

September 10, 2004

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED  
USNRC

Before the Atomic Safety and Licensing Board

September 13, 2004 (7:30AM)

In the Matter of )

PRIVATE FUEL STORAGE L.L.C. )

(Private Fuel Storage Facility) )

Docket No. 72-22

ASLBP No. 97-732-02-ISFSI

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

**JOINT MOTION TO ADMIT APPLICANT AND STAFF  
PRE-FILED TESTIMONY AND SUPPORTING REPORTS  
RE EFFECTS OF JET FUEL FIRE AND AIRCRAFT  
IMPACTS ON CANISTER TRANSFER BUILDING**

Applicant Private Fuel Storage, L.L.C. ("PFS"), the Nuclear Regulatory Commission Staff ("NRC Staff"), and the State of Utah ("State") file this joint motion to admit into evidence in this phase of the proceeding, without the sponsoring witnesses appearing and being subject to examination by the parties or the Board, the following pre-filed direct testimony and supporting reports:

A. On the subject of the effects of postulated jet fuel fires resulting from the impact of an F-16 aircraft on a waste storage cask at the PFSF:

1. Pre-filed testimony dated July 12, 2004 by Indresh Rampall entitled "Testimony of Indresh Rampall on Integrity of Spent Fuel Canister in the Event of a Fuel Fire Caused by an Aircraft Impact on a Spent Fuel Tank at the Private Fuel Storage Facility (Contention Utah K/Confederated Tribes B)."
2. Report by Indresh Rampall entitled "Evaluation of Spent Fuel Canister Integrity in the Event of a Fuel Fire Caused by an Aircraft Crash at the PFS Facility," Holtec Report HI-2033044 (Rev. 0) (July 8, 2003) marked as PFS Exhibit 247.
3. Pre-filed testimony dated July 12, 2004 by Christopher S. Bajwa, Carlos Lopez and Robert J. Kalan entitled "Testimony of Christopher S. Bajwa, Carlos Lopez and

Robert J. Kalan Concerning a Potential Jet Fuel Fire at the Proposed PFSF in an Accidental F-16 Crash Event. ”

4. Report by Christopher S. Bjawa entitled “NRC Staff’s Evaluation of Potential Jet Fuel Fire at the Proposed Private Fuel Storage Facility in an Accidental F-16 Crash Event” (May 11, 2004), marked as Staff Exhibit 98.
5. Report by Carlos Lopez and Robert J. Kalan entitled “Confirmatory Thermal Analyses of an Accidental F-16 Crash Event onto the Proposed Private Fuel Storage Facility (HI-STORM 100 Dry Cask Storage System)” (May 11, 2004), marked as Staff Exhibit 99.

B. On the subject of the effects on the integrity of the Canister Transfer Building at the PFSF of an impact by an F-16 aircraft:

1. Pre-filed testimony dated July 12, 2004 of Bruce E. Ebbeson entitled “Testimony of Bruce E. Ebbeson on Integrity of Canister Transfer Building at the Private Fuel Storage Facility in the Event of an Impact of an F-16 Aircraft (Contention Utah K/ Confederated Tribes B).”
2. Stone & Webster Report entitled “Evaluation of Aircraft Impact on the Canister Transfer Building, 59056-SC-1 (Rev. 0)”, dated July 7, 2003, marked as PFS Exhibit 248.
3. Stone & Webster Report entitled “Evaluation of Aircraft Impact on the Canister Transfer Building: Global Effects, 59056-SC-02 (Rev. 0)”, dated July 2, 2003, marked as PFS Exhibit 249.
4. Stone & Webster Report entitled “Perforation Analysis of Canister Transfer Building Walls, 59056-SC-03 (Rev. 0),” dated July 2, 2003, marked as PFS Exhibit 250.

