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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	)	Docket No. 72-22-ISFSI
PRIVATE FUEL STORAGE, LLC (Independent Spent Fuel Storage Installation)	)	ASLBP No. 97-732-02-ISFSI
	)	December 20, 1999

STATE OF UTAH'S MOTION TO COMPEL APPLICANT TO RESPOND TO STATE'S FIFTH SET OF DISCOVERY REQUESTS

Pursuant to 10 C.F.R. § 2.742, the State of Utah hereby moves the Board to compel the Applicant, Private Fuel Storage, LLC ("PFS") to answer certain requests for admissions propounded in State of Utah's Fifth Set of Discovery Requests Directed to the Applicant (December 1, 1999) ("State's Discovery Requests"). PFS filed its response on December 13, 1999, Applicant's Objections and Responses to State of Utah's Fifth Set of Discovery Requests ("PFS's Discovery Response"). This Motion to Compel relates to Utah Contention GG (Cask Stability) and is supported by the Declaration of Dr. Farhang Ostadan, attached hereto as Exhibit 1. Dr. Ostadan's resume is also attached hereto as Exhibit 2.

FACTUAL BACKGROUND

In its Discovery Requests, the State submitted 20 Requests for Admissions to PFS related to Contention GG - Failure to Demonstrate Cask-Pad Stability During Seismic Event for TranStor Cask. PFS refused to answer 17 of the 20 Requests for Admission

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PDR ADOCK

and only answered Requests for Admission Nos. 16, 18, and 20(a). In addition, PFS refused to answer portions of certain Document Requests.

The State has reviewed its Discovery Request and believes all the requests are relevant to Contention GG. However, Requests for Admission Nos. 1 through 9, 13 through 15, and 17 also are relevant to Contention L - Geotechnical. Following verbal discussions with counsel for PFS on December 16, 1999, the State agreed to resubmit Requests for Admissions Nos. 1 through 9, 13 through 15, and 17 under Contention L.

Also, on December 16th, the State informed counsel for PFS that Requests for Admission Nos. 10 through 12, 19, and 20(b) squarely address Contention GG and requested PFS to fully respond. Subsequently, the State sent a letter to PFS dated December 17,1999, explaining the grounds for the State's anticipated Motion to Compel. *See* Letter from Connie Nakahara to Paul Gaukler dated December 17, 1999, attached hereto as Exhibit 3. Counsel for PFS informed the State today that it will not answer the disputed requests.

ARGUMENT

I. THE COMMISSION'S STANDARD FOR DISCOVERY IS ONE OF BROAD RELEVANCE TO ADMITTED CONTENTIONS.

The scope of allowable discovery is set forth in 10 C.F.R. § 2.740(b)(1). Unless otherwise determined by the Presiding Officer, discovery extends to "any matter, not privileged, which is relevant to the subject matter involved in the proceeding." *Id.* The Commission gives its discovery rules the same "broad, liberal interpretation" that is given

to the discovery rules of the U.S. Federal Courts. *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-196, 7 AEC 457, 461-62 (1974). Discovery is considered relevant unless it is "palpable that the evidence sought can have no possible bearing upon the issues." *Id.*, 7 AEC at 462, *quoting Hercules Powder Co. v. Rohn & Haas Co.*, 3 F.R.D. 302, 304 (D. Del. 1943). A motion to compel need not seek information which would be admissible *per se* in an adjudicatory proceeding, and need only request information which "reasonably could lead to admissible evidence." *Safety Light Corp.* (Bloomsburg Site Decontamination), LBP-92-3A, 35 NRC 110, 111-12 (1992); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-82-102, 16 NRC 1597, 1601 (1982); *Commonwealth Edison, supra,* 7 AEC at 462.

II. THE DISCOVERY SOUGHT BY THE STATE IS RELEVANT TO THE ADMITTED BASES OF CONTENTION GG

Contention GG, as admitted, asserts that,

> The Applicant has failed to demonstrate that the TranStor storage casks and the pads will remain stable during a seismic event, and thus, the application does not satisfy 10 C.F.R. §§ 72.122(b)(2) and 72.128(a), in that Sierra Nuclear's consultant, Advent Engineering Services, Inc., used a nonconservative "nonsliding cask" tipover analysis that did not consider that the coefficient of friction may vary over the surface of the pad and did not consider the shift from the static case to the kinetic case when considering momentum of the moving casks.

Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP 98-7, App. A, 47 NRC 142, 251-252 (1998).

