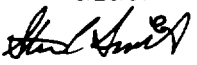
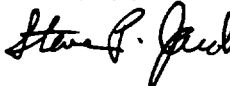



STONE & WEBSTER ENGINEERING CORPORATION

CLIENT & PROJECT Private Fuel Storage Facility - Private Fuel, LLC				PAGE 1 OF 5 PLUS 1 PG OF ATTACHMENTS	
CALCULATION TITLE Calculation of Holtec Cask Impact Load and Sliding Distance				QA CATEGORY (X) <input checked="" type="checkbox"/> 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
DISTRIBUTION					
GROUP	NAME & LOCATION	COPY SENT (X)	GROUP	NAME & LOCATION	COPY SENT (X)
RECORDS MGT. FILES (OR FIRE FILE IF NONE)	JOB BOOK R4.2 FIRE FILE	ORIG. x			

CALCULATION SHEET

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PREPARER/DATE S.C. Smith 6/20/97	REVIEWER/CHECKER/DATE	INDEPENDENT REVIEWER	
SUBJECT/TITLE Calculation of Holtec Cask Impact Load and Sliding Distance		QA CATEGORY/CODE CLASS I	

HISTORICAL DATA - REVISION 0**Page No.****Description**

None

Original Issue

CALCULATION SHEET

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PREPARER/DATE S.C. Smith 6/20/97	REVIEWER/CHECKER/DATE	INDEPENDENT REVIEWER	
SUBJECT/TITLE Calculation of Holtec Cask Impact Load and Sliding Distance		QA CATEGORY/CODE CLASS I	
<p><u>OBJECTIVE:</u></p> <p>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:</p> <ol style="list-style-type: none">The maximum cask sliding distance (vector summation) due to the design earthquake.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. <p><u>REFERENCES:</u></p> <ol style="list-style-type: none">Multi-Cask Seismic Response at the PFSF ISFSI, Holtec Report HI-971631, Rev 0, 5/19/97, HOLTEC International. <p><u>CALCULATION METHOD & ASSUMPTIONS:</u></p> <p>Standard Engineering methods will be used. Assumptions will be as noted in the body of the calculation.</p> <p><u>CONCLUSIONS:</u></p> <p>Results are shown on the following page.</p>			

CALCULATION SHEET

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SUBJECT/TITLE Calculation of Holtec Cask Impact Load and Sliding Distance		QA CATEGORY/CODE CLASS I	
<p>A. The maximum cask sliding distance (vector summation) due to the design earthquake.</p> <p>Maximum sliding is for cask #6 (8 casks on the pad, coeff. of friction = 0.2) [Ref. 1, Table 7.15]</p> <p>Distance = $[x(\text{bot})^2 + y(\text{bot})^2]^{.5} = [(8.395'')^2 + (5.886'')^2]^{.5} = \underline{10.25''}$</p> <p>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.</p> <p>Maximum vertical impact force of cask on pad [Ref. 1, Fig 9.2] = 3,000,000 lbs.</p> <p>Weight of cask [Ref. 1, pgs 4 & 5] = 88,857 lbs. (MPC) + 267,664 lbs. (cask) = 356,521 lbs.</p> <p>Maximum deceleration = 3,000,000 lbs / 356,521 lbs = <u>8.41 g</u></p>			