

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 15, 1995

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director  
**COPIES:** Board Members  
**FROM:** Steven Stokes  
**SUBJECT:** National Transuranic (TRU) Waste Program

- 1. Purpose:** This report documents the Defense Nuclear Facilities Safety Board's (Board's) staff visit on July 18-19, 1995, to the Carlsbad Area Office (CAO) and the Waste Isolation Pilot Plant (WIPP) site to review the National TRU Program (NTP). Reviewers were Steven Stokes and Dermot Winters.
- 2. Summary:** Overall, the NTP has yet to successfully integrate the Department of Energy's (DOE) TRU disposal issues. The DOE's existing integration efforts at the national level have been hampered by a variety of issues, the most significant being the ability of individual sites to delay implementation of TRU program components due to competing priorities at the site level. The most serious consequence of delaying implementation of TRU program goals are the sites' inability to ship wastes to WIPP for disposal.
- 3. Background:** The NTP was established in December 1993 at the CAO to integrate and coordinate the diverse organizational elements that contribute to the complex-wide management of TRU waste. The NTP includes TRU waste activities at the following sites: Hanford, Idaho National Engineering Laboratory, Lawrence Livermore National Lab, Nevada Test Site, Rocky Flats, Los Alamos National Lab, WIPP, Argonne National Lab-East, Oak Ridge National Lab, Mound, and the Savannah River Site. The NTP's mission is to integrate the national TRU waste system to assure that DOE effectively and systematically manages its TRU wastes from generation to disposal.

Since the WIPP site has yet to begin nuclear operations and parts of the authorization basis are still under preparation, a brief review of the safety management program was undertaken to understand WIPP's approach to integrated safety management and its relationship to WIPP's role in the National TRU waste program.

- 4. Discussion/Observations:** The objectives of the NTP are clearly articulated in DOE/NTP-94-1040, *National Transuranic Program Plan, October 1994*. This document discusses the components of the NTP, establishes programmatic requirements, management approaches, and describes the program charter. Key components of the NTP are the completion of a TRU waste systems model to provide DOE management with the information necessary to make programmatic decisions related to safe and effective management of TRU wastes, the periodic monitoring of TRU programs at DOE sites, and a definition of the management approach used to effect DOE's national strategy. These components are described

below.

- a. **TRU Waste System Model.** A systems prioritization method using computer modeling techniques is currently under preparation. This computer model attempts to describe the current state of DOE's TRU waste management system then, via scenario development, present various system configurations which would be used to assist decision makers optimize TRU disposition. As described to the Board's staff, the model will baseline the existing program, i.e., describe current characterization throughput, shipping capacity, disposal rates, and costs associated with these activities, etc. Then, after changing system input parameters, i.e., characterization and shipping rates at a specific site, scenarios would be constructed that provide decision makers with alternative TRU disposal systems. Optimally, this analysis would assist decision makers in setting budget priorities and reducing risk. It was the Board's staff observation that, at present, the notion of risk is poorly, if at all, incorporated into the model. In discussions with DOE staff and contractor personnel they clearly reflected similar concerns and appeared to fully understand the model's inability to incorporate risk. DOE and contractor staff also indicated that efforts are underway to incorporate this parameter however it is not clear how this will be accomplished.
  
- b. **Management Approach.** It is current NTP policy that each site develop a quality assurance project plan (QAPjP) that demonstrates how the individual sites meet the NTP's quality assurance program plan (QAPP) for waste characterization. The existing program goal is to have all major sites QAPjP's in place by September 1995. However, it is the Board's staff observation that it is unlikely this goal will be met given existing site-specific priorities. For example, based on conversations with Department of Energy Richland (DOE-RL) waste management personnel, DOE-RL currently does not intend to implement a TRU waste characterization program based on an approved QAPjP due to other existing site priorities. Therefore, DOE-RL, until they successfully implement their characterization program and QAPjP, will be prevented from shipping TRU wastes to WIPP for disposal.

Since no shipments to WIPP from DOE-RL are currently planned, obviously no immediate safety consequences are created from DOE-RL's delay in program implementation. However, given the compounding effect that delaying implementation has, additional delays contribute to the significance of safety issues associated with the management of TRU wastes. For example, DOE-RL has stopped retrieval of drums currently stored in earthen mounds as part of their overall strategy to delay implementation of the TRU program. The delay in drum recovery increases the likelihood of soil contamination due to container degradation resulting from drum corrosion. This, in turn, increases the risk of contamination to workers involved in recovery of these drums. (note: Based on retrieval of a small number of drums the current risk of worker exposure appears to be minimal; however, the rate with which this risk will increase is not well

**understood, nor does it appear that efforts are underway to more fully understand it.)**

**Two committees with membership from all effected sites have been formed to elicit site involvement and assist in development of strategies for implementing program goals. Based on discussions with DOE headquarters and NTP representatives, these committees are in their developmental stages and have not yet played a major role in effecting TRU program goals.**

- c. WIPP Safety Management. The WIPP management of safety programs currently appears to be poorly integrated, does not have a formal standards basis since little progress has been made in completing a standards/requirements identification document (S/RID), and the upper level implementation of existing safety programs lacks a consistent pattern of application. This is an area in which it appears considerable improvement can and will be made prior to receipt of waste shipments at WIPP. Therefore, no conditions were noted that lead the Board's staff to believe at this time that the WIPP will be operated in an unsafe manner, or otherwise have a negative impact on National TRU program plans to ship waste to WIPP.**