Department of Energy
Washington, DC 20585

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Mr. Joseph J. Holonich, Director
Repository Licensing & Quality Assurance
Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: Ltr, Roberts to Holonich, dtd 11/09/92

Dear Mr. Holonich:

The U.S. Department of Energy (DOE) would like to expand on the reference letter, which explains DOE's position on the Scope and Purpose of Topical Reports. This letter provides the basis for DOE's view of the regulatory framework for the review of topical reports developed to resolve issues relating to the existence of potentially adverse conditions in general. DOE maintains that, only after an assessment that a potentially adverse condition exists will an additional assessment be required of the effect of the condition on the ability of the repository to meet its performance objectives.

Current Regulatory Requirements

The applicable U.S. Nuclear Regulatory Commission (NRC) regulatory requirements for the disposal of high-level radioactive wastes in geologic repositories are found in 10 C.F.R. Part 60. Subpart E to Part 60 addresses the technical criteria which will support a finding that the issuance of a license to receive and possess high-level waste will not constitute an unreasonable risk to the health and safety of the public, given the uncertainty involved in such a determination. Specifically, Subpart E sets out performance objectives and site and design criteria which, if satisfied, will support a finding of no unreasonable risk.

The siting criteria referenced above are addressed in §60.122, which provides that favorable conditions associated with the geologic setting, together with the engineered barriers system, must provide reasonable assurance that the performance objectives relating to waste isolation will be met. In addition, this section also addresses the concern that if specifically identified potentially adverse conditions are present, then the ability of the repository to meet its performance objectives for waste isolation may be compromised. The potentially adverse

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conditions of concern are identified in §60.122(c).

The assessment of potentially adverse conditions is a two part process. First, there must be a determination of whether the specific potentially adverse condition actually exists. If the condition is not present, then the assessment is concluded. If, however, the condition is present, then the required additional assessment of the effect of the condition on the ability of the repository to meet its performance objectives must be conducted. This has been the consistent position of the NRC for over a decade.

Historical Overview

Initially, technical criteria were to be developed by the NRC to help identify whether any obvious deficiencies existed in the group of potential sites to be identified and screened for site characterization. That is, the technical criteria were to guide DOE in its comparison of candidate sites, given the requirement that multiple sites be characterized. The original concept was to assure that if a potentially adverse condition existed, that it was sufficiently distant that it did not present a problem, or that the problem could be made tractable or easily managed. This assessment was to be conducted on a generic, rather than on a case-by-case, basis. In addition, the initial criteria were developed for disposal in saturated media (i.e., salt). These initial criteria required DOE to demonstrate whether any potentially adverse conditions, including evidence of extreme bedrock incision since the start of the Quaternary Period, "are present".

Later, when the NRC published its proposed rule specifying its technical criteria for a repository to be located in a saturated zone, the Commission again emphasized that, with respect to potentially adverse conditions, the concern was with actual, rather than hypothetical conditions. At this time, rather than being combined in a single section, favorable and potentially adverse conditions were addressed in separate sections. And for each, the concern was for those conditions that were actually present. In its 1983 final rule for technical criteria generally applicable to saturated sites, the Commission again emphasized that in its site screening technical criteria, a condition is defined as potentially adverse only when (1) it actually is present, and (2) if it is present, an assessment reveals that there is a potential adverse impact. That is, if the condition is both present and may affect waste isolation, then it may be regarded as potentially adverse.

Finally, in 1985, the Commission issued its final rule adapting its earlier technical criteria to be generally applicable to both the saturated and unsaturated sites. In this final rule, the earlier treatment of favorable and potentially adverse conditions was unaffected. That is, under the final 1985 rule, as before,

an assessment of a given condition was needed only if that condition actually existed. If the condition was not present, then no assessment of that condition was required.

In summary, DOE believes that the regulatory framework discussed above for the review of topical reports developed to resolve issues relating to the existence of potentially adverse conditions is consistent with the position that NRC has maintained. If you have any questions, please contact Chris Einberg of my office at 202-586-8869.

Sincerely,

Dwight E. Shelor

Dwight E. Shelor
Associate Director for
Systems and Compliance
Office of Civilian Radioactive
Waste Management

cc:
C. Gertz, YMPO
T. J. Hickey, Nevada Legislative Committee
R. Loux, State of Nevada
D. Bechtel, Las Vegas, NV
Eureka County, NV
Lander County, Battle Mountain, NV
P. Niedzielski-Eichner, Nye County, NV
W. Offutt, Nye County, NV
C. Schank, Churchill County, NV
F. Mariani, White Pine County, NV
V. Poe, Mineral County, NV
J. Pitts, Lincoln County, NV
J. Hayes, Esmeralda County, NV
B. Mettam, Inyo County, CA
C. Abrams, NRC