

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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COMMISSIONERS

SERVED 05/28/03

Nils J. Diaz, Chairman  
Greta Joy Dicus  
Edward McGaffigan, Jr.  
Jeffrey S. Merrifield

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In the Matter of )

PRIVATE FUEL STORAGE L.L.C. )

(Independent Spent Fuel )  
Storage Installation) )

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Docket No. 72-22-ISFSI

CLI-03-05

**MEMORANDUM AND ORDER**

In a March 10, 2003 order, the Atomic Safety and Licensing Board referred to the Commission a Partial Initial Decision on air crash probability at the proposed Private Fuel Storage (PFS) spent fuel storage facility in Utah.<sup>1</sup> The Board held that it could not approve a license for the PFS facility until PFS provides further proof of the proposed facility's safe design. Both PFS and the NRC staff have filed petitions for review asking the Commission to overturn the Board's probability finding.

Because the Board now is addressing the question whether air crashes at the site would have significant consequences, an inquiry that may obviate the need for Commission review of the Board's probability finding, we decline to undertake review of the probability issue now. Rather, we have decided to hold that issue in abeyance until the Board has completed its "consequences" review. As necessary, we will review all issues relating to air crash risk at that time. Below, we direct the Board to expedite its consequences inquiry.

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<sup>1</sup> See LBP-03-04, \_\_\_ NRC \_\_\_ (2003).

## I. BACKGROUND

Two years ago in this same proceeding, the Commission decided that the “threshold probability” for a credible accident at an Independent Spent Fuel Storage Installation should be one in a million ( $1 \times 10^{-6}$ ) per year of operation.<sup>2</sup> That is, any accident calculated to have less than a one in a million chance of happening is not credible, and a license applicant would not have to show that its facility could withstand such an accident. That decision also approved the Board’s use of a formula for calculating the probability of an aircraft crash that was originally developed for use in reviewing reactor design safety.<sup>3</sup>

In hearings held over 12 days in April through July, 2002, the Board took extensive evidence on the question of the likelihood that military aircraft, in particular the F-16, could crash into the PFS site. The Board heard from 11 witnesses and received 226 exhibits. The transcript of hearings on this issue alone exceeds 3200 pages. The Board detailed its findings in a 220-page Partial Initial Decision.

In that decision, the Board calculated that there was a 4.29-in-a-million ( $4.29 \times 10^{-6}$ ) chance that military aircraft or jettisoned ordnance could crash into the PFS site. The Board ruled that a military aircraft crash into the proposed PFS facility was therefore a credible event and that no license could issue until PFS proves that its proposed facility could withstand such an accident. The Board indicated that, if PFS should choose to pursue the matter, it would hold further proceedings on whether the design of the facility could suffer such an accident without releasing dangerous levels of radiation.<sup>4</sup>

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<sup>2</sup> *Private Fuel Storage* (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255 (2001).

<sup>3</sup> 54 NRC at 264. See Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants, NUREG-0800 (Rev. 2, July 1981) § 3.5.1.6 “Aircraft Hazards.”

<sup>4</sup> See LBP-03-04, slip op at 91.

PFS and the NRC staff both have said that they will prepare for proceedings on consequences.<sup>5</sup> The State of Utah claims that PFS must file a formal license application amendment, followed by staff review, a revised Safety Evaluation Report, and contentions, before any such hearing can take place.<sup>6</sup> The Board plans to consider the further process for resolving the consequences issue at a conference on May 29, 2003. At that time the Board also will consider PFS's pending motion for reconsideration that asks the Board to approve a conditioned or limited license as a means to deal with the air crash risk in the short term.

## II. DISCUSSION

### A. Parties' Claims of Error.

PFS asserts three principal grounds for review. First, it claims that the Board's calculated probability of 4.29 in a million ( $4.29 \times 10^{-6}$ ) should be considered close enough to the threshold probability of one in a million that an aircraft crash should be deemed not a credible event. Related to that argument is PFS's assertion that a conservative estimate of anything less than one in one hundred thousand ( $1 \times 10^{-5}$ ) should be considered acceptable where qualitative factors show that the "realistic" probability is actually less than that. Second, PFS argues that the Board erred in not factoring in an "R factor" representing "pilot avoidance"-- the likelihood that the pilot of a crashing F-16 will steer it away from the PFS facility before he ejects. PFS claims that a pilot could do so in 90% of F-16 accidents, and would do so in 95% of those. This would result in an 86% reduction in probability. Third, PFS argues that the

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<sup>5</sup>Joint Report on "Consequences" Proceedings, March 31, 2003.

