end result for both the vitrification and reactor options. However, it is questionable whether this is an entirely appropriate objective in making a long term disposition decision. As the overriding outcome of the program must be the minimization of risk that plutonium is diverted for weapons use, options that actually dispose of the material should be sought. The necessity of the Spent Fuel Standard can be questioned because of the following considerations:
   - With both western Europe and former Soviet states being committed to the full recovery of plutonium's energy value, the benefit of the United States, a declared nuclear weapons power, setting an example against this is, at best, uncertain.
   - In the United States, security for and transparency of the country's interim management of its surplus plutonium from all sources should be achievable through a guarded repository combined with International Atomic Energy Agency (IAEA) safeguards.
   - Because the Spent Fuel Standard depends on relatively short lived fission products being mixed with the very long lived plutonium, there may be significant

environmental, security and safety questions with a long term geologic repository.

Therefore, any plutonium disposition plan should include exploring various options that go beyond the spent fuel standard and that actually reduce plutonium stocks. These would include reactor concepts that burn relatively high fractions of plutonium as well as ones that do not generate plutonium. The options presented in the PEIS have the advantage of established technology and, perhaps, economic advantages in the near term.

However, these other options, which are not tied to the Spent Fuel Standard and which consume plutonium, should be evaluated because of:

- The very possible long term benefits of superior waste management.
- The environmental and supply uncertainties of fossil fuels.
- The advantage of maintaining/enhancing the country's technology in an area of potentially great future importance.

7. If the evaluation process concludes that SRS is a preferred site for a plutonium storage and disposition program that is secure, safe, and cost effective, the SRS CAB supports and welcomes such a decision.

Agency Responses

Department of Energy - HQ