

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSIONBEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
PRIVATE FUEL STORAGE, LLC)	Docket No. 72-22-ISFSI
)	
(Independent Spent)	
Fuel Storage Installation))	

NRC STAFF'S OBJECTIONS AND RESPONSES
TO THE "STATE OF UTAH'S TENTH SET OF
DISCOVERY REQUESTS DIRECTED TO THE
NRC STAFF," CONCERNING CONTENTION UTAH L

INTRODUCTION

On November 27, 2000, the State of Utah ("State") filed the "State of Utah's Tenth Set of Discovery Requests Directed to the NRC Staff" ("Tenth Request"), in this proceeding on the application for an Independent Spent Fuel Storage Installation ("ISFSI") filed by Private Fuel Storage, L.L.C. ("PFS" or "Applicant"). In its Request, the State filed 101 requests for admission and seven requests for documents, which purportedly concern Contention Utah L (geotechnical issues). The NRC Staff ("Staff") hereby files its objections and responses to the State's Tenth Request, as follows.

GENERAL OBJECTIONS

Objection 1. The Staff objects to each of the State's discovery requests, in that the State has not complied with the Commission's regulations that govern discovery from the Staff. In this regard, it is well established that discovery against the Staff rests on a different footing than discovery in general. *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-634, 13 NRC 96, 97-98 (1981). While discovery from parties in an NRC adjudicatory proceeding is generally governed by the provisions of 10 C.F.R. § 2.740 *et seq.*, interrogatory and document discovery

against the Staff is governed by the provisions of 10 C.F.R. §§ 2.720(h)(ii)-(iii), 2.744 and 2.790.¹

These regulations establish certain limits to the Staff's obligation to respond to requests for discovery.

In particular, with regard to interrogatories, the Commission's rules provide:

[A] party may file with the presiding officer written interrogatories to be answered by NRC personnel with knowledge of the facts designated by the Executive Director for Operations. Upon a finding by the presiding officer that answers to the interrogatories are necessary to a proper decision in the proceeding and that answers to the interrogatories are not reasonably obtainable from any other source, the presiding officer may require that the staff answer the interrogatories.

10 C.F.R. § 2.720(h)(2)(ii). With regard to requests for the production of documents, the Commission's rules similarly provide:

(a) A request for the production of an NRC record or document not available pursuant to 10 C.F.R. § 2.790 . . . shall set forth the records or documents requested, either by individual item or by category, and shall describe each item or category with reasonable particularity and shall state why that record or document is relevant to the proceeding.

(b) If the Executive Director for Operations objects to producing a requested record or document on the ground that (1) it is not relevant or (2) it is exempted from disclosure under § 2.790 and the disclosure is not necessary to a proper decision in the proceeding or the document or the information therein is reasonably obtainable from another source, he shall so advise the requesting party.

10 C.F.R. § 2.744(b). The rule further provides for application by the requesting party to the presiding officer to compel production of the documents, where the movant shows that the document is relevant to the issues in the proceeding; and the document is not exempt from disclosure under 10 C.F.R. § 2.790 -- or, if exempt, that the document or information is necessary

¹ See also 10 C.F.R. §§ 2.740(f)(3), 2.740a(j), 2.740b(a), and 2.741(e) (excluding discovery from the Staff from the general provisions of those regulations).

to a proper decision in the proceeding and is not reasonably obtainable from another source. 10 C.F.R. § 2.744(c)-(d).²

Moreover, it is an adequate response to *any* discovery request for a party to state that the information or document requested is available in the public domain and to provide information to locate the material requested. 10 C.F.R. § 2.740(b)(1); *accord*, *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), CLI-79-8, 10 NRC 141, 147-148 (1979).

Here, the State has not complied with any of the Commission's requirements governing discovery against the Staff. First, the State has not indicated that the requested information and documents are not available in the public domain. Indeed, much of the information and documents requested by the State are available to the public at the Commission's Public Document Room (PDR) or the former Local PDR (LPDR) in Salt Lake City -- or from the Applicant, inasmuch as much of it concerns the Applicant's analyses.³ The State has not indicated that the requested information and documents are exempt from disclosure under 10 C.F.R. § 2.790 or that it can not obtain the documents from public sources. Similarly, to the extent that any documents may be exempt from disclosure, the State has not explained why any such exempt items are necessary to a proper decision in the proceeding.

Objection 2. The Staff objects to each of the State's discovery requests, insofar as they request information that is not relevant to the issues in this proceeding and/or that exceeds the scope of admitted contentions in this proceeding. In particular, the Staff notes that of the 101

² Additionally, 10 C.F.R. § 2.744(e) provides a framework for limited disclosure (under a protective order) of documents exempt from disclosure under 10 C.F.R. § 2.790, upon a finding by the presiding officer that such disclosure is necessary to a proper decision in the proceeding. *Cf.* 10 C.F.R. § 2.740(c).