<sup>6</sup>*Id.*

Board erred in not admitting its proffered evidence that even if the site were hit by a crashing jet, the casks would not release harmful levels of radiation.<sup>7</sup>

Like PFS, the NRC staff insists that the Board was wrong to deem an F-16 crash into the facility a “credible event.” First, the staff argues that a calculated probability of  $4.29 \times 10^{-6}$  should be “rounded down” to a  $1 \times 10^{-6}$  probability. The staff also claims that the Board should have reduced the calculated probability to reflect the likelihood that the pilot of a crashing F-16 would steer it away from the PFS site prior to ejecting.

**B. Failure to consider “consequences” evidence at the “probability” hearing.**

We reject outright PFS’s third ground for review, that the Board erred in not admitting PFS’s proffered evidence on consequences, for two reasons. First, the Board excluded “consequences” evidence from the hearing in response to motions by both PFS and the NRC staff, who viewed such evidence as irrelevant to a hearing scheduled exclusively to address the probability that an air accident would take place.<sup>8</sup> In addition, at this point, even were we to conclude that the Board erred, the error was harmless in light of the Board’s decision to allow further litigation on the consequences issue.

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<sup>7</sup> The petitions for review also advert to other claimed Board factual errors but do not develop them in detail, presumably because of our 10-page limit on petitions for review.

<sup>8</sup> See Applicant’s Motion to Strike Portions of State of Utah’s Prefiled Testimony of Dr. Marvin Resnikoff Regarding Utah Contention K/Confederated Tribes Contention B (March 25, 2002), NRC Staff’s Motion in Limine to Exclude Portions of the State of Utah’s Prefiled Testimony and Exhibits Concerning Contention Utah K/Confederated Tribes B (March 25, 2002).

### **C. The Board's probability ruling.**

Two principal arguments made by PFS and the NRC staff--that the record justifies "rounding down" the Board's probability finding, and that the Board undervalued the "pilot avoidance" factor--would demand an exhaustive Commission re-evaluation of the factual record. In deciding whether to grant a petition for review, the Commission gives due weight to the existence of a substantial question regarding the considerations listed in 10 C.F.R. §2.786(b)(4), including whether a finding of material fact is "clearly erroneous."<sup>9</sup> However, we are reluctant to decide at this juncture whether to undertake a largely fact-based review here, not just because the factual findings here are extensive, but also because the Board has not completed its "risk" inquiry. Specifically, the Board is still considering the "consequences" aspect of risk.

We do not rule out the possibility of reviewing the Board's probability findings later, in connection with any review of the Board's ultimate determination of risk (*i.e.*, after the Board's "consequences" ruling). To do so now, however, with the Board in the midst of its consequences proceeding, could be an *unnecessary* burden on the parties. The parties would be forced simultaneously to pursue the probability issue on appeal before the Commission -- this would require extensive briefs -- and the consequences issue at hearings before the Board. Because the outcome of our probability review is far from certain, and because the consequences hearing will have a direct bearing on the overall review in any event, we are not inclined to burden the parties at this point in time with the extensive briefing it would take for us to review the probability question on appeal. In addition, the Boards have just issued four

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<sup>9</sup> See 10 C.F.R. § 2.786(b)(4)(i). See also *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-01-11, 53 NRC 370, 382 (2001) (collecting cases), *aff'd sub nom. Orange County v. NRC*, 2002 WL 31098379 (D.C. Cir., Sept. 19, 2002). *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-00-12, 52 NRC 1, 3 (2000).

additional merits rulings, and a fifth is expected imminently.<sup>10</sup> Our scrutiny is best concentrated on those rulings rather than on a probability ruling that may be rendered moot or unimportant by subsequent Board findings.

