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January 14, 1985  
WGC - R531

Mr. Benjamin Rice, Project Manager  
Geotechnical Branch  
Division of Waste Management  
Office of Nuclear Material Safety & Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Swisher County Site, Texas DEA Review Comments

Dear Mr. Rice:

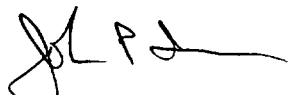
The enclosed comments are the result of Weston Geophysical's review of the above referenced DEA. Our comments are presented in the format described in "Standard Review Plan for Draft Environmental Assessments", dated December 12, 1984.

As directed by you and your fellow staff members, we have concentrated our comments on significant aspects of the DEA documents which impact guideline criteria.

Should you have any questions or require clarification regarding this submittal, please contact us.

Very truly yours,

WESTON GEOPHYSICAL CORPORATION

  
John P. Imse

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DEA

SWISHER COUNTY SITE, TEXAS

REVIEW COMMENTS

PREPARED BY

WESTON GEOPHYSICAL CORPORATION

FOR

THE UNITED STATES NUCLEAR REGULATORY COMMISSION

MAJOR COMMENT #1

DEA: SWISHER

Subject: Structure and Tectonics

Comment: Presentation of structural setting, particularly existence of faults, for the site vicinity is superficial. This is due to the unavailability of two key reports on interpreted seismic reflection data for the site area and the presentation of unit elevation maps. Because the seismic reflection reports are unavailable, faults in the site region cannot be reviewed for extent, style of faulting and occurrence. Use of unit elevation maps, noting that faults are not shown, rather than more accepted structure contour maps does not provide a clear picture of the structural setting. Structural development through time is not depicted and effects on depositional patterns can not be assessed.

MAJOR COMMENT #2

DEA: SWISHER

Section: Hydrogeology

Comment: Calculations of travel time to the accessible environment are based on Darcian flow conditions. No calculations are presented where assumed flow is controlled by fracturing. Using fracture flow it "appears probable that ground-water flow rates through the fractures or other secondary openings in the bedrock of the Swisher study area could be one or more orders of magnitude greater than the ground-water flow rates shown" [P. 6-83]. Therefore, it is possible for downward flow through the evaporite section to only be 7,400 years or less, and since the accessible area, as planned, is only a kilometer or two from the repository, the guidelines may not be met.

The effect of interbeds on vertical flow through the unit is also not addressed. If the interbeds can act as barriers to vertical flow and can concentrate flow along the interbeds, the time to the accessible environment may be further diminished.

DETAILED COMMENT #3-1

DEA: SWISHER

Section: 3.2.5.1 Faulting, p. 3-56, para. 5

Comment: Two documents referenced here Long [1983] and Budnik [1984] regarding seismic reflection interpretation were not available for review of conclusions regarding faulting in the site area.

DETAILED COMMENT #6-1

DEA: SWISHER

Section: 6.3.1.1.1 Statement of Qualifying Condition, p. 6-83, para. 5

Comment: The authors have used a horizontal distance to the accessible environment of 10 km. Although that is the maximum allowable distance, they have previously stated [Section 6.2.1.1.1, p. 6-6] that the conditions at this site will not require a controlled area of that size and have only estimated a need for approximately 1-2 kilometers of controlled zone beyond the limits of the repository. The travel times presented here should be those that justify such a limited controlled area. See also Major Comment 2.

DETAILED COMMENT #6-2

DEA: SWISHER

Section: 6.3.1.1.2 Analysis of Favorable Conditions, p. 6-83, para. 7

Comment: The travel time from repository to accessible environment is stated as 907,000 years. Two paragraphs earlier the travel time for the same route is stated as 104,000-378,000 years. Which is correct? See also Comment 6-1 and Major Comment 2.

DETAILED COMMENT #6-3

DEA: SWISHER

Section: 6.3.1.1.5 Conclusion for Qualifying Condition, p. 6-87, para 1.

Comment: See Comment 6-2.

DETAILED COMMENT #6-4

DEA: SWISHER

Section: 6.4.2.3.5 Geologic Subsystem Performance, p. 6-213, para. 2

Comment: The thicknesses and travel times stated here are applicable to the Deaf Smith site, not Swisher. It should be noted that total travel time presented here is different than stated in the Deaf Smith DEA.