³ To the extent that the instant discovery requests seek information that has been withheld from public disclosure as PFS' proprietary information, the State has been afforded access to that material by the Applicant under a confidentiality agreement, and the State has not shown why it could not obtain the requested information from the Applicant.

requests for admission contained in the State's Tenth Request, all but 2 requests pertain to matters that are outside the scope of Contention Utah L. This contention, as filed by the State and admitted by the Board, asserts that PFS has failed to adequately characterize the soil and seismic properties of the proposed PFS site. Nowhere in this contention did the State raise an issue concerning the seismic design of the facility, or the Applicant's cask/pad sliding analysis. Yet, despite the clear language and scope of the contention, the State has chosen to present, at the close of the discovery period on safety contentions, numerous requests for admissions on structural analysis and design issues that the State had never raised in this contention. Moreover, while these concerns were never raised in Contention Utah L, many of them were raised in other contentions that are no longer at issue in the proceeding.⁴ Accordingly, it is altogether improper for the State to seek discovery on these issues at this time, under the rubric of this site characterization contention.

Objection 3. The Staff objects to the State's discovery requests insofar as they relate to matters which are outside the jurisdiction of the NRC and/or are beyond the proper scope of this proceeding.

Objection 4. The Staff objects to each of the State's discovery requests, insofar as they request information or documents from the "Nuclear Regulatory Commission," "NRC," or other persons or entities who are not NRC Staff members or consultants in this proceeding. *See, e.g.,* Definition A (Request at 4). The NRC and persons other than Staff members (*e.g.,* Commissioners, Commissioners' Assistants, Licensing Board members, ACRS members, etc.) are

⁴ *See* (1) *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 206-09 (1998), dismissing Contention Utah EE ("Failure to Demonstrate [HI-STORM] Cask-Pad Stability During Seismic Event"); and (2) "Order (Revising Scheduling Order and Granting Motion to Withdraw)," dated October 6, 2000, slip op. at 2 (granting State of Utah's September 14, 2000, request to withdraw Contention Utah GG, "Failure to Demonstrate Cask-Pad Stability During Seismic Event for TranStor Casks").

not parties to this proceeding and are not properly subject to the State's requests for discovery in this proceeding.

Objection 5. The Staff objects to each of the State's discovery requests, insofar as they seek to impose an obligation to respond that is different from or greater than the obligations imposed by Commission requirements in 10 C.F.R. Part 2. *See, e.g.*, Instruction B, "Lack of Information" (Request at 2).

Objection 6. The Staff objects to each of the State's discovery requests, insofar as they may request information or documents protected under the attorney-client privilege, the doctrines governing the disclosure of attorney work product and trial preparation materials, and/or any other privilege or exemption that warrants or permits the non-disclosure of documents under the Freedom of Information Act, as set forth in 10 C.F.R. § 2.790(a). Notwithstanding this objection, the Staff will prepare a privilege log to identify any documents that are sought to be withheld from discovery as privileged, and will produce that log to the State.

Objection 7. The Staff objects to each of the State's discovery requests, insofar as they pertain to the Applicant's seismic exemption request or its probabilistic seismic hazard analysis ("PSHA"), inasmuch as those issues are outside the scope of Contention Utah L. *See, e.g.*, "Memorandum and Order (Ruling on Discovery Requests Relating to Contention Utah L)," dated June 12, 2000, slip op. at 2.

Objection 8. The Staff objects to each of the State's requests for the production of documents, in that the 15-day period for timely compliance therewith requires document production after the December 11, 2000 close of discovery. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), "Memorandum and Order (Ruling on Discovery Requests)" (March 10, 2000), slip op. at 11-13.

RESPONSES TO DISCOVERY REQUESTS

Notwithstanding the above objections to the State's Request, and without waiving these objections or its right to interpose these or other objections in the future, the Staff hereby voluntarily provides the following responses to the State's Tenth Request.

A. Requests for Admissions - Contention Utah L.⁵

REQUEST FOR ADMISSION NO. 1 - UTAH L. Do you admit that the soil-cement subgrade proposed by PFS is still at the conceptual stage? See SER at 2-49.

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 2 - UTAH L. Do you admit that the soil-cement subgrade proposed by PFS has not yet reached the design stage? See SER at 2-49.

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 3 - UTAH L. Do you admit that a nearby major fault capable of generating a large magnitude earthquake could impact the PFS site?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is overly vague and ambiguous, in that it fails to define various subjective and imprecise terms used in this request ("nearby," "major," "large," and most significantly, "impact").

⁵ The Staff's responses to the State's requests for admission are supported by the Affidavit of Dr. John Stamatakos, attached hereto. Objections to the State's Tenth Request are stated by the undersigned Staff Counsel.

REQUEST FOR ADMISSION NO. 4 - UTAH L. Do you admit that the NRC staff has not evaluated near fault effects in the ground motion due to the PFS site being located in close proximity to a major fault?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is overly vague and ambiguous, in that it fails to define various subjective and imprecise terms used in this request (“near,” “close” and “major”). Notwithstanding this objection, the Staff states as follows: No.

REQUEST FOR ADMISSION NO. 5 - UTAH L. Do you admit that proximity to a major fault causes a directivity effect from a large pulse in the ground motion time history which effectively carries a large amount of energy in a short period making an earthquake excitation similar to a blast?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, (b) is overly vague and ambiguous, in that it fails to define various subjective and imprecise terms used therein (such as “proximity”, “major”, “large pulse”, “large amount,” and “blast”), and (c) constitutes an impermissible and confusing compound question. Further, it is unclear what is meant by the phrase, “a large pulse in the ground motion time history,” or the type or size of the “blast” referred to in this request.