5. Stone & Webster Report entitled "Evaluation of an F-16 Aircraft Impact on the Canister Transfer Building: Local Effects, 59056-SC-01 (Rev. 0)," dated July 2, 2003, marked as PFS Exhibit 251.
6. Stone & Webster Report entitled "Response to NRC Staff's Request for Additional Information Regarding Private Fuel Storage, LLC's Analysis of the Potential Consequences of an F-16 Aircraft Crashing into the Proposed Private Fuel Storage Facility," dated September 4, 2003, marked as PFS Exhibit 252.
7. Stone & Webster Report entitled "Supplemental Evaluation of Aircraft Impact - CTB Top Corner, 59056-SC-04 (Rev. 0)," dated September 2, 2003, marked as PFS Exhibit 253.
8. Stone & Webster Report entitled "Supplemental Evaluation of Aircraft Impact - CTB C Line Wall, 59056-SC-05 (Rev. 0)," dated September 2, 2003, marked as PFS Exhibit 254.
9. Stone & Webster Report entitled "Response to NRC Staff's Second Request for Additional Information Regarding Private Fuel Storage's Analysis of the Potential Consequences of an F-16 Aircraft Crashing into the Proposed Private Fuel Storage Facility and the Responses to the Staff's August 15, 2003 Request for Additional Information," dated December 9, 2003, marked as PFS Exhibit 255.
10. Stone & Webster Report entitled "Supplemental Evaluation of Aircraft Impact Canister Transfer Building :C Line Wall, 59056-SC-06 (Rev. 0)," dated December 10, 2003, marked as PFS Exhibit 256.
11. Pre-filed testimony dated July 12, 2004 of Gordon Bjorkman, Robert Shewmaker, and Gustavo Aramayo entitled "NRC Staff's Testimony of Gordon Bjorkman, Robert Shewmaker, and Gustavo Aramayo Concerning the Consequences of an Accidental F-16 Crash into the Canister Transfer Building at the Proposed PFS Facility."

12. Pre-filed rebuttal testimony dated July 29, 2004 of Gordon Bjorkman, Robert Shewmaker, and Gustavo Aramayo entitled "NRC Staff's Rebuttal Testimony of Gordon Bjorkman, Robert Shewmaker, and Gustavo Aramayo Concerning the NRC Staff's Canister Transfer Building Analysis."
13. Report by Gordon Bjorkman and Robert Shewmaker, dated May 11, 2004, entitled "NRC Staff's Evaluation of the Structural Consequences of an Accidental F-16 Aircraft Crash Event at the Proposed PFS Facility," marked as Staff Exhibit 66 (admitted into evidence on August 11, 2004).
14. Report by Gustavo Aramayo, dated May 11, 2004, entitled "Confirmatory Analysis of an Accidental F-16 Crash onto the Canister Transfer Building at the Proposed PFS Facility," marked as Staff Exhibit 70.

This motion is subject to the provisions of the "Stipulation on Jet Fuel Fire Testimony," attached as Exhibit A hereto, and the "Stipulation on Canister Transfer Building Testimony," attached as Exhibit B hereto, the terms of which are incorporated by reference herein.

Respectfully submitted,



---

Jay E. Silberg  
Paul A. Gaukler  
Matias F. Travieso-Diaz  
SHAW PITTMAN LLP  
2300 N Street, N.W.  
Washington, D.C. 20037-1128  
(202) 663-8000  
Counsel for Private Fuel Storage, L.L.C.

September 10, 2004

**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
	)	
(Private Fuel Storage Facility)	)	ASLBP No. 97-732-02-ISFSI

**CERTIFICATE OF SERVICE**

I hereby certify that copies of the "Joint Motion to Admit Applicant and Staff Pre-Filed Testimony and Supporting Reports re Effects of Jet Fuel Fire and Aircraft Impacts on Canister Transfer Building" and Exhibits A and B thereto were served on the persons listed below (unless otherwise noted) by e-mail with conforming copies by U.S. mail, first class, postage prepaid, this 10<sup>th</sup> day of September 2004.

Michael C. Farrar, Esq., Chairman  
Administrative Judge  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
e-mail: [mcf@nrc.gov](mailto:mcf@nrc.gov)

Dr. Paul B. Abramson  
Administrative Judge  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
e-mail: [pba@nrc.gov](mailto:pba@nrc.gov)

Dr. Peter S. Lam  
Administrative Judge  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
e-mail: [PSL@nrc.gov](mailto:PSL@nrc.gov)

\*Office of Commission Appellate  
Adjudication  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Office of the Secretary  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
Attention: Rulemakings and Adjudications  
Staff  
e-mail: [hearingdocket@nrc.gov](mailto:hearingdocket@nrc.gov)  
(Original and two copies)

\* Adjudicatory File  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Sherwin E. Turk, Esq.  
Laura Zaccari, Esq.  
Office of the General Counsel  
Mail Stop O-15 B18  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
e-mail: [pfscase@nrc.gov](mailto:pfscase@nrc.gov)

