

CALCULATION TITLE PAGE

*SEE INSTRUCTIONS ON REVERSE SIDE

A 5010.64 (FRONT)

CLIENT & PROJECT PRIVATE FUEL STORAGE, LLC - PRIVATE FUEL STORAGE FACILITY				PAGE 1 OF 5	
CALCULATION TITLE (Indicative of the Objective): EVALUATE THE LIQUEFACTION POTENTIAL OF THE SOILS UNDERLYING THE PROPOSED SITE				QA CATEGORY (✓) <input checked="" type="checkbox"/> I - NUCLEAR SAFETY RELATED <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> OTHER	
CALCULATION IDENTIFICATION NUMBER					
J.O. OR W.O. NO.	DIVISION & GROUP	CURRENT CALC. NO.	OPTIONAL TASK CODE	OPTIONAL WORK PACKAGE NO.	
05996.01	G(B)	06		119	
* APPROVALS - SIGNATURE & DATE			REV. NO. OR NEW CALC NO.	SUPERSEDES * CALC. NO. OR REV. NO.	CONFIRMATION * REQUIRED (✓) YES NO
PREPARER(S)/DATE(S)	REVIEWER(S)/DATE(S)	INDEPENDENT REVIEWER(S)/DATE(S)			
PAUL J. TRUDEAU 2-14-97 <i>Paul J. Trudeau</i>	Nuri T. GEORGES 2/18/97 <i>Nuri T. Georges</i>	Nuri T. GEORGES 2/18/97 <i>Nuri T. Georges</i>	0		✓
PAUL J. TRUDEAU 5-8-97 <i>Paul J. Trudeau</i>	ALAN F BROWN 5/13/97 <i>Alan F Brown</i>	ALAN F BROWN 5/13/97 <i>Alan F Brown</i>	1	0	✓
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RECORDS MGT. FILES (OR FIRE FILE IF NONE)	ORIG (BOSTON)	✓			
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Attachments:

A No longer required; therefore, it was removed from Rev 1.

REASONS FOR REV 1:

Remove "Confirmation Required", since the basis for the "Requires Confirmation" on p 4 of the original issue of this calculation was because some of the data were based on preliminary results of the geophysical surveys received from Geosphere Midwest. Rev 1 of this calculation updates the necessary data based on the final report, (PFSF Report 05996.01-G(PO9)-1, Rev 0); therefore, this calculation no longer requires confirmation.

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<p>OBJECTIVE:</p> <p>Evaluate the liquefaction potential of the soils underlying the proposed Private Fuel Storage Facility (PFSF) at the Skull Valley, UT site.</p> <p>Method: Not required—See discussion below.</p> <p>DISCUSSION:</p> <p>The soils underlying the proposed PFSF site are not susceptible to liquefaction due to the design earthquake because they are essentially <i>dry from grade down to a depth greater than 100 ft</i>. See Figure 1 for a generalized subsurface profile, which was developed based on the borings that were drilled in late 1996. The groundwater table was not encountered in these borings, the deepest of which were drilled to depths of 100 ft. In addition, seismic refraction surveys indicate that the groundwater table is greater than ~100 ft to ~120 ft below grade at the site (see p11 of Geosphere Midwest, 1997).</p> <p>Figure 1 illustrates that from a depth of ~30 ft down to 100 ft, the depth of the deepest boring, the soils are very dense. The Standard Penetration Test (SPT) N-values for these soils typically exceed 100 blows/ft, and they increase with depth. The presence of this >60-ft thick layer is expected to preclude any surface manifestation of liquefaction (e.g., sand boils) of soils below the groundwater table, if it were possible for them to liquefy. This is considered unlikely, however, because the density of the soils encountered in the borings increases with depth and the P-wave velocities (5100 fps to 5900 fps) of the soils below the groundwater table, reported by Geosphere Midwest (1997) indicate that these soils too are very dense.</p> <p>CONCLUSIONS:</p> <p>The soils underlying the proposed site are not susceptible to liquefaction due to shaking caused by the design earthquake.</p>				

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REFERENCES:

Geosphere Midwest, PFSF Report No. 0599601-G(PO9)-1, Rev 0, "Seismic Survey of the Private Fuel Storage Facility—Skull Valley, Utah," prepared for Stone & Webster Engineering Corp by Geosphere Midwest, Midland, MI, February 1997,

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