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NUCLEAR REGULATORY COMMISSION
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WM Record File 16

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MEMORANDUM FOR: Robert E. Browning
Division of Waste Management

FROM: Tilak R. Verma, Senior On-Site
Licensing Representative
Salt Repository Project (SRP)

SUBJECT: SRP SITE REPORT FOR THE WEEK OF
FEBRUARY 4, 1985

1. From my review of the Draft Environmental Assessment for Deaf Smith County, Texas, I am concerned about the reported rock strength of the repository host rock (Lower San Andres Unit 4 salt) in the Permian Basin. In Section 3.2.6.1.2 of the Draft EA, the proposed host rock is described as the thickest major salt bed within the Lower San Andres Unit 4. It is stated that considerable rock mechanics testing has been completed on core from the Mansfield No. 1, J. Friemel No. 1, Detten No. 1 and G. Friemel No. 1 wells (Tables 3-2 through 3-5) and that salt is generally medium strong. However, if one reads further, you can find that the Unit 4 major salt bed is not pure homogeneous halite. Impurities are present both as persistent interbeds, ranging in thickness from a few inches to several feet, and as dispursed material within the salt or along grain boundaries. It is stated that there are, on the average, 65 district mudstone beds per 100 feet of salt in Unit 4.

   There are two points that need further evaluation in determining the representativeness of rock strength data for the Deaf Smith County site. (i) J. Friemel No. 1 well is the closest well to the proposed site. Point load test results and graphic loag for this well are shown in Figure 3-29. It seems to me that the rock strength from this figure can only be interpreted as weak for the Unit 4 salt. (ii) RE/SPEC, who did the rock mechanics testing, was quite selective in taking the samples of core for their lab tests. They tried to pick a relatively undisturbed (unbroken) core piece of clean salt. Clean salt samples could never be considered as a representative sample for the Unit 4 salt.

   The test results presented and discussed in Section 3.2.6.1.2, may not be representative for the thick salt bed that is being considered for the host rock in the Permian Basin. I strongly recommend that we take a look at the core from the J. Friemel No. 1 well and discuss the procedures and objectives for core sampling with RE/SPEC and SWEC. This should be done before finalizing our comments on EAs.

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2. I have discussed this problem with SRPO geologists and they agree with me that the core samples taken and tested by RE/SPEC may not be representative. They are also in a process of evaluating the representativeness of the test results for the Unit 4 salt.

Tilak R. Verma

Tilak Verma
Senior On-Site
Licensing Representative
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