



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

July 11, 1996

MEMORANDUM TO: Paul W. Pomeroy, Chairman
Advisory Committee on Nuclear Waste

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: RESPONSE TO ADVISORY COMMITTEE ON NUCLEAR WASTE LETTER DATED
JUNE 7, 1996, ON TIME SPAN FOR COMPLIANCE OF THE PROPOSED
HIGH-LEVEL WASTE REPOSITORY AT YUCCA MOUNTAIN, NEVADA

I am responding to the June 7, 1996, letter from the Advisory Committee on Nuclear Waste (the Committee) to the Chairman. In that letter, the Committee provided observations and suggestions on general principles for establishing the time span for compliance of nuclear waste facilities. It also offered its recommendations for specifying the regulatory time span of compliance for the proposed geologic high-level waste (HLW) repository at Yucca Mountain, Nevada.

The Committee's comments on the general principles for establishing the time span for regulatory compliance are timely because, as you are aware, the staff is currently considering this topic in the areas of low-level waste (LLW) and HLW. As noted, the Committee was briefed on the broad outlines of the staff's approaches to defining regulatory time frames for LLW and HLW during its March working group on "Regulatory Time of Compliance for Radioactive Waste Disposal."

The Committee's letter and the observations, suggestions, and recommendations in it are directed toward the HLW geologic repository program. Therefore, this response will discuss only those staff activities in the HLW programmatic area. In this regard, it is apparent, from a comparison of the staff's presentation to the Committee and other proposed staff positions, and the Committee's recommendations, that there is general agreement on the principles and considerations for setting a time frame of regulatory compliance for a geologic repository. The staff supports a tiered approach (e.g., compliance with the regulatory limit up to 10,000 years and comparison with the regulatory limit as a goal beyond 10,000 years) which recognizes the difficulty in estimating repository performance over long time periods, but provides sufficient insight into long-term performance to assist licensing decisions (staff presentation to ACNW working group, March 27, 1996). This staff approach is similar in many ways to the Committee's two-part approach to definition of time frames for regulatory compliance in the HLW area. Finally, the staff also agrees that the exposure scenario (i.e., exposure pathway, reference biosphere, and critical group(s)) should be defined, to the extent possible, by rule.

As to the Committee's specific recommendations for defining a regulatory time frame for a HLW geologic repository, the staff will factor them into its ongoing activities. These ongoing activities take two forms -- interactions

Contact: Keith I. McConnell, NMSS/DWM
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with the U.S. Environmental Protection Agency (EPA) on EPA's site-specific standard and activities related to development of implementing regulations applicable to a repository at Yucca Mountain. The staff has previously informed the Committee of its continuing regular interactions with EPA on EPA's site-specific HLW standard. It is now anticipated that EPA will issue its proposed Yucca Mountain standard in August of this year. It is the staff's intention to provide comments to EPA when the standard is published for public comment.

As noted in my response to the Committee's February 9, 1996, letter (J. Taylor to P. Pomeroy, dated March 8, 1996), the staff also is currently beginning to develop a strategy for the U.S. Nuclear Regulatory Commission's conforming rulemaking to implement EPA's Yucca Mountain-specific HLW standard. As part of that effort, the staff, in conjunction with the Center for Nuclear Waste Regulatory Analyses, recently has completed its preliminary technical analyses relevant to development of standards and regulations applicable to Yucca Mountain. These technical analyses and other ongoing studies will comprehensively address the Committee's suggestion that the staff review the scientific and technical components needed to define time frames for HLW disposal. Presently, the staff is using the results of these analyses and its existing knowledge of EPA's proposed standard to develop a strategy that will incorporate defensible approaches to address issues relating to time frame of compliance, definition of the exposure scenarios including critical group(s), reference biosphere, and the approach to incorporating the multiple barrier/defense-in-depth philosophy. The staff, therefore, welcomes both the Committee's existing recommendations on time frame for compliance for a HLW geologic repository and any future recommendations the Committee might draw from its recent session (June 25, 1996) on "Specification of Critical Group and Reference Biosphere." The staff expects to complete development of its strategy for implementing EPA's Yucca Mountain Standard in August 1996 and will keep the Committee apprised of the results of this effort.

Original signed by
James M. Taylor
Executive Director
for Operations

cc: Chairman Jackson
Commissioner Rogers
Commissioner Dicus
SECY

TICKET NO: EDO GT96434

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The Committee's comments on the general principles for establishing the time span for regulatory compliance are timely because, as you are aware, the staff is currently considering this topic in the areas of Low-Level Waste (LLW) and HLW. As noted, the Committee was briefed on the broad outlines of the staff's approaches to defining regulatory time frames for LLW and HLW during its May working group on "Regulatory Time of Compliance for Radioactive Waste Disposal."