The probability and consequences sides of the risk equation, of course, are intimately linked: negligible consequences would make probability irrelevant in the same way a vanishingly small probability makes consequences irrelevant. For example, the Board did not look at the probability of certain types of aircraft accidents -- those involving small private aircraft -- in part because such a crash would certainly not penetrate a storage cask.<sup>11</sup> PFS itself recognized the link between the two multipliers in the risk equation when it offered to present consequences evidence at the probability hearing for the purpose of demonstrating the conservatism of its risk calculations. Thus, if PFS successfully demonstrates at the anticipated hearing that the posited crashes would not penetrate a storage cask or, even if they did, would be unlikely to cause release of dangerous levels of radiation, then the overall risk is satisfactorily low and there would be no need for the Commission to undertake review of the probability ruling.

PFS's and the NRC staff's petitions for review on the probability issue are accordingly not denied, but held in abeyance, until the complete record is available to us.

### **III. Consequences Presentation**

In the exercise of our inherent supervisory power over licensing proceedings, we will turn our attention to a matter not specifically raised by the parties. The NRC staff, PFS, and Utah have all given the Board various estimates of the time it will take to complete the

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<sup>10</sup>See LBP-03-08, \_\_\_ NRC \_\_\_ (2003).

<sup>11</sup>See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-19, 53 NRC 416, 452 (2001); see Applicant's Motion for Summary Disposition of Utah Contention K and Confederated Tribes Contention B, (Dec. 30, 2000), at 21-22.

discovery, hearing, and submissions of proposed findings in the consequences proceeding. PFS, which submitted the tightest proposed schedule, believes that the consequences hearings can be completed by October of this year and a Board decision available in January of 2004. Others say it could take longer. We direct the Board to make every effort to wind up the consequences hearing no later than December of this year.

Both PFS and Utah have already done some investigation of consequences. The prefiled testimony of the State's expert, Dr. Marvin Resnikoff, discussed whether an F-16 crash or jettisoned ordnance could penetrate a cask and the possible consequences of that penetration.<sup>12</sup> PFS sought to introduce at the probability hearing evidence that the casks would not be penetrated in the unlikely event of a crash in order to demonstrate its calculation's conservatism. Considering that the parties have had some opportunity to investigate the consequences of an aircraft striking the facility, we find it realistic to urge the Board to expedite the hearing on this issue.

Hence, we specifically authorize the Board to use whatever procedural devices it deems necessary to reach a timely decision.<sup>13</sup> Appropriate measures might include, for example, ordering party disclosure in lieu of discovery, requiring simultaneous submissions, limiting the number of witnesses, forbidding summary disposition or other motions, conducting hearings at NRC headquarters in Maryland rather than in Utah, limiting extensions of time, forgoing a formal NRC staff evaluation, and any other fair and workable procedural steps.

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<sup>12</sup> State of Utah's Prefiled Testimony of Dr. Marvin Resnikoff for Contention Utah K/Confederated Tribes B, (Feb. 19, 2002), at 21-27.

<sup>13</sup> The Commission has inherent power to "customize its process for individual cases." See *Baltimore Gas & Elec. Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 NRC 39, 53 (1998). See *National Whistleblower Center v. NRC*, 208 F.3d 256, 262 (D.C. Cir. 2000), *cert. denied*, 531 U.S. 1070 (2001).

The Board's goal should be to hold an evidentiary hearing in early autumn and to decide the consequences issue before the end of the year. We authorize unusual procedural measures here because this case has remained on our adjudicatory docket for six years. Although we have no doubt that the parties have worked assiduously, the time has now come to make every effort to bring the proceeding to closure soon and to decide whether to issue a license or not. We would expect the Board to report to the Commission if it cannot issue a consequences decision prior to the end of this year. Such a report shall set out the reasons for the delay and establish an alternate deadline for a decision.

#### **IV. Conclusion**

Insofar as PFS's petition for review seeks Commission review of the Board's refusal to entertain consequences evidence at the probability hearing, the petition is denied. In all other respects, the PFS and the NRC staff petitions for review are held in abeyance pending further Commission order, which we expect to issue after the upcoming Board order on consequences becomes ripe for review. The Board is directed to proceed expeditiously on the consequences aspect of the air crash issue, with a view toward resolving it no later than the end of 2003.

IT IS SO ORDERED.

For the Commission

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ANDREW L. BATES  
Acting Secretary of the Commission

Dated at Rockville, MD  
this 28th day of May, 2003