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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USNRC

Before the Atomic Safety and Licensing Board

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of)
)
PRIVATE FUEL STORAGE L.L.C.) Docket No. 72-22
)
(Private Fuel Storage Facility)) ASLBP No. 97-732-02-ISFSI

APPLICANT'S MOTION IN LIMINE TO PRECLUDE NEW STATE OF UTAH
TESTIMONY REGARDING JETTISONED ORDNANCE
IMPACT PROBABILITY

In the pre-hearing conference of May 18, 2004, the Atomic Safety and Licensing Board approved of the early filing of motions in limine going to whether the material in the parties' expert reports fell within the scope of the upcoming evidentiary hearing. See Memorandum of Conference Call (June 2, 2004); Tr. at 14,891-92 (Farrar, J.). Pursuant to 10 C.F.R. §§ 2.730 and 2.743(c), Applicant Private Fuel Storage, L.L.C. ("PFS") hereby files this motion in limine to preclude the State of Utah ("State") from offering new testimony on jettisoned ordnance impact probabilities at the upcoming aircraft crash consequences hearing. The State's expert report on aircraft and jettisoned ordnance accident consequences, written by Michael Thorne and dated May 2004,¹ asserts in part that the probability of a jettisoned ordnance impact at the Private Fuel Storage Facility ("PFSF") is greater than that found by the Board in its March 2003 Partial Initial Decision on "credible accidents."² The State's expert report on jettisoned ordnance impact

¹ M.C. Thorne, "Ordnance Impacts and Aircraft Crashes at a Proposed Private Fuel Storage Facility for Spent Nuclear Fuel in Utah: Summary of Probability Estimates," MTA/P0014/2004-1: Issue 2 (May 2004) ("Thorne Report").

² Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-03-4, 57 NRC 69, review held in abeyance, CLI-03-5, 57 NRC 279 (2003) ("Utah K PID").

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consequences, written by Louis McDonald and dated September 2003,³ provides information related to ordnance that could only be used to challenge the Board's jettisoned ordnance impact probability findings. PFS moves to preclude the State from offering new testimony on jettisoned ordnance impact probability at the PFSF on the ground that the issue was previously litigated between PFS and the State on this license application, with the State having previously raised similar arguments that were rejected by the Board. Thus any offering of new testimony on this issue is barred as res judicata.

I. BACKGROUND

On March 10, 2003, the Atomic Safety and Licensing Board ("Board") issued its Utah K PID, which concerned "the chance [i.e., probability] that military aircraft operations in Utah's West Desert might pose a risk to the [PFSF]." LBP-03-4, 57 NRC at 76-77.⁴ In rendering its decision, the Board made specific findings regarding the probabilities of military aircraft crash impacts and jettisoned ordnance impacts at the PFSF. See id. at 122 (F-16s transiting Skull Valley), 125 (F-16s using the Moser Recovery), 126 (cargo aircraft flying to and from Michael Army Airfield), 127 (aircraft on the Utah Test and Training Range), 128 (direct impact by F-16s carrying ordnance), 131 (direct impact of jettisoned ordnance), 132 (hazard from nearby explosions of ordnance); see also id. at 225-29 (ordnance impacts).

With respect to the probability of direct impact of military ordnance jettisoned from F-16s, the Board found:

Based on the above inputs, we calculate the probability of jettisoned ordnance directly impacting the PFS facility as follows:

$$P = C \times N \times e \times A \div w$$

³ Lt. Col. Louis N. McDonald, III (USAF), "Evaluation of Military Ordnance Impacts at the Proposed Private Fuel Storage Site in Skull Valley, Utah" (Sept. 2003) ("McDonald Report").

⁴ The Board made no decision on and indeed excluded testimony on accident consequences, which will be the subject of the upcoming evidentiary proceeding this August. See LBP-03-4, 57 NRC at 135-44.

$$\begin{aligned}
&= 2.736 \times 10^{-8}/\text{mile} \times 587 \times 0.90 \times 0.08763 \text{ sq. miles} \div 6 \text{ miles} \\
&= 2.11 \times 10^{-7} \text{ per year}
\end{aligned}$$

Id. at 131.

In the formula above,

N represents the number of annual flights through Skull Valley carrying live and/or inert ordnance; C is the F-16 crash rate per mile; e is the percentage of crashes that leave the pilot in control of the aircraft and able to jettison the ordnance; A is the combined dimensions of the [canister transfer building] CTB and [cask] storage pad area; and w represents the width of the airway.

Id. at 128 (*italics in original*). The Board specifically found the formula “to be appropriate in estimating the probability of jettisoned ordnance directly impacting the facility.”

Id. at 130. The Board arrived at its calculated probability of 2.11×10^{-7} per year by making specific findings regarding the values for each of the variables (C , N , e , A , and w) in the formula. See id. at 130-31; see also id. at 131 (comparing PFS, State, NRC Staff, and Board calculations).

