

Private Fuel Storage, L.L.C.

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August 6, 1999

COMMITMENT RESOLUTION LETTER #14
DOCKET NO. 72-22 / TAC NO. L22462
PRIVATE FUEL STORAGE FACILITY
PRIVATE FUEL STORAGE L.L.C.

- Reference
1. PFS letter, Donnell to Delligatti, Request for Exemption to 10 CFR 72.102(f)(1) Seismic Design Requirement, dated April 2, 1999
 2. PFS letter, Donnell to U.S. NRC, Commitment Resolution Letter #12, dated July 28, 1999

In accordance with our August 4, 1999 telephone call, Private Fuel Storage (PFS) submits the following resolution to NRC/CNWRA comments regarding the Private Fuel Storage Facility (PFSF) design earthquake and geotechnical program:

NRC Comments

1. PFS should consider using a design earthquake that is based on a Probabilistic Seismic Hazard Analysis (PSHA) with a return frequency of 2000 years. Alternatively, PFS could submit additional regulatory and technical basis information to justify the use of a 1000-year return period.
2. In order to demonstrate an adequate safety factor to resist sliding, the cask storage pad and canister transfer building stability analyses should use values of c and ϕ appropriate for the soils at the founding level of the structures. The slip failure plane should be investigated and discussed in the analyses also.
3. The cask storage pad design analysis should consider the variability of the in situ soils.
4. PFS should address post earthquake inspection procedures for equipment important to safety.

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PFS Response

1. In order to include additional conservatism in the Private Fuel Storage Facility (PFSF) design, PFS will revise the design earthquake to utilize the PSHA approach with a return frequency of 2000 years. A license amendment reflecting this change will be prepared and submitted by August 20, 1999. Additionally, the seismic exemption request submitted in Reference 1 will be revised to state that for additional conservatism PFS has chosen to use a return frequency of 2000 years. A revised seismic exemption request will also be submitted by August 20, 1999.

- 2.&3. PFS will revise and submit the calculations listed below by August 20, 1999. These calculations will address the foundation sliding concerns as well as the concerns in items 1 through 5 of Reference 2. Please note that our previous response date provided in Reference 2 must be revised to August 20, 1999 due to the change in the design earthquake as discussed in item 1 above.
 - Geomatrix Calculation, Soil and Foundation Parameters for Dynamic Soil Structure Interaction Analyses
 - Geomatrix Calculation, Development of Acceleration Time Histories for the Design Earthquake
 - S&W Calculation, Stability Analyses of Storage Pads
 - S&W Calculation, Stability Analyses of the Canister Transfer Building Supported on a Mat Foundation
 - S&W Calculation, Development of Soil Impedance Functions for the Canister Transfer Building
 - S&W Calculation, Seismic analysis of the Canister Transfer Building
 - Holtec calculation, multi-cask response at the PFS ISFSI from 2000 year seismic event

4. The PFSF Emergency Plan (EP) and the Technical Specifications provided in Appendix A of the License Application discuss a seismic event affecting the PFSF site.

EP Section 2.4.1, item 5 states:

“A seismic event affecting the PFSF site does not constitute an emergency condition. The cask storage systems, Canister Transfer Building, canister transfer cranes, and canister downloader are capable of withstanding earthquake conditions, and a design basis ground motion will not cause a canister drop, cask toppling event, or loss of safety functions. Only earthquakes exceeding the design basis ground motion are classified as an emergency condition. Information on the

magnitude of a seismic event is obtained from the National Earthquake Information Center in Golden, Colorado.”

EP Section 2.4.2, item 4 states:

“A seismic event exceeding the design basis warrants the Alert classification. Information on the magnitude of a seismic event is obtained from the National Earthquake Information Center in Golden, Colorado. The storage pads and storage cask systems are designed to withstand the design basis ground motion, and analyses demonstrate the storage casks will retain their stability and not tip over during a seismic event of this magnitude. In addition, the Canister Transfer Building, canister transfer cranes, and canister downloader are designed to withstand the design basis ground motion. Therefore, a seismic event of this magnitude will not cause toppling of storage or transfer casks and there will be no loss of canister confinement nor loss of safety functions. However, an earthquake that exceeds the design basis ground motion has the potential for degradation of the level of safety, and the Alert classification is appropriate to mobilize personnel to investigate effects of the event. This is not considered a credible event.”

EP Section 3.2, item B states:

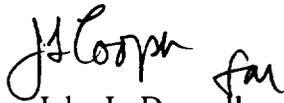
"Cask Tipover Accident: This is not a credible event, since it would require an event such as an earthquake or tornado of a magnitude well beyond the design basis. The concern with this event would be the potential loss of heat removal capacity, since the natural convection design exists when the cask is oriented vertically. Mitigation of this event is provided by the design of the storage casks, which provides 30 hours (assuming a complete blockage of all air ducts) to restore natural convection cooling before temperatures exceed design criteria. A crane with the capacity to upright a toppled storage cask would be temporarily procured and the toppled storage cask placed back on the storage pad in its vertical orientation within 30 hours. A visual inspection and radiological survey of the cask would then be performed to verify its integrity."

Technical Specification, item 2.6, "Action", states:

“The center-to-center and distance to edge of pad spacing shall be measured upon initial storage cask placement. After a seismic event of magnitude greater than 5.0 Richter at the PFSF, as determined by the National Earthquake Information Center, Golden, CO., verify spacing specified above. If required, restore center-to-center and distance to edge of pad spacing.”

If you have any questions regarding this response, please contact me at 303-741-7009.

Sincerely

A handwritten signature in black ink, appearing to read "JL Donnell" with a stylized flourish at the end.

John L. Donnell
Project Director
Private Fuel Storage L.L.C.

cc:

Mark Delligatti
John Parkyn
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