0415

July 31, 1995

Mr. Ronald A. Milner, Director
for Program Management and Integration
Office of Civilian Radioactive Waste Management
U.S. Department of Energy, RW 30
1000 Independence Avenue, S.W.
Washington, D.C. 20585

SUBJECT: ADDITIONAL INFORMATION IN REFERENCE TO THE IMPLEMENTATION OF DRAFT REGULATORY GUIDE DG-3003, "FORMAT AND CONTENT FOR THE LICENSE APPLICATION FOR THE HIGH-LEVEL WASTE REPOSITORY"

Dear Mr. Milner:

In a letter dated May 26, 1995, the U.S. Department of Energy raised three specific questions regarding the implementation of Draft Regulatory Guide DG-3003, "Format and Content for the License Application for the High-Level Waste Repository." As a result of this request, the U.S. Nuclear Regulatory Commission staff is providing the enclosed response to these questions. On June 27, 1995, two of these questions were also discussed in a telecon between Abou-Bakr Ibrahim of the NRC and Robert G. Hawe of your staff.

If you have additional questions, please contact Sandra L. Wastler, of my staff at (301) 415-6724.

Sincerely,
Original Signed By
Joseph J. Holonich, Chief
High-Level Waste and Uranium
Recovery Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

cc: See next page

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Mr. Stephan J. Brocoum
Assistant Manager for
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Yucca Mountain Site Characterization
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Office of Civilian Radioactive
  Waste Management
P. O. Box 98608
Las Vegas, Nevada 89193-8608

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CC List for Letter dated: July 31, 1995

cc: R. Loux, State of Nevada
J. Meder, Nevada Legislative Counsel Bureau
W. Barnes, YMPO
R. Milner, DOE/Wash, DC
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R. Arnold, Pahrump, NV
N. Stellavato, Nye County, NV

RESPONSE TO DOE REQUEST FOR CLARIFICATION ON IMPLEMENTING REGULATORY GUIDE DG-3003

Question 1: Page 3-4, Section 3.1.1.1.4 Structural Geology and Tectonic Information, Last Paragraph of the Section (Regional Geology)

"Provide a detailed description of the orientation, distribution, spacing, and density of fractures, discontinuities, and heterogeneities, and discuss the origins and history, including any information on aperture in-filling."

We believe site scale information with this level of detail will be adequate. Acquiring detailed information on a regional basis will be very costly and of questionable value with regard to the safety of the site.

Response: The main purpose of requesting regional technical information is to allow a comparison of site-specific to regional data in order to gain a better understanding of the resultant effects of tectonic processes (e.g. natural analogs) and to gain insight on whether the site area is technically consistent with the region. Therefore, regional information is needed as part of the description of the tectonic processes in the license application. However, if detailed site related information in combination with less detailed regional information (that has either been collected or gleaned from literature) is sufficient to describe and adequately demonstrate the range of effects from tectonic processes at the site, then collection of site information would be acceptable.

Question 2: Pages 3-4 and 3-8, Sections 3.1.1.1.6 and 3.1.1.2.6, Geophysics (Regional and Site)

These Sections ask for detailed information on investigations conducted using various geophysics methods. The results of geophysics studies would be more appropriate if they appeared, to support interpretations, in each relevant section of 3.1.1.

Response: The suggestion to address geophysics in each relevant section of 3.1.1 would seem to require a significant amount of repetition and/or cross-referencing of the same geophysical information in the various sections. NRC considers that having this information in the two recommended sections would facilitate its review.

However, it should be pointed out that this Regulatory Guide is a guidance document the purpose of which is to indicate the information to be provided in the License Application and to establish a format acceptable to the NRC staff for presenting the information. Although other formats can be used, use of the specified format will help ensure the completeness of the information provided, will assist the NRC staff and others in locating the information, and will shorten the time needed for the review process.

Question 3: Page 3-19, Section 3.1.3.1.1, Information and Investigation on the Geochemistry of the Regional Rock (Regional Geochemistry)

"Describe the regional saturated and unsaturated zone mineralogy, petrology, and chemistry. Include mineral chemistry; mineral distributions in bulk rock; distribution in fractures; bulk rock mineral and glass origins; alteration history, mineral and glass stability; and general thermal characteristics. Differences between the geochemistry of the regional saturated and unsaturated zone rock should be evaluated and discussed."

"Source of information, the locations of sampling, and data collections methods used to obtain measurements and observations should be described and documented."

Is detailed regional geochemistry information necessary for a license application? It would seem that site-specific geochemical information would be adequate. The applicability of regional geochemical data for the license application is not clear.

Response: As stated previously in response to question 1, the main purpose of requesting regional technical information is to allow a comparison of site-specific to regional data in order to gain a better understanding of the resultant effects of geochemical processes (e.g. natural analogs) and to gain insight on whether the site area is technically consistent with the region. Therefore, regional information is needed as part of the description of the geochemical system in the license application. However, if detailed site related information in combination with less detailed regional information (that has either been collected or gleaned from literature) is sufficient to adequately describe "geochemical setting" and demonstrate the range of effects from geochemical processes at the site, then collection of site information would be acceptable.