John Paul Kennedy, Sr., Esq.  
David W. Tufts, Esq.  
Confederated Tribes of the Goshute  
Reservation and David Pete  
Durham Jones & Pinegar  
111 East Broadway, Suite 900  
Salt Lake City, Utah 84105  
e-mail: [dtufts@djplaw.com](mailto:dtufts@djplaw.com)

Diane Curran, Esq.  
Harmon, Curran, Spielberg &  
Eisenberg, L.L.P.  
1726 M Street, N.W., Suite 600  
Washington, D.C. 20036  
e-mail: [dcurran@harmoncurran.com](mailto:dcurran@harmoncurran.com)

Paul EchoHawk, Esq.  
Larry EchoHawk, Esq.  
Mark EchoHawk, Esq.  
EchoHawk PLLC  
P.O. Box 6119  
Pocatello, ID 83205-6119  
e-mail: [paul@echohawk.com](mailto:paul@echohawk.com)

Denise Chancellor, Esq.  
Assistant Attorney General  
Utah Attorney General's Office  
160 East 300 South, 5<sup>th</sup> Floor  
P.O. Box 140873  
Salt Lake City, Utah 84114-0873  
e-mail: [dchancellor@utah.gov](mailto:dchancellor@utah.gov)

Joro Walker, Esq.  
Land and Water Fund of the Rockies  
1473 South 1100 East  
Suite F  
Salt Lake City, UT 84105  
e-mail: [lawfund@inconnect.com](mailto:lawfund@inconnect.com)

Tim Vollmann, Esq.  
Skull Valley Band of Goshute Indians  
3301-R Coors Road, N.W.  
Suite 302  
Albuquerque, NM 87120  
e-mail: [tvollmann@hotmail.com](mailto:tvollmann@hotmail.com)

\* By U.S. mail only

  
Paul A. Gaukler

## EXHIBIT A

September 10, 2004

*In the matter of* Private Fuel Storage, L.L.C.  
(Independent Spent Fuel Storage Installation)

Docket No. 72-22-ISFSI (ASLBP No. 97-732-02-ISFSI)

### STIPULATION ON JET FUEL FIRE TESTIMONY

This Stipulation, entered into on the last date herein written, is between and among the Applicant, Private Fuel Storage L.L.C. ("Applicant" or "PFS"), the Intervenor, State of Utah ("State") and the Nuclear Regulatory Commission Staff ("NRC Staff"), who are referred to collectively as the "parties."

WHEREAS, the Licensing Board admitted Contention Utah K/Confederated Tribes B, (*Inadequate Consideration of Credible Accidents*) filed by the State on November 23, 1997. LBP-98-7, 47 NRC 142 (1998).

WHEREAS, after an adjudicatory hearing held between April 8 and July 3, 2002, the Licensing Board determined that the probability of a credible accident from F-16s and ordnance at the PFS site exceeds the Commission's one-in-a million criterion by a fourfold margin and that the Applicant must demonstrate that the facility design is such that the accident's consequences are not significant. LBP-03-04, 57 NRC 69, 89 (2003).

WHEREAS, as part of its analysis of the consequences of an F-16 aircraft impact into the proposed PFS site, the Applicant submitted to the NRC Staff "Evaluation of Spent Fuel Canister Integrity in the Event of a Fuel Fire Caused by an Aircraft Crash at the PFS Facility" Holtec Report HI-2033044 (Rev. 0) (July 8, 2003) in which it evaluated the effects of fire from jet fuel pooled outside the storage cask. Hereafter referred to at "PFS Jet Fuel Fire Report."

WHEREAS, the Staff evaluated the PFS Jet Fuel Fire Report and found it acceptable. *See* "NRC Staff's Evaluation of Potential Jet Fuel Fire at the Proposed Private Fuel Storage Facility in an Accidental F-16 Crash Event" (May 11, 2004) by Christopher S. Bjawa

WHEREAS, the NRC Staff also conducted "Confirmatory Thermal Analyses of an Accidental F-16 Crash Event onto the Proposed Private Fuel Storage Facility (HI-STORM 100 Dry Cask Storage System)" by Lopez and Kalan (May 11, 2004) in which it evaluated the effects of a fire of one hour duration from 45 gallons of jet fuel in the annular region of the cask.