In September 2003, the State produced the report prepared by Lt. Col. McDonald, which made assertions regarding the numbers of pieces of ordnance carried by F-16 aircraft transiting Skull Valley, the number of sorties with live or full scale inert ordnance flown by the 388th Fighter Wing in FY02, and the numbers of pieces of different types of ordnance carried by the 419th FW on sorties during FY01 and FY02. McDonald Report at 6-8; id. Attachment 3.

On May 11, 2004, the State produced the report prepared by Dr. Thorne, which purports to calculate the probability that an aircraft crash or jettisoned military ordnance impact at the PFSF would lead to a loss of structural integrity of a spent fuel storage cask or the CTB, i.e., significant consequences. The report acknowledges that the Board calculated the probability of a jettisoned ordnance impact at the PFSF to be 2.11×10^{-7} per year. Thorne Report at 3. The report goes on, however, to assert that

when either 500 pound bombs or 2000 pound bombs are jettisoned, there are two objects falling that could penetrate the casks. If these two objects are treated as independent in terms of their probability of impacting the facility area, the total value of [probability] P (and P_{eff}) is increased to $2.11 \times 10^{-7} \times 2 = 4.22 \times 10^{-7}$ per year.

Id. at 4.

II. DISCUSSION

The State should be precluded from offering testimony on whether multiple pieces of ordnance jettisoned from an F-16 should be treated as independent in terms of their probabilities of impacting the PFSF so as to increase the calculated probability of a jettisoned ordnance impact at the facility, or any other testimony on the probability of jettisoned ordnance impacts (e.g., testimony concerning alleged new data on the annual number of sorties carrying ordnance through Skull Valley). Such testimony would be a direct challenge to the Board's previous finding, in the probability phase of this proceeding, regarding the probability of jettisoned ordnance impacts at the PFSF. The relitigation before the Board of the probability of a jettisoned ordnance impact is barred as res judicata.

A. Res Judicata Bars Challenges to Prior Board Findings

The doctrine of res judicata bars the relitigation in a later phase of a proceeding of an issue previously decided by a licensing board in an earlier phase. "[T]hose who have contested an issue shall be bound by the result of the contest, and . . . matters once tried shall be considered forever settled as between the parties." Alabama Power Co. (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210, 212-13, remanded on other grounds, CLI-74-12, 7 AEC 203 (1974) (quoting Baldwin v. Iowa State Traveling Men's Assoc., 283 U.S. 522, 525 (1931)).

[T]he doctrine [of res judicata or collateral estoppel] precludes the relitigation of issues of law or fact which have been finally adjudicated by a tribunal of competent jurisdiction in a proceeding involving the same parties or their privies. It is equally settled that collateral estoppel [or res judi-

cata] is as applicable in administrative adjudicatory proceedings as it is in the judicial arena.

Toledo Edison Co. (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), ALAB-378, 5 NRC 557, 561 (1977) (citations omitted).⁵

Thus, the NRC has barred as res judicata the relitigation, in a reactor operating license proceeding, of the same contention earlier litigated in the reactor's construction license proceeding by the same intervenor and the same license applicant. See Farley, ALAB-182, 7 AEC at 211, 216. "An operating license proceeding should not be utilized to rehash issues already ventilated and resolved at the construction permit stage." CLI-74-12, 7 AEC at 203.

It follows similarly that when one NRC proceeding is divided into two phases, an intervenor is not allowed to relitigate in the second phase an issue adequately explored in the first phase. See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-942, 32 NRC 395, 403 (1990) (prohibiting relitigation of emergency planning issues not materially different from those decided in earlier phase of reactor operating license proceeding).

Finally, it is well settled that the applicability of res judicata does not depend upon whether the first decision was correct; "it is enough that the tribunal had jurisdiction to render the decision." Davis-Besse, ALAB-378, 5 NRC at 563. Furthermore, res judicata "reaches previously adjudicated factual and legal questions alike." Id. at 564 n.7.

⁵ The difference between res judicata and collateral estoppel, that collateral estoppel does not require the identity of the parties to or the claims asserted in the two proceedings, see Farley, ALAB-182, 7 AEC at 212-13, is irrelevant here where the parties and the claims are identical.

B. The State's Reports Improperly Challenge the Board's Findings on the Jettisoned Ordnance Impact Probability at the PFSF

1. The Reports Attempt to Raise Issues Previously Decided by the Board

The Thorne Report asserts that a factor of two should be added on to the Board's probability calculation to reflect the asserted independence of the impacts of multiple pieces of ordnance jettisoned from a single F-16. See Thorne Report at 4. The report claims that if the releases of two pieces of ordnance (or multiple pieces carried on one rack on each of the aircraft's wings) result in substantially different trajectories (and hence different impact locations), then the two objects should be treated as independent. Id. The McDonald Report makes assertions concerning the number of pieces of ordnance carried by F-16s on sorties through Skull Valley and the annual number of sorties flown by F-16s with ordnance through the valley that could only be used to challenge the Board's jettisoned ordnance probability calculation. See McDonald Report at 6-8; id. Attachment 3.