REQUEST FOR ADMISSION NO. 6 - UTAH L. Do you admit that pulses in the design time histories may be (a) one sided (e.g., half sine wave); or (b) two sided (e.g., full sine wave); or (c) symmetrical; or (d) unsymmetrical?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous, with respect to its use of the terms “one sided,” two sided,” “pulses in the design time histories.”

REQUEST FOR ADMISSION NO. 7 - UTAH L. Do you admit that Calculation No. 05996.02 G(P018)-3, Development of Time Histories for 2000-Year Return Period Design Spectra, August 24, 1999 (Geomatrix Consultants), provides only one set of acceleration time

histories (2000-year response spectrum) for the dynamic analysis of the casks and the pad and canister transfer building ("CTB") foundations?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 8 - UTAH L. Do you admit that PFS's development of design time histories does not account for a variation in pulse shapes?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous with respect to the term "variation in pulse shapes."

REQUEST FOR ADMISSION NO. 9 - UTAH L. Do you admit that the Staff relied on PFS's development of design time histories?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 10 - UTAH L. Do you admit that the SER does not account for any variation in the period of the pulse in the design time histories?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous with respect to the term "variation in the period of the pulse in the design time histories."

REQUEST FOR ADMISSION NO. 11 - UTAH L. Do you admit that the SER does not consider multiple time histories in characterizing the effects of potential pulses?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous with respect to the terms “multiple time histories” and “potential pulses.”

REQUEST FOR ADMISSION NO. 12 - UTAH L. Do you admit that the Staff has not considered how fault normal and fault parallel components of design time histories lined up with the longitudinal and transverse directions of the pad.

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 13 - UTAH L. Do you admit that a major faults [sic] dips under the proposed PFS site? See e.g., SAR 2.6-3.

STAFF RESPONSE. The Staff objects to this request on the grounds that it contains a typographical error which confuses the singular and plural cases (i.e., “a major faults dips”). Notwithstanding this objection, assuming that this phrase was intended to read “a major fault dips,” the Staff states as follows: Yes.

REQUEST FOR ADMISSION NO. 14 - UTAH L. Do you admit for near-fault sites like PFS, where a major fault dips under the site, earthquake waves are likely to arrive at an angle?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is overly vague and ambiguous, in that it fails to provide necessary predicates, such as the location of the earthquake, on which fault the earthquake occurs, the type of “angle” referred to herein (e.g., oblique or other), or whether the angle referred to herein is the angle relative to the site or relative to the fault. Further, this request is ambiguous, in that all earthquake waves that arrive at a site would arrive at some angle relative to the site, depending on where the earthquake occurs.

REQUEST FOR ADMISSION NO. 15 - UTAH L. Do you admit that earthquake waves arriving at an angle may cause additional rocking and torsional motion of the structures above and beyond the vibration caused by the vertically propagating waves of the earthquake?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous with respect to the terms “arriving at an angle,” “additional” (additional to what?), and “vertically propagating waves.” See Response to Request for Admission No. 14, *supra*.

REQUEST FOR ADMISSION NO. 16 - UTAH L. Do you admit that such rocking and torsional effects additional to the vibration caused by the vertically propagating waves of the earthquake affect the stability of components such as casks?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous. See Response to Requests for Admission 14 and 15, *supra*.

REQUEST FOR ADMISSION NO. 17 - UTAH L. Do you admit that the Staff’s evaluation of seismic load for the pads and canister transfer building, did not account for (a) a variation in seismic waves and (b) an angle of incidence?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 18 - UTAH L. Do you admit that the SER relies on Multi Cask Response at the PFS ISFSI from 2000 Year Seismic Event by Holtec dated August 20, 1999 (“Holtec Multi Cask Response”)?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 19 - UTAH L. Do you admit that the SER relies on calculation No. 05996.02 SC-5, Rev. 1, Seismic Analysis of Canister Transfer Building, Stone and Webster ("Calculation No. 05996.02 SC-5")? See SER at 2-64.

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 20 - UTAH L. Do you admit that design of the PFS facility structures, systems and components important to safety ("SSCs") is based on the vertically propagating waves only?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous with respect to the term "vertically propagating waves."

REQUEST FOR ADMISSION NO. 21 - UTAH L. Do you admit that the Staff did not evaluate the adverse effect of inclined waves on the seismic response of the SSCs at the PFS facility?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 22 - UTAH L. Do you admit that in the Holtec Multi Cask Response the analysis of the casks on the pad is a nonlinear analysis?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 23 - UTAH L. Do you admit that a non-linear sliding analysis of the casks sliding on the pad is sensitive to phasing of the design time histories?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 24 - UTAH L. Do you admit that it is common practice in performing nonlinear analysis to use a minimum of three sets of time histories (each set having three components) representing the seismic setting and local geology of the site to cover potential variation in phasing of the time histories?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 25 - UTAH L. Do you admit that the Staff relies on a nonlinear analysis which is based on one set of ground motions only?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 26 - UTAH L. Do you admit the Staff did not account for the effect of time history phasing on the cask response.