For purpose of discovery, the State need only show that its discovery requests are

relevant to an issue admitted for hearing or reasonably could lead to admissible evidence. *See* Section I above. As more fully described below, the five disputed Requests for Admissions are directly relevant or could lead to admissible evidence because they address how friction is applied between the cask and the pad or relate to the shift from the static case to the kinetic case. Thus, PFS must be ordered to answer the disputed requests.

Requests for Admission Nos. 10, 11, and 12 relate to the flexible behavior of the pad. There are at least two reasons why the Board should order PFS to answer these requests. First, the friction between the cask and pad is a function of pressure acting at the contact points. The flexible behavior of the foundation, or cask pad, will cause a nonuniform pressure at the contact points and directly impact the variation of friction across the pad. This relates directly to Contention GG. Second, using pad flexible behavior assumptions rather than rigid assumptions in the cask stability analysis could affect the projected motion of the pad, including the transition from the static case to the kinetic case, which also relates directly to Contention GG.

Request for Admission No. 19 relates to the amount of lift off between the pad and the cask. As discussed above, friction between the cask and pad is a function of pressure acting at the contact points. The overturning moment of the cask, or the tendency to uplift off the pad, will cause nonuniform pressure at the contact points. Thus, the lift off between the cask and pad will affect the application of friction on the pad.

Moreover, the lift off of the pad will introduce additional seismic loads which would directly affect the transition from the static case to the kinetic case.

Request for Admission No. 20(b) relates to cold bonding. Over time, cold bonding may create a bond between the cask and the pad and, therefore, may directly and significantly impact transition from the static case to the kinetic case. Accordingly, there is no basis for PFS's refusal to answer the Requests for Admissions on relevance grounds.

CONCLUSION

For the foregoing reasons, the Applicant's legal argument for not responding to the specified portions of the State's fifth set of discovery requests on Utah Contention GG, as describe above, is without merit. Therefore, PFS should be ordered to answer the five disputed requests for admission.

DATED this 20th day of December, 1999.

Respectfully submitted,

Denise Chancellor, Assistant Attorney General
Fred G Nelson, Assistant Attorney General
Connie Nakahara, Special Assistant Attorney General
Diane Curran, Special Assistant Attorney General
Laura Lockhart, Assistant Attorney General
Attorneys for State of Utah
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EXHIBIT 1

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	)	Docket No. 72-22-ISFSI
PRIVATE FUEL STORAGE, LLC (Independent Spent Fuel Storage Installation)	)	ASLBP No. 97-732-02-ISFSI
	)	December 20, 1999

DECLARATION OF DR. FARHANG OSTADAN

I, Dr. Farhang Ostadan, hereby declare under penalty of perjury and pursuant to 28 U.S.C. § 1746, that the statements contained in State of Utah's Motion to Compel Applicant to Respond to State's Fifth Set of Discovery Requests dated December 20, 1999, relating to Utah Contention GG, are true and correct to the best of my knowledge, information and belief.

Executed this 20th day of December, 1999.

By: Farhang Ostadan

Farhang Ostadan, PhD

EXHIBIT 2

FARHANG OSTADAN

2 Agnes St.
Oakland, CA 94618

510-547-6881

fostadan@aol.com

EDUCATION:

Ph.D., Civil Engineering
University of California, Berkeley, California, 1983.

SUMMARY:

15 Years: Extensive experience in dynamic analysis and seismic safety evaluation of above and underground structures and subsurface materials. Co-developed and implemented SASSI, a system for seismic soil-structure interaction analysis currently in use by the industry worldwide. Developed a method for liquefaction hazard analysis currently in use for critical facilities in the United States.

EXPERIENCE:

As Chief Soils Engineer with Bechtel, San Francisco office, Mr. Ostadan was responsible for providing guidance and support to all projects in the areas of earthquake resistant design, dynamic analysis of structures, soil-structure interaction (SSI) analysis, and seismic stability evaluation of subsurface materials. He has participated in seismic studies and reviews of numerous nuclear structures, offshore structures, underground structures and transportation structures; conducted technology transfer and training courses for engineers of various companies and institutes including Bechtel Corporation, Impell Corporation, General Electric Company, SEAONC, Westinghouse Corporation, Lawrence Livermore Laboratory, and Tennessee Valley Authority (TVA) in USA; Kraftwerk Union, AG West Germany; Tractional Inc., Belgium, Nuclear Data Corporation, Japan; Atomic Energy Organization, Iran.