WHEREAS, the Licensing Board, initially viewing the State's aircraft crash risk contention as involving two parts – "probability" and "consequences" – had scheduled a hearing on the radiological consequences of a cask breach but it later determined the scope of the contention to consist of three parts: (1) the probability of a crash into the site (decided in LBP-03-04); (2) the probability that such a crash will rupture a cask; and (3) the dose consequences of the resulting radiological release. Memorandum Concerning Schedule (April 15, 2004) at 2 and n. 1. The Board determined that the

upcoming hearing would be limited to the probability of cask breach and deferred any hearing on dose consequences. Id. at 2-4.

WHEREAS, the Licensing Board is conducting the adjudication of the second phase of the Utah K proceeding, referred to as cask breach probability proceeding, during the period August 9 to 26 and September 12 to 15, 2004.

NOW THEREFORE, the parties agree as follows:

The Applicant has prepared pre-filed direct testimony by Indresh Rampall in the cask breach probability proceeding on jet fuel fires, including the introduction of Dr. Rampall's report "Evaluation of Spent Fuel Canister Integrity in the Event of a Fuel Fire Caused by an Aircraft Crash at the PFS Facility," Holtec Report HI-2033044 (Rev. 0) (July 8, 2003) marked as PFS Exhibit 247.

The NRC Staff has prepared pre-filed direct testimony by Christopher S. Bajwa, Carlos Lopez and Robert J. Kalan, in the cask breach probability proceeding on jet fuel fires, including the introduction of the following reports:

- (1) "NRC Staff's Evaluation of Potential Jet Fuel Fire at the Proposed Private Fuel Storage Facility in an Accidental F-16 Crash Event" (May 11, 2004) by Christopher S. Bajwa and marked as Staff Exhibit 98.
- (2) "Confirmatory Thermal Analyses of an Accidental F-16 Crash Event onto the Proposed Private Fuel Storage Facility (HI-STORM 100 Dry Cask Storage System)" by Lopez and Kalan (May 11, 2004) and marked as Staff Exhibit 99.

The State of Utah has not prepared a jet fuel fire report.

The parties agree that if witness Rampall for the Applicant, PFS, and witnesses Bajwa, Lopez and Kalan for the Staff were to testify in the cask breach probability proceeding, they would adopt their pre-filed jet fuel fire testimony and associated reports.

The parties acknowledge the foregoing considerations with respect to the three jet fuel reports (PFS Exhibit 247 and Staff Exhibits 98 and 99) and testimony relating thereto:

- The three reports are limited to the effects of a jet fuel fire from the crash of an F-16 aircraft without ordnance.
- The three reports do not expressly analyze any structural damage to the overpack or multi-purpose canister (MPC) from the impact of an F-16.
- The three reports consider a generic HI-STORM 100 cask and do not analyze any potential material, welding, or fabrication imperfections or defects in the cask or MPC.
- The three analyses are limited to the effects of a fire resulting from jet fuel released after an F-16 impact into a cask.



- The three reports do not expressly analyze any combined or accumulative effects of a jet fuel fire with any structural damage to a cask or MPC caused by an F-16 or ordnance impact into a cask.

Based on the foregoing considerations, and acknowledgment by PFS and the Staff that the State reserves and does not waive any right it may have to address or challenge radiological or criticality consequences from the combined or accumulative effects of a jet fuel fire with any structural damage to a cask or MPC in any later proceedings, petitions to the Commission, or other appeals, the State of Utah does not oppose the pre-filed jet fuel fire testimony and associated reports of PFS witness Rampall and Staff witnesses Bjawa, Lopez and Kalan being entered into the record for the cask breach probability phase of the proceeding without cross-examination of the sponsoring witness.

**EXHIBIT B**

September 10, 2004

*In the matter of Private Fuel Storage, LLC  
(Independent Spent Fuel Storage Installation)*

Docket No. 72-22-ISFSI (ASLBP No. 97-732-02-ISFSI)

**STIPULATION ON CANISTER TRANSFER BUILDING TESTIMONY**

The Licensing Board is conducting the adjudication of the second phase of the Contention Utah K/ Confederated Tribes B proceeding, (cask breach probability proceeding), during the period August 9 to 26 and September 12 to 15, 2004.