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 27 - UTAH L. Do you admit that in calculating soil spring and damping, the Staff assumed the pads are rigid?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which "calculation" by the Staff is referred to herein.

REQUEST FOR ADMISSION NO. 28 - UTAH L. Do you admit that PFSF Calculation No. 05996.02 G(P017)-2, Storage Pad Analysis and Design by International Civil Engineering Consultants, at page 214, table 5.2.5-1, shows that the vertical displacement of the pad varies by a factor larger than 2.5 from one node to the other?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 29 - UTAH L. Do you admit that based on the variation shown in Table 5.2.5-1 that the pad cannot be assumed to be rigid?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 30 - UTAH L. Do you admit that the Staff relied upon the method used in Holtec Multi Cask Response to calculate foundation spring and damping?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous, in that it does not define what is meant by "the method" used by Holtec International (i.e., which method?)

REQUEST FOR ADMISSION NO. 31 - UTAH L. Do you admit that the analysis in Holtec Multi Cask Response did not account for the frequency dependency of the foundation spring and damping?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 32 - UTAH L. Do you admit that the Staff relied on Calculation 05996.02 SC-4, Soil Springs and Dashpots for the Canister Transfer Building to show the effect of layered soil and frequency dependency of the foundation parameters.

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 33 - UTAH L. Do you admit that the Staff did not consider the flexibility of the mat and frequency-dependency of soil spring and damping in its analysis of the pads?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 34- UTAH L. Do you admit that the Staff relied on Holtec's analysis of cask sliding in Holtec Multi Cask Response?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 35 - UTAH L. Do you admit in analyzing cask sliding in Holtec Multi Cask Response, Holtec has used a range of coefficients of friction from 0.20 to 0.80?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 36 - UTAH L. Do you admit that Holtec Multi Cask Response assumed each coefficient of friction value to be constant at all contact points between the casks and the pad as the casks slide and move on the pad?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 37 - UTAH L. Do you admit that local deformation of the pad makes hard spots on the pad preventing smooth sliding of the casks?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 38 - UTAH L. Do you admit that if casks are prevented from smooth sliding then the overturning moment may increase?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in its use of the term "smooth sliding."

REQUEST FOR ADMISSION NO. 39 - UTAH L. Do you admit that long term contact between the cask with the pad may cause cold bonding?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 40 - UTAH L. Do you admit that if cold bonding occurred, the coefficient of friction could be larger than 0.80?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 41 - UTAH L. Do you admit that PFS's design is based on the assumption that the casks slide on the pad?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in its use of the phrase, "PFS's design" (*i.e.*, it is unclear whether this is a reference to the storage pad, the cask, or the Canister Transfer Building (CTB)).

REQUEST FOR ADMISSION NO. 42 - UTAH L. Do you admit that if sliding does not occur, the factor of safety for sliding and overturning of the pads is decreased?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which structure is undergoing the sliding referred to herein (*i.e.*, the storage pad, the cask, or the CTB).

REQUEST FOR ADMISSION NO. 43 - UTAH L. Do you admit that the Staff relied on Calculation No. 05996.02 G(P017)-2, Storage Pad Analysis and Design by International Civil Engineering Consultants ("Calculation No. 05996.02 G(P017)-2")?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 44 - UTAH L. Do you admit that the pads are only five feet apart in longitudinal direction?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 45 - UTAH L. Do you admit that because the pads are only 5 feet apart in longitudinal direction, there can be pad-to-pad interaction?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the phrase, pad-to-pad interaction (i.e., does this mean contact between the pads, or some sort of impact between the loaded areas beneath the pads?)

REQUEST FOR ADMISSION NO. 46 - UTAH L. Do you admit that pad-to-pad interaction causes additional unsymmetrical vertical motion of the pad and the casks, thus causing the overturning moment of the casks?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the terms "pad-to-pad interaction," "additional" (additional to what?), or "causing" the overturning moment (i.e., causing it to increase, or to decrease? Also, all structures may be considered to have some overturning moment, even without a seismic event.)

REQUEST FOR ADMISSION NO. 47 - UTAH L. Do you admit that the analysis of overturning and sliding stability of the pads are based on the maximum peak ground acceleration (such as 0.53g in vertical direction)? See Calculation No. 05996.02 G(P017)-2.

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 48 - UTAH L. Do you admit using maximum peak ground acceleration to analyze overturning and sliding stability of pads is only valid for rigid systems?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 49 - UTAH L. Do you admit that Calculation No. 05996.02 G(P017)-2 shows that the vertical frequency of the cask-pad-soil system varies from below 5 cycles/sec to above 8 cycle/sec depending on the soil properties considered?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the terms “vertical frequency” (i.e., is this the structure’s natural frequency?) or “cask-pad soil system” (i.e., is this the frequency of the soil column beneath the pad?).

REQUEST FOR ADMISSION NO. 50 - UTAH L. Do you admit that at frequencies from below 5 cycles/sec to above 8 cycle/sec the accelerations in the design response spectrum are larger than 1g?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous, in that it is not clear which design response spectrum is referred to herein.