Major project work includes seismic analysis and evaluation of responses for: the Diablo Canyon Nuclear Station as part of the Long-Term Seismic Program (LTSP); NRC/EPRI large scale seismic experiment in Lotung, Taiwan; large underground circular tunnel for Super Magnetic Energy Storage (SMES); General Electric ABWR and SBWR standard nuclear plants; Westinghouse AP600 standard nuclear plant; Tennessee Valley Authority (TVA) nuclear structures (Browns Ferry, Sequoyah, Watts Bar); several facilities involving liquid gas storage tanks; Heerma TTP offshore structure in the North Sea; seismic stability and liquefaction study at the ITP, RTF, and K-facilities in the Savannah River Site for the Department of Energy; several transportation projects including numerous Caltrans bridges in California; BART

extension lines including tunnel and aerial structures along the Dublin and San Francisco airport lines, Muni Metro Project, Downtown San Francisco; and Richmond Parkway Project in the San Francisco Bay area.

EXPERIENCE (cont'd)

1983 - 1985: Earthquake Engineering Technology Inc., San Ramon, California, As Project Engineer was responsible for development of a method for nonlinear seismic soil-structure interaction analysis in time domain.

1979 - 1983: University of California, Berkeley. As Research Assistant in the Civil Engineering Department, duties included development of the flexible volume method for dynamic SSI analysis of soil-pile-structure systems; member of SASSI development team.

PROFESSIONAL REGISTRATION:

Registered Civil Engineer, California

PROFESSIONAL ASSOCIATIONS:

Member of American Society of Civil Engineers
Member of EERI, Earthquake Engineering Research Institute
Member of Sigma Xi, The Scientific Honor Society, University of California, Berkeley

PUBLICATIONS

Technical Papers:

Lysmer, J., Tabatabaie-Raissi, Tajirian, F., Vahdani, S., Ostadan, F., SASSI - A System for Analysis of Soil-Structure Interaction, Report No. UCB/GT/81-02, Geotechnical Engineering Department of Civil Engineering, University of California, Berkeley, April 1981.

Ostadan, F., Dynamic Analysis of Soil-Pile-Structure Systems, Ph.D. Dissertation, University of California, Berkeley, 1983.

Ostadan, F., Udaka, T., Okumura, M., One Dimensional Seismic Response Study Using Different Soil Models, 8th SMIRT Conference, Brussels, Belgium, 1985.

Ostadan, F., Lysmer, J., Dynamic Analysis of Directly Loaded Structures on Pile Foundations, 8th SMIRT Conference, Brussels, Belgium, 1985.

Ostadan, F., Lysmer, J., Simplified Dynamic Analysis of Soil-Pile-Structure Systems, 5th International Symposium & Exhibition on Offshore Mechanics and Arctic Engineering, Tokyo, Japan, 1986.

Technical Papers (cont'd):

Ostadan, F., Tseng, Wen S., Lilhanand, K., Application of Flexible Volume Method to Soil-Structure Interaction Analysis of Flexible and Embedded Foundations, 9th SMIRT Conference, Lausanne, Switzerland, 1987.

Ostadan, F., Tseng, Wen S., Effect of Foundation Flexibility and Embedment on the Soil-Structure Interaction Response, 9th World Conference on Earthquake Engineering, Tokyo, Japan, August 1988.

Ostadan, F., Tseng, Wen S., Effect of Site Soil Properties on Seismic SSI Response of Deeply Embedded Structures, ASCE Foundations Engineering Congress, Evanston, Illinois, June 1989.

Ostadan, F., Tseng, W. S., Sawhney, P. S., Liu, A. S., The Effect of Embedment Depth on Seismic Response of a Nuclear Reactor Building Design, 10th SMIRT Conference, Los Angeles, California, August 1989.

Ostadan, F., Arango, I., Oberholtzer, G., Hsiu, F., Radially Loaded Circular Tunnel Structure, IX Panamerican Conference on Soil Mechanics and Foundation Engineering, Vina del Mar, Chile, August 1991.

Ostadan, F., Marrone, J., Arango, I., Litehiser, J., Liquefaction Hazard Evaluation: Methodology and Application, 3rd U.S. Conference on Lifeline Earthquake Engineering, Los Angeles, California, August 1991.

Ostadan, F., Hadjian, A. H., Tseng, W. S., Tang, Y. K., Tang, H. K., Parametric Evaluation of Intermediate SSI Solutions on Final Response, 11th SMIRT Conference, Tokyo, Japan, August 1991.

Ostadan, F., Arango, I., Litehiser, J., Marrone J., Liquefaction Hazard Evaluation, 11th SMIRT Conference, Tokyo, Japan, August 1991.

Ai-Shen Liu, G. W. Ehlert, R. S. Rajagopal, P. S. Sawhney, F. Ostadan, Seismic Design of ABWR and SBWR Standard Plants, ICONE2, San Francisco, California, March 1993.