The Applicant, Private Fuel Storage ("PFS"), has prepared the following pre-filed direct testimony and supporting reports (hereafter "PFS pre-filed CTB testimony"):

Testimony of Bruce E. Ebbeson On Integrity of Canister Transfer Building at the Private Fuel Storage Facility In the Event of an Impact of an F-16 Aircraft (Contention Utah K/ Confederated Tribes B), dated July 12, 2004.

PFS Exhibit 248, *Evaluation of Aircraft Impact on the Canister Transfer Building*, 59056-SC-1 (Rev. 0), dated July 7, 2003.

PFS Exhibit 249, *Evaluation of Aircraft Impact on the Canister Transfer Building: Global Effects*, 59056-SC-02 (Rev. 0), dated July 2, 2003.

PFS Exhibit 250, *Perforation Analysis of Canister Transfer Building*, 59056-SC-03 (Rev. 0), dated July 2, 2003.

PFS Exhibit 251, *Evaluation of Aircraft Impact on the Canister Transfer Building: Local Effects*, 59056-SC-01 (Rev. 0), dated July 2, 2003.

PFS Exhibit 252, *Response to NRC Staff's Request for Additional Information Regarding Private Fuel Storage, LLC's Analysis of the Potential Consequences of an F-16 Aircraft Crashing Into the Proposed Private Fuel Storage Facility*, dated September 4, 2003.

PFS Exhibit 253, *Supplemental Evaluation of Aircraft Impact - CTB Top Corner*, 59056-SC-04 (Rev. 0), dated September 2, 2003.

PFS Exhibit 254, *Supplemental Evaluation of Aircraft Impact - CTB C Line Wall*, 59056-SC-05 (Rev. 0), dated September 2, 2003.

PFS Exhibit 255, *Response to NRC staff's Second Request for Additional Information*

*Regarding Private Fuel Storage's Analysis of the Potential Consequences of an F-16 Aircraft Crashing Into the Proposed Private Fuel Storage Facility and the Responses to the Staff's August 15, 2003 Request for Additional Information, dated December 9, 2003.*

*PFS Exhibit 256, Supplemental Evaluation of Aircraft Impact Canister Transfer Building C Line Wall, 59056-SC-06 (Rev. 0), dated December 10, 2003.*

The NRC Staff has prepared the following pre-filed direct and rebuttal testimony and supporting reports (hereafter "Staff pre-filed CTB testimony"):

*NRC Staff's Testimony of Gordon Bjorkman, Robert Shewmaker, and Gustavo Aramayo Concerning the Consequences of an Accidental F-16 Crash Into the Canister Transfer Building at the Proposed PFS Facility, dated July 12, 2004.*

*NRC Staff's Rebuttal Testimony of Gordon Bjorkman, Robert Shewmaker, and Gustavo Aramayo Concerning the NRC Staff's Canister Transfer Building Analysis, dated July 29, 2004.*

*Staff Exhibit 66 (admitted August 11, 2004), NRC Staff's Evaluation of the Structural Consequences of an Accidental F-16 Aircraft Crash Event at the Proposed PFS Facility, dated May 11, 2004.*

*Staff Exhibit 70, Confirmatory Analysis of an Accidental F-16 Crash Onto the Canister Transfer Building at the Proposed PFS Facility, dated May 11, 2004.*

NOW THEREFORE, the parties State of Utah, Private Fuel Storage, LLC and NRC Staff, jointly and individually, agree as follows:

1. The parties agree that if witness Ebberson for the Applicant, PFS, and witnesses Bjorkman, Shewmaker and Aramayo for the Staff were to testify in the cask breach probability proceeding, they would adopt their pre-filed CTB testimony.
2. The State does not agree with the PFS or Staff pre-filed CTB testimony.
3. Both PFS and the Staff agree that the State, by entering into this Stipulation, has not waived any right it may have to use the PFS pre-filed CTB testimony, or Staff pre-filed CTB testimony, in this proceeding for the impeachment of any witness, or for any other purpose, in accordance with the rules of this proceeding.
4. The State agrees that witness Ebbeson for the Applicant, and witnesses Bjorkman, Shewmaker, and Aramayo for the Staff need not appear to adopt

their pre-filed CTB testimony.

Based on the foregoing considerations, the parties agree that the pre-filed CTB testimony of PFS witness Ebberson, and Staff witnesses Bjorkman, Shewmaker, and Aramayo should be entered into the record.