REQUEST FOR ADMISSION NO. 51 - UTAH L. Do you admit that the SER relies on peak ground acceleration to calculate the foundation seismic loads?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 52 - UTAH L. Do you admit that use of peak ground acceleration values severely underestimates the seismic loads for stability analysis of the casks?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 53 - UTAH L. Do you admit that in the stability analysis of the pads, only the shear stress caused by the inertia load of the cask plus pad is considered?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 54 - UTAH L. Do you admit that the results of seismic free-field analysis (Calculation No. 05996.02-G(P018)-2, Soils and foundation parameters for dynamic soil-structure interaction, 200-year [sic] return period ground motions, Geomatrix Consultants), show that in the shallow depth in the upper 10 ft over 1 ksf of shear strength is already mobilized on account of free-filed [sic] wave propagation?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) contains typographical errors that alter the meaning of the request (i.e., "200-year return period" and "free-filed wave propagation").

REQUEST FOR ADMISSION NO. 55 - UTAH L. Do you admit that the full shear strength is no longer available to resist the inertia load of the structure?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it does not identify which structure is being referred to, or what is meant by the phrase “no longer available” (i.e., what conditions are assumed to be present or to have occurred to reduce the shear strength of the structure?)

REQUEST FOR ADMISSION NO. 56 - UTAH L. Do you admit that the Staff relied on the seismic analysis of the canister building in Calculation No 05996.02-SC-5, Seismic Analysis of Canister Transfer Building, Stone and Webster (“Calculation No 05996.02-SC-5”)?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 57 - UTAH L. Do you admit that in Calculation No 05996.02-SC-5 the best estimate shear modulus of the soil was increased by 50% and reduced by 30% to account for variation of soil properties?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it does not identify which soil properties are referred to herein (i.e., does this refer to the shear modulus?).

REQUEST FOR ADMISSION NO. 58 - UTAH L. Do you admit that the variation considered in Calculation No 05996.02-SC-5 is inconsistent with the variation considered for development of soil properties for the canister storage pads?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the

discovery of admissible evidence, and (b) is overly vague and ambiguous in that it does not identify which soil properties are referred to herein.

REQUEST FOR ADMISSION NO. 59 - UTAH L. Do you admit that the Staff relies on Calculation 05996.02 G(P018)-1 Soil and Foundation Properties for Dynamic Soil-Structure Interaction Analysis by Geomatrix Consultants ("Calculation 05996.02 G(P018)-1")?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 60 - UTAH L. Do you admit that Calculation No. 05996.02 G(P018)-1, Soil and foundation parameters for dynamic soil-structure interaction analyses (August 26, 1999), considers that 45 feet below the ground surface the soil properties are not well defined and that an appropriate variation of shear modulus varies by a factor of 2?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 61 - UTAH L. Do you admit that the range of soil properties used for pad design is different from the range used for the canister transfer building?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it does not identify which soil properties are referred to herein.

REQUEST FOR ADMISSION NO. 62 - UTAH L. Do you admit that concrete may crack under seismic loads?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the

discovery of admissible evidence, and (b) is overly vague and ambiguous in that it does not identify the type of concrete, or the “seismic load” that is referred to herein. Further, the Request’s use of the term “may” is overly vague and calls for a speculative response.

REQUEST FOR ADMISSION NO. 63 - UTAH L. Do you admit that the lower stiffness of the structure under cracked condition shifts the frequency of the structure and may cause additional seismic load in the structure?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the term “additional” (i.e., additional to what?). Further, the Request’s use of the term “may” is overly vague and calls for a speculative response.

REQUEST FOR ADMISSION NO. 64 - UTAH L. Do you admit that the Staff did not analyze the effects of concrete cracking in the design of the canister transfer building?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 65 - UTAH L. Do you admit that the concrete design at the PFS facility must be in accordance with ASCE 4-98?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 66 - UTAH L. Do you admit that ASCE 4-98 requires consideration of concrete cracking in design?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 67 - UTAH L. Do you admit that the SER does not explain how the mass points in the CTB model were computed?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 68 - UTAH L. Do you admit that the SER does not explain what percentage of operating load and live load was considered?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 69 - UTAH L. Do you admit that the Staff did not analyze the effects of accidental mass eccentricity in the CTB design?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the term “accidental” in conjunction with the phrase “mass eccentricity.”

REQUEST FOR ADMISSION NO. 70 - UTAH L. Do you admit that ASCE 4-98 requires consideration of accidental eccentricity in the design?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the

discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the term “accidental eccentricity.”

REQUEST FOR ADMISSION NO. 71 - UTAH L. Do you admit that the Staff did not consider the effect of mass moment inertia in calculating the seismic load?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which “calculation” by the Staff is referred to herein.

REQUEST FOR ADMISSION NO. 72 - UTAH L. Do you admit that the Staff relied on the CTB stability analysis (Calculation No. 05996-02, G(B)-13, S&W)?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 73 - UTAH L. Do you admit that in Calculation No. 05996-02, G(B)-13, S&W, seismic loads are obtained by multiplying the mass at each elevation by the acceleration response from the dynamic analysis?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 74 - UTAH L. Do you admit that the in the CTB analysis the Staff did not consider the effect of the rotational mass moment of inertia?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which “analysis” by the Staff is referred to herein.