R. S. Rajagopal, S. Sawhney, F. Ostadan, Seismic Considerations for the Standardized Advanced Light Water Reactor (ALWR) Plant Design, American Power Conference, Chicago, Illinois, April 1993.

I. Arango, F. Ostadan, Qualification of Liquefaction Hazard and Its Application to Risk Assessment and Urban Zoning, 5th International Conference on Seismic Zonation, Nice, France, October 1995.

F. Ostadan, S. Mamoon, I. Arango, Effect of Input Motion Characteristics on Seismic Ground Responses, 11th World Conference on Earthquake Engineering, Acapulco, Mexico, June 23-28, 1996

Technical Papers (cont'd):

I. Arango, F. Ostadan, M. Lewis, B. Gutierrez, Quantification of Seismic Liquefaction Risk, ASME PVP & ICVT Pressure Vessel and Piping Conference, Montreal, Quebec, Canada, July 21-26, 1996.

F. Ostadan, T. Liu, K. Gross, R. Orr, Design Soil Profiles for Seismic Analyses of AP600 Plant Standard Design, ASME PVP & ICVT Pressure Vessel and Piping Conference, Montreal, Quebec, Canada, July 21-26, 1996.

Computer Programs:

User's Manual, Theoretical Manual, and Verification Manual for Computer Program SASSI.

Installation and Validation Reports for Computer Program SASSI prepared for: EDS Nuclear Incorporated, California; Kraftwerk Union, AG, West Germany; Tractional Incorporated, Brussel, Belgium; Bechtel Corporation; General Electric Company; Westinghouse Corporation; Lawrence Livermore Laboratory.

User's Manual, Verification Manual, and Application Manual for Computer Program NANSSI (nonlinear analysis of soil-structure systems), Kozo Keikaku Engineering, Japan.

User's and Theoretical Manuals for Computer Program ASHLE (Advanced Seismic Hazard/Liquefaction Evaluation), Bechtel Corporation.

EXHIBIT 3

State of Utah
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF THE EXECUTIVE DIRECTOR

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December 17, 1999

Paul Gaukler, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, N.W.
Washington DC 20037-1128

Via E-mail and First Class Mail

RE: State's Proposed Motion to Compel PFS to Respond to State's Fifth Set of Discovery Requests (Contention GG)

Dear Mr. Gaukler:

We informed you on Thursday, December 16, 1999, that the State intended to file a Motion to Compel discovery on PFS's failure to respond to requests for admission nos. 10, 11, 12, 19, and 20(b) in which PFS argued that the requests for admissions were not relevant. Contrary to your position the State believes these requests for admission are directly relevant or reasonably calculated to lead to discovery of relevant material.

Requests for admission nos. 10, 11 and 12 relate to the flexible behavior of the cask pad. The flexible behavior of the cask pad may directly impact the application of friction on the pad and the shift from the static case to the kinetic case when considering momentum of the moving casks. Similarly, request for admission no. 19 concerns the amount of lift off which also may directly impact the application of friction and the shift from the static case to the kinetic case. The flexible behavior of the pad and the lift off between the cask and pad are important because friction between the cask and the pad is a function of pressure acting at the contact points and the flexibility of the foundation and the overturning moment of the cask (tendency to uplift) cause a nonuniform pressure at the contact points. Thus, the flexible behavior or the pad and the lift off may have significant effects on how friction varies across the pad.

Additionally, request for admission no. 20(b) which addresses the cold bonding directly relates to the friction between the cask and the pad.

Please call me or Denise Chancellor if you would like to further discuss these issues. We plan on filing the motion to compel discovery on late Monday, December 20, 1999.

Sincerely,

Connie S. Nakahara

c: Sherwin Turk, Esq., NRC, Office of General Counsel

CERTIFICATE OF SERVICE

I hereby certify that a copy of STATE OF UTAH'S MOTION TO COMPEL APPLICANT TO RESPOND TO STATE'S FIFTH SET OF DISCOVERY REQUESTS was served on the persons listed below by electronic mail (unless otherwise noted) with conforming copies by United States mail first class, this 20th day of December, 1999:

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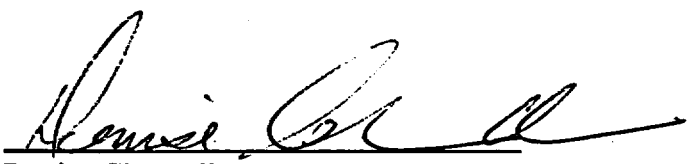

Denise Chancellor
Assistant Attorney General
State of Utah