The Thorne Report is clearly challenging the Board's findings regarding jettisoned ordnance impact probability. The Board approved a formula that it found to be "appropriate in estimating the probability of jettisoned ordnance directly impacting the facility." LBP-03-4, 57 NRC at 130. That formula contained no factor for the asserted effect of jettisoned pieces of ordnance from the same aircraft having independent trajectories or impact locations. While the McDonald Report does not assert an impact probability, it provides information that, if used by the State in jettisoned ordnance impact probability calculations, would also constitute a clear challenge to the Board's findings regarding jettisoned ordnance impact probability. Compare LBP-03-4, 57 NRC at 130-31 (making specific findings on the variables, including the annual number of sorties, used to calculate the ordnance impact probability).

Thus, the Thorne Report is, and any testimony relying on it that the State might offer would be, directly challenging the Board's previous adoption of the jettisoned ord-

nance impact probability formula. Any new State testimony on jettisoned ordnance impact probability relying on information from the McDonald Report would similarly be challenging the Board's findings regarding the annual number of F-16 sorties carrying ordnance through Skull Valley and the ultimate ordnance impact probability. Indeed, any new State testimony on jettisoned ordnance impact probability based on information from the Thorne or McDonald Reports would be similar to arguments previously raised by the State in the 2002 accident probability proceeding that were rejected by the Board. Therefore, because any new testimony would be challenging Board findings on a matter that was previously litigated between PFS and the State in an earlier phase of this proceeding, any offer of such testimony should be barred. See Seabrook, ALAB-942, 32 NRC at 403.

2. Res Judicata Applies Regardless of the Correctness of the Previous Decision and Moreover Jettisoned Ordinance Impact Probability Was Fully Explored In the Previous Probability Proceeding

As discussed above, res judicata bars the relitigation of the jettisoned ordnance impact probability regardless of whether the Board's prior decision was correct. Davis-Besse, ALAB-378, 5 NRC at 563. Nevertheless, there is no reason here to believe that the Board's decision was incorrect or that the jettisoned ordnance impact probability issue was not fully aired.

The State presented testimony at the 2002 evidentiary hearing on the formula and the values for the variables used to calculate jettisoned ordnance impact probability. Some of that testimony was similar to the assertions made in the Thorne and McDonald Reports. The testimony, however, was rejected by the Board in the course of rendering its decision. As discussed by the Board in its Utah K PID, the State proposed a different formula for calculating the jettisoned ordnance impact probability. LBP-03-4, 57 NRC at 128. It also proposed the use of a different effective area for the facility in calculating the impact probability based on the State's assertions regarding the trajectories that jettisoned ordnance would follow before hitting the facility and an asserted delay that would occur

between the releases of multiple pieces of ordnance or ordnance racks. See id. at 129-30; State of Utah's Prefiled Testimony of Dr. Marvin Resnikoff Regarding Contention Utah K/Confederated Tribes B (as revised Apr. 10, 2002) at 19-20 & Exh. 79 ("Resnikoff Test."). Additionally the State claimed (although its ordnance impact probability calculations apparently did not reflect the claim), as the Thorne Report does now, that because F-16s can carry multiple pieces of ordnance, each individual piece of ordnance could strike the PFSF. Resnikoff Test. at 19; see also Tr. at 8800-03 (Resnikoff). (PFS offered testimony directly contradicting the State's in these two regards. See Tr. at 8867-68 (Fly/Jefferson).) The State also proposed the use of different values for the crash rate, number of sorties, and airway width in calculating the ordnance impact probability. See LBP-03-4, 57 NRC at 128-29. Nevertheless, in making its individual findings and the ultimate finding as to impact probability, the Board simply rejected the State's claims. See id. at 130-31.

In sum, the Board made a specific finding regarding the jettisoned ordnance impact probability at the PFSF in its Utah K PID, after that issue was litigated by PFS and the State in the earlier accident probability phase of this proceeding. Accordingly, the State cannot now seek to relitigate that issue by offering testimony on it in the upcoming evidentiary proceeding on accident consequences.

III. CONCLUSION

In accordance with the foregoing, the Board should issue an order precluding the State from offering testimony on the probability of jettisoned ordnance impacts at the PFSF contrary to the findings made by the Board, including the ultimate finding of impact probability, in the Utah K PID.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "D. Sean Barnett", written over a horizontal line.

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Dated: June 9, 2004

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NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

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PRIVATE FUEL STORAGE L.L.C.)	Docket No. 72-22
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(Private Fuel Storage Facility))	ASLBP No. 97-732-02-ISFSI

CERTIFICATE OF SERVICE

I hereby certify that copies of the "Applicant's Motion in Limine to Preclude New State of Utah Testimony Regarding Jettisoned Ordnance Impact Probability" 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 9th day of June, 2004.

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