REQUEST FOR ADMISSION NO. 75 - UTAH L. Do you admit that the Staff did not consider the effect of mass moment of inertia in calculating the seismic load?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which "calculation" by the Staff is referred to herein.

REQUEST FOR ADMISSION NO. 76 - UTAH L. Do you admit that estimating seismic load by multiplying mass times acceleration ignores the coupling from the two horizontal directions?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 77 - UTAH L. Do you admit that the seismic loads from the dynamic analysis of the building including the coupling from the two horizontal directions should be used in the stability analysis?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the terms "should be used," or which structure's stability analysis is referred to by the phrase, "the stability analysis."

REQUEST FOR ADMISSION NO. 78 - UTAH L. Do you admit that the Staff did not take into consideration the effect of coupling between horizontal responses in the design?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which "design" by the Staff is referred to herein.

REQUEST FOR ADMISSION NO. 79 - UTAH L. Do you admit that the Staff relied on the finite element analysis (Calculation No. 05996.02, SC-6, Finite Element Analysis of Canister Transfer Building, Stone and Webster)?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 80 - UTAH L. Do you admit that in developing foundation parameters for the CTB, the Staff did not considered the finite element analysis in determining whether the rigid mat assumption is appropriate for the actual pad size?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which foundation parameters are referred to as having been “developed” by the Staff.

REQUEST FOR ADMISSION NO. 81 - UTAH L. Do you admit that PFS used a shear key one-foot deep around the Canister Transfer Building to improve the shear resistance against sliding?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 82 - UTAH L. Do admit that the revised calculation (Calculation Number 05996-02, G(B)-13, S&W), estimates a factor of safety as low as 1.1?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 83 - UTAH L. Do you admit that the Staff relied on Calculation Number 05996-02, G(B)-13?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 84 - UTAH L. Do you admit that Calculation Number 05996-02, G(B)-13 relies on the passive resistance behind the 1-foot shear key to develop the resisting forces against sliding?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 85 - UTAH L. Do you admit that the Staff relied on Calculation No. 05996.02-G(P018)-2, Soil and Foundation Parameters for Dynamic Soil-Structure Interaction, 2000-Year Return Period Ground Motion, Geomatrix Consultants?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 86 - UTAH L. Do you admit that Calculation No. 05996.02-G(P018)-2, shows part of the shear strength has already been mobilized due to the free-field wave propagation?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which structure's shear strength is referred to herein, or what are the conditions or events that are assumed to be present or to have occurred, to have "already" mobilized part of the structure's shear strength.

REQUEST FOR ADMISSION NO. 87 - UTAH L. Do you admit that the full soil shear strength is not available to resist the inertia load of the structure?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what conditions or events are assumed to be present or to have occurred so as to preclude the full soil shear strength from being available to resist the inertia load of the structure.

REQUEST FOR ADMISSION NO. 88 - UTAH L. Do you admit that a shear strength value of 1.8 ksf was used in Calculation Number 05996-02, G(P018)-2?

STAFF RESPONSE. The Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST FOR ADMISSION NO. 89 - UTAH L. Do you admit that the shear strength value of 1.8 ksf does not account for mobilized shear strength?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what conditions or events are assumed to be present or to have occurred under this scenario.

REQUEST FOR ADMISSION NO. 90 - UTAH L. Do you admit that passive soil pressure is acting on one side of the shear key?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what conditions or events are assumed to be present or to have occurred under this scenario.

REQUEST FOR ADMISSION NO. 91 - UTAH L. Do you admit that static seismic soil pressure is acting on the other side of the shear key and mat?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what conditions or events are assumed to be present or to have occurred under this scenario. Further, the phrase “static seismic soil pressure” is meaningless; and it is unclear what is meant by the phrase, “the other side of the shear key and mat.”

REQUEST FOR ADMISSION NO. 92 - UTAH L. Do you admit that for stability analysis, passive soil pressure has not been used?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which stability analysis is referred to herein.

REQUEST FOR ADMISSION NO. 93 - UTAH L. Do you admit that the Staff has not considered static and seismic soil pressure on the other side of the mat and sheer [sic] key?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what the phrase “static seismic soil pressure” is meaningless; and it is unclear what is meant by the phrase, “the other side of the mat and sheer [sic] key.”

REQUEST FOR ADMISSION NO. 94 - UTAH L. Do admit that the soil behind the face of the mat has low overburden pressure?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what

is meant by the phrase, “soil behind the face of the mat.” Further, the term “low” is undefined, and it is unclear what soil conditions, characteristics, quantity, and volume are assumed to be present.

REQUEST FOR ADMISSION NO. 95 - UTAH L. Do you admit that the passive resistance will actually develop behind the key on the inner side of the mat where the overburden of the building confines the soil?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the phrase, “behind the key on the inner side of the mat,” or which area is referred to in the phrase, “where the overburden of the building confines the soil.”

