STONE & WEBSTER ENGINEERING CORPORATION

CLIENT & PROJECT				PAGE 1 OF 5 PLUS 1 PG OF ATTACHMENTS
Private Fuel Storage Facility - Private Fuel, LLC				
CALCULATION TITLE **Calculation of Holtec Cask Impact Load and Sliding Distance**				QA CATEGORY (X) X I - NUCLEAR SAFETY RELATED __ II __ III __ OTHER
CALCULATION IDENTIFICATION NUMBER				
J.O. OR W.O. NO.	DIVISION & GROUP	CURRENT CALC. NO.	OPTIONAL TASK CODE	OPTIONAL WORK PACKAGE NO.
05996.01	**STRUCTURAL**	**SC-2**	**NA**	**NA**

APPROVALS - SIGNATURE & DATE			REV. NO. OR NEW CALC. NO	SUPERSEDES CALC. NO. OR REV. NO.	CONFIRMATION REQUIRED (X)	
PREPARER(S)/DATE(S)	REVIEWER(S)/DATE(S)	INDEPENDENT REVIEWER(S)/DATE(S)			YES	NO
S.C. SMITH 6/20/97	S.P. JACOB 6/20/97	S.P. JACOB 6/20/97	0	NA		X

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CALCULATION SHEET

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PREPARER/DATE	REVIEWER/CHECKER/DATE	INDEPENDENT REVIEWER
S.C. Smith 6/20/97		

SUBJECT/TITLE	QA CATEGORY/CODE CLASS
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(Revisions, Additions, Deletions, Etc.)

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PREPARER/DATE	REVIEWER/CHECKER/DATE	INDEPENDENT REVIEWER
S.C. Smith 6/20/97		

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OBJECTIVE:

The purpose of this calculation is to calculate the following items based on the results of Holtec's site specific seismic cask analysis as detailed in Reference 1:

a. The maximum cask sliding distance (vector summation) due to the design earthquake.
b. The maximum vertical impact load (expressed in G's) of the cask on the pad as it returns to a vertical position from its maximum tip over excursion.

REFERENCES:

1. Multi-Cask Seismic Response at the PFSF ISFSI, Holtec Report HI-971631, Rev 0, 5/19/97, HOLTEC International.

CALCULATION METHOD & ASSUMPTIONS:

Standard Engineering methods will be used. Assumptions will be as noted in the body of the calculation.

CONCLUSIONS:

Results are shown on the following page.

A. The maximum cask sliding distance (vector summation) due to the design earthquake.

Maximum sliding is for cask #6 (8 casks on the pad, coeff. of friction = 0.2) [Ref. 1, Table 7.15]

Distance = [x (bot)^2 + y (bot) ^2]^.5 = [(8.395")^2 + (5.886")^2]^0.5 = **10.25"**

B. The maximum vertical impact load (expressed in G's) of the cask on the pad as it returns to a vertical position from its maximum tip over excursion.

Maximum vertical impact force of cask on pad [Ref. 1, Fig 9.2] = 3,000,000 lbs.

Weight of cask [Ref. 1, pgs 4 & 5] = 88,857 lbs. (MPC) + 267,664 lbs. (cask) = 356,521 lbs.

Maximum deceleration = 3,000,000 lbs / 356,521 lbs = **8.41 g**