~~The focus of the~~ Committee's letter and the observations, suggestions, and recommendations in it are directed towards the HLW geologic repository program. Therefore, this response will discuss only those staff activities in the HLW programmatic area. In this regard, it is apparent from a comparison of the staff's presentation to the Committee, and the Committee's recommendations, that there is basic agreement on the principals and considerations for setting a time frame of regulatory compliance for a geologic repository. Specifically, the staff agrees with the Committee's stated desire that the assessment of repository performance be calculated to the time of peak risk to the critical group. There also is agreement on the Committee's two-part approach to definition of time frames for regulatory compliance in the HLW area. Finally, the staff also agrees that the exposure scenario (i.e., exposure pathway, reference biosphere, and critical group(s)) should be defined, to the extent possible, by rule. (es) (X)

As to the Committee's specific recommendations for defining a regulatory time frame for a HLW geologic repository, the staff will factor them into its ongoing activities. These ongoing activities take two forms -- interactions

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 415-7289

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P. Pomeroy, the U.S. Environmental Protection Agency

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As noted in my response to the Committee's February 9, 1996, letter (Taylor to Pomeroy, dated March 8, 1996), the staff also is currently in the ~~formative stages of developing~~ ^{the U.S. Nuclear Regulatory Commission's} a strategy for NRC's conforming rulemaking to implement EPA's Yucca Mountain-specific HLW standard. As part of that effort, the staff, in conjunction with the Center for Nuclear Waste Regulatory Analyses, recently has completed its preliminary technical analyses relevant to development of standards and regulations applicable to Yucca Mountain. These technical analyses and other ~~studies ongoing~~ ^{its} will address comprehensively the Committee's suggestion that the staff review the scientific and technical components needed to define time frames for HLW disposal. ~~At the present time,~~ ^{At the present time,} the staff is using the results of these analyses and ~~our~~ ^{its} existing knowledge of EPA's proposed standard to develop a strategy that will incorporate defensible approaches to address issues relating to time frame of compliance, definition of the exposure scenario including critical group(s), reference biosphere, and the approach to incorporating the multiple barrier/defense-in-depth philosophy. The staff, therefore, welcomes both the Committee's existing recommendations on time frame for compliance for a HLW geologic repository and any future recommendations the Committee might draw from its recent working group (June 25, 1996) on "Specification of Critical Group and Reference Biosphere." The staff expects to complete development of its strategy for implementing EPA's Yucca Mountain Standard in August 1996 and will keep the Committee apprised of the results of these efforts.

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Executive Director
for Operations

cc: Chairman Jackson
Commissioner Rogers
Commissioner Dicus
SECY

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P. Pomeroy The U.S. Environmental Protection Agency

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As noted in my response to the Committee's February 9, 1996, letter (Taylor to Pomeroy, dated March 8, 1996), the staff also is currently in the beginning ~~formative stages of developing a strategy for NRC's conforming rulemaking to implement EPA's Yucca Mountain-specific HLW standard.~~ As part of that effort, the staff, in conjunction with the Center for Nuclear Waste Regulatory Analyses, recently has completed its preliminary technical analyses relevant to development of standards and regulations applicable to Yucca Mountain. These technical analyses and other studies ongoing will address comprehensively the Committee's suggestion that the staff review the scientific and technical components needed to define time frames for HLW disposal. At the present time, the staff is using the results of these analyses and existing knowledge of EPA's proposed standard to develop a strategy that will incorporate defensible approaches to address issues relating to time frame of compliance, definition of the exposure scenario, including critical group(s), reference biosphere, and the approach to incorporating the multiple barrier/defense-in-depth philosophy. The staff, therefore, welcomes both the Committee's existing recommendations on time frame for compliance for a HLW geologic repository and any future recommendations the Committee might draw from its recent working group (June 25, 1996) on "Specification of Critical Group and Reference Biosphere." The staff expects to complete development of its strategy for implementing EPA's Yucca Mountain Standard in August 1996 and will keep the Committee apprised of the results of these efforts.

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FINAL REPLY:

ACNW
Paul W. Pomeroy

TO:
Chairman Jackson

FOR SIGNATURE OF : ** GRN **
Executive Director

CRC NO:

DESC: TIME SPAN FOR COMPLIANCE OF THE PROPOSED HIGH-
LEVEL WASTE REPOSITORY AT YUCCA MOUNTAIN, NEVADA

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mid 6/17/96

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