REQUEST FOR ADMISSION NO. 96 - UTAH L. Do you admit that the passive resistance under the mat mobilizes the passive zone and develops vertical loads acting locally under the mat?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the phrase, “passive resistance under the mat.”

REQUEST FOR ADMISSION NO. 97 - UTAH L. Do you admit that the Staff did not consider the passive soil and its reaction under the mat in the stability analysis of the CTB and design of the mat?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear what is meant by the phrase, “the passive soil,” or which “mat” is referred to herein.

REQUEST FOR ADMISSION NO. 98 - UTAH L. Do you admit that the seismic loads used in the SER do not consider the coupling between the horizontal directions?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which seismic loads or which structures are referred to herein.

REQUEST FOR ADMISSION NO. 99 - UTAH L. Do you admit that the Staff relied on the overturning analysis (Calculation Number 05996-02, G (B)-13, S&W)?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which portion of the Staff's evaluation is the subject of this request (i.e., reliance upon the calculation for what purpose?).

REQUEST FOR ADMISSION NO. 100 - UTAH L. Do you admit that the overturning analysis calculated a factor of safety of 1.13?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which "overturning analysis" is referred to herein.

REQUEST FOR ADMISSION NO. 101 - UTAH L. Do you admit that in calculating the resisting moment, the Staff assumed the mass center of the building is at the center of the mat?

STAFF RESPONSE. The Staff objects to this request on the grounds that it (a) is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence, and (b) is overly vague and ambiguous in that it is unclear which "calculation" by the Staff is referred to herein.

B. Document Requests - Contention Utah L

DOCUMENT REQUEST NO. 1 - UTAH L: Please produce all documents referenced or relied upon in answering all of the above Requests for Admission.

STAFF RESPONSE. See Objection No. 8, *supra* at 5. Notwithstanding this objection, documents in response to this request will be provided or identified, to the extent that they are not (a) otherwise publicly available or (b) privileged or exempt from disclosure under 10 C.F.R. § 2.790.

DOCUMENT REQUEST NO. 2 - UTAH L: Please produce all documents that the Staff relied on in developing and reaching its conclusions in SER Section 2.1.6.1, Basic Geologic and Seismic Information.

STAFF RESPONSE. See Objection No. 8, *supra* at 5. Notwithstanding this objection, documents in response to this request will be provided or identified, to the extent that they are within the scope of Contention Utah L and are not (a) otherwise publicly available or (b) privileged or exempt from disclosure under 10 C.F.R. § 2.790.

DOCUMENT REQUEST NO. 3 - UTAH L: Please produce all documents that the Staff relied on in developing and reaching its conclusions in SER Section 2.1.6.2, Ground Vibration and Exemption Request.

STAFF RESPONSE. See Objection No. 8, *supra* at 5. Further, § 2.1.6.2 of the Staff's Safety Evaluation Report primarily discusses the Applicant's probabilistic seismic hazard analysis ("PSHA") and seismic exemption request, and the Staff's evaluation thereof; accordingly, to the extent that this request seeks the production of documents concerning such matters, the Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence. Notwithstanding these objections, however, documents in response to this request will be provided or identified, to the extent that they are within the scope of Contention Utah L and are not (a) otherwise publicly available or (b) privileged or exempt from disclosure under 10 C.F.R. § 2.790.

DOCUMENT REQUEST NO. 4 - UTAH L: Please produce all documents that the Staff relied on in developing and reaching its conclusions in SER Section 3.1.6.3, [sic] Surface Faulting.

STAFF RESPONSE. See Objection No. 8, *supra* at 5. Notwithstanding this objection, documents in response to this request will be provided or identified, to the extent that they are within the scope of Contention Utah L and are not (a) otherwise publicly available or (b) privileged or exempt from disclosure under 10 C.F.R. § 2.790.

DOCUMENT REQUEST NO. 5 - UTAH L: Please produce all documents that the Staff relied on in developing and reaching its conclusions in SER Section 2.1.6.4.

STAFF RESPONSE. See Objection No. 8, *supra* at 5. Further, § 2.1.6.4 of the Staff's Safety Evaluation Report includes a discussion of various issues that are beyond the scope of issues raised in Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence; accordingly, the Staff objects to this request to the extent that it concerns matters outside the scope of Contention Utah L. Notwithstanding these objections, however, documents in response to this request will be provided or identified, to the extent that they are within the scope of Contention Utah L and are not (a) otherwise publicly available or (b) privileged or exempt from disclosure under 10 C.F.R. § 2.790.

DOCUMENT REQUEST NO. 6 - UTAH L: The SER at 2-49 states "[i]ndependent calculations were performed by the staff using a procedure suggested by Meyerhof (1956, 1965) to determine the SPT values (*N*) or CPT tip resistance values (*Q*) that are required to satisfy a safety factor of 3.0 against bearing failure under the cask-pad bearing pressure of 1.94 ksf."

Please produce all documents relating to or relied upon for the above referenced independent calculations.

STAFF RESPONSE. See Objection No. 8, *supra* at 5. Further, the Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

DOCUMENT REQUEST NO. 7 - UTAH L: The SER at 2-49, states:
“... the requirement that the soil-cement subgrade extend to at least 4 feet from the edge of each pad, which was determined by NRC staff through a consideration of the minimum cross-sectional area of soil-cement required to prevent sliding of a storage pad.”

