



**AGENCY FOR NUCLEAR PROJECTS
NUCLEAR WASTE PROJECT OFFICE**

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November 13, 1990

Mr. John Linehan, Director
Repository Licensing and Quality Assurance
Division of High-Level Waste Management
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Linehan:

The purpose of this letter is to provide comments on the U. S. Nuclear Regulatory Commission (NRC) staff positions on: Containment Period for High-Level Waste Packages (SP-60-001); Performance Objectives Relating to Isolation of the Waste (SP-60-002); and Design Criterion for Thermal Loads (SP-60-003) issued on August 16, 1990. The purpose of staff positions, as we understand it is to provide for guidance to the NRC staff responsible for review of a license application for a geologic repository for high-level radioactive waste. Further, it is our understanding that staff positions are not binding upon the other parties to a licensing proceeding.

The August 16 letter states:

"SP-60-001 clarifies the 300-1,000 year period for substantially complete containment (SCC) of high-level wastes within the waste packages under 10 CFR 60.113(a)(1)(ii)(A). The staff's position is that the requirement for SCC for a period of 300-1,000 years following repository closure is a minimum requirement. Several interpretations from groups other than the NRC staff had identified the 300-to-1,000 year period as a cap for the lifetime of the waste package and, therefore, stated that credit for the package could not be taken beyond that time."

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The NRC has correctly interpreted Nevada's view regarding the intent of the Commission in adopting the language "such period shall be not less than 300 years nor more than 1,000 years after permanent closure of the geologic repository." The intent, as we read it is that in the performance assessment DOE should assume for conservatism cask failure after 1,000 years. Thus, the 1,000 year substantially complete containment period is considered a maximum for the proposes of repository performance assessment. However, the NRS staff as stated above has interpreted the numerical range to be just the opposite, a minimum.

In Section 1, there is a rather detailed exposition of what is described as the regulatory history, or the "evolution" of the containment rule. The Section explains how the rule evolved from a single durational figure (1,000 years) for substantially complete containment to a rule specifying a range from 300 to 1,000 years for containment. Factors such as EPA radioactivity standards, design of the facility, age of the waste, geochemical characteristics of the host rock and groundwater, and repository performance uncertainty, are considered in defining the specific containment period. However, the staff in the SP now interprets the evolution of the rule to mean that the range is only bounded at the lower end and encourages exceeding the upper end of the range. Thus, it appears that the staff has interpreted the range to not be a range at all -- but simply a broadly stated minimum with no limit on the upper end. We do not believe this to have been the original intent of the Commission in promulgating the containment rule, nor do we believe there is a rational basis for such an interpretation.

If one accepts the staff's interpretation of the containment rule (i.e. 300-1,000 years is a minimum requirement) and that credit can be taken in postclosure performance for a waste package beyond the minimum time, then one can argue that such an interpretation violates the multiple barrier concept as well as an underlying premise of the Nuclear Waste Policy Act of 1982 which provides that the natural system be the primary barrier to radionuclide migration to the accessible environment. The staff's position taken to the extreme could permit an applicant's design of a 10,000 plus-year waste package which would satisfy the Part 60.113(a)(1)(ii)(A) requirement and negate a need to characterize the natural system and meet the requirements of Part 60.113(a)(1)(ii)(B) and Part 60.112. We do not think this was the intent of the Nuclear Waste Policy Act or the Commission's intent when it drafted 10 CFR Part 60, nor do we believe that such guidance is prudent if its intent is to reduce uncertainty. In fact it creates a new and broader dimension of uncertainty regarding the waste package in performance assessment.

SP-60-002 and SP-60-003 provide only clarification and appear to be self-evident. No comments are provided at this time.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert R. Loux", with a large, sweeping flourish at the end.

Robert R. Loux
Executive Director

CC: John Bartlett, DOE
Carl Gertz, DOE-YMPO
Don Deere, NWTRB
Dade Moeller, ACNW-NRC