



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 12, 1997

Dr. B. John Garrick, Chairman
Advisory Committee on Nuclear Waste
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: RECOMMENDATIONS REGARDING THE IMPLEMENTATION OF THE
DEFENSE-IN-DEPTH CONCEPT IN THE REVISED 10 CFR PART 60

Dear Dr. Garrick:

I am responding to your October 31, 1997, letter to the Chairman. In that letter, you provided the views of the Advisory Committee on Nuclear Waste (hereafter, the Committee) on the need for a revised approach for implementing the Commission's principle of defense-in-depth in the context of site-specific regulations for Yucca Mountain (YM). In particular, the Committee endorsed the Commission's concept of defense-in-depth, recommended against the use of "rule-based subsystem requirements as exist in 10 CFR Part 60," and encouraged the development of performance-based regulations for YM.

As the Committee noted, the Commission has directed the staff to pursue the development of site-specific regulations, to implement the forthcoming Environmental Protection Agency (EPA) site-specific standards for YM. Specifically, in the Strategic Plan, issued in September, the Commission identified, as a performance goal for the Agency, the establishment of a regulatory framework, for high-level waste disposal, that is consistent with current national policy, as required by law, after the legislatively required standards are issued. These standards are to be implemented, according to the Strategic Plan, through site-specific, *performance-based* regulation.

When he met with the Committee on November 20, 1997, John Greeves, Director of the Division of Waste Management, informed the Committee that the staff is just now completing a proposed strategy for the development of performance-based regulations for YM. This draft strategy will soon be forwarded to the Commission, for its review and consideration. The staff's proposal will contain the staff's recommendations for implementing forthcoming EPA standards and will also address whether, in the staff's view, it is necessary for YM-specific regulations to include quantitative requirements for the performance of individual repository subsystems.

In general, the staff agrees with the Committee's recommendations, as was noted by Mr. Greeves, in his remarks to the Committee. The staff continues to believe that both natural and engineered barriers must make a definite contribution to the achievement of the overall safety objective for a repository at YM. To determine that an effective implementation of a multiple barrier approach (defense-in-depth) is achieved with reasonable assurance, the performance of each individual barrier and its contribution to overall performance, including consideration of uncertainty, needs to be evaluated. Once the Commission has reviewed, and provided

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guidance on, the staff's proposed strategy, the staff will draft a rulemaking plan for implementing the regulatory approach approved by the Commission. When complete, early next year, the staff looks forward to briefing the Committee on its contents, and, in particular, on staff's plans for implementing the defense-in-depth concept in site-specific regulations for YM.

Sincerely,


L. Joseph Callan
Executive Director
for Operations

cc: Chairman Jackson
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
SECY
CIO
CFO