Please produce all documents relating to or relied upon for the above referenced requirement.

STAFF RESPONSE. See Objection No. 8, *supra* at 5. Further, the Staff objects to this request on the grounds that it is outside the scope of Contention Utah L, and is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence.

Respectfully submitted,

Sherwin E. Turk/***RA***/
Counsel for NRC Staff

Dated at Rockville, Maryland
this 7th day of December 2000

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
PRIVATE FUEL STORAGE, L.L.C.) Docket No. 72-22-ISFSI
)
(Independent Spent Fuel)
Storage Installation))

AFFIDAVIT OF JOHN STAMATAKOS

COUNTY OF BEXAR)
) SS:
STATE OF TEXAS)

John Stamatakos, having first been duly sworn, does hereby state as follows:

1. I am employed as a Senior Research Scientist at the Center for Nuclear Waste Regulatory Analysis (CNWRA), which is division of the Southwest Research Institute (SwRI), in San Antonio, Texas. I am providing this affidavit under a technical assistance contract between the NRC Staff and SwRI. A statement of my professional qualifications is attached hereto.

2. I have reviewed the foregoing "NRC Staff's Objections and Responses to the 'State of Utah's Tenth Set of Discovery Requests Directed to the NRC Staff,' Concerning Contention Utah L," and verify that they are true and correct to the best of my knowledge, information and belief.

John Stamatakos

Sworn to before me this
7th day of December 2000

Notary Public

My commission expires: _____

JOHN STAMATAKOS
Senior Research Scientist
Center for Nuclear Waste Regulatory Analyses
Southwest Research Institute

B.S., Geology, Franklin and Marshall College, Lancaster, Pennsylvania, 1981
M.S., Geology, Lehigh University, Bethlehem, Pennsylvania, 1988
Ph.D., Geology, Lehigh University, Bethlehem, Pennsylvania, 1990

Dr. Stamatakos is a structural geologist and geophysicist with international research experience in regional and global tectonics. Dr. Stamatakos has conducted research on a range of topics including paleomagnetism, neotectonics, kinematics of fault block rotations in strike-slip, normal, and thrust fault systems, effects of internal strain on the magnetic properties of deformed rocks, evolution of curvature in arcuate mountain belts, and age and sequence of deformation in folded and faulted mountain belts. This research has focused on the northern and central Appalachians in the eastern United States and Canada, the Hercynian mountains in Germany and northern Spain, the Rocky Mountains and Basin and Range in the western United States, and the northern Cordilleran Mountains in Alaska. Other strengths include numerical modeling of deformation, magnetostratigraphy, rock magnetism, and exploration geophysics.

As a Research Scientist in the Center for Nuclear Waste Regulatory Analyses, Dr. Stamatakos is a Principal Investigator for structural deformation and seismicity, including tectonics and neotectonics research. Tectonics research at CNWRA currently includes compiling a tectonics Geographic Information System (GIS) database, field analyses of the structural and tectonic elements of the Basin and Range province in southwestern United States, evaluation of seismic and faulting hazards at nuclear facilities, and the development of tectonic models for the region surrounding the proposed high-level nuclear waste repository at Yucca Mountain, Nevada. These investigations, sponsored by the U.S. Nuclear Regulatory Commission, currently support development of the tectonic framework for evaluation of risk of earthquakes and volcanic activity, and the effects of structures and tectonic processes on groundwater flow in the region surrounding Yucca Mountain.

Prior to coming to CNWRA, Dr. Stamatakos held positions as a visiting faculty at the University of Michigan and as a postdoctoral fellow at the Eidgenössische Technische Hochschule (ETH) in Zurich, Switzerland. At the University of Michigan, Dr. Stamatakos taught courses in field mapping, structural geology, geophysics, and tectonics.

Dr. Stamatakos has written or collaborated on nearly 50 papers and reports on structural geology, tectonics, and geophysics. He has made presentations at international conferences in the U.S., Canada, and Europe and has won an outstanding paper award from the American Geophysical Union. Dr. Stamatakos is associate editor of the Geological Society of America Bulletin, GP Editor for EOS of the American Geophysical Union, and is a regular reviewer of papers for the Journal of Geophysical Research, Earth and Planetary Science Letters, Reviews of Geophysics, Journal of Structural Geology, Physics of the Earth and Planetary Sciences, and Geophysical Research Letters as well as grant proposals for the National Science Foundation.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
PRIVATE FUEL STORAGE L.L.C.)	Docket No. 72-22-ISFSI
)	
(Independent Spent)	
Fuel Storage Installation))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S OBJECTIONS AND RESPONSES TO THE 'STATE OF UTAH'S TENTH SET OF DISCOVERY REQUESTS DIRECTED TO THE NRC STAFF,' CONCERNING CONTENTION UTAH L," in the above captioned proceeding have been served on the following through deposit in the NRC's internal mail system, with copies by electronic mail, as indicated by an asterisk, or by deposit in the U.S. Postal Service, as indicated by double asterisk, with copies by electronic mail this 7th day of December, 2000:

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