

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

G. Paul Bollwerk, III, Chairman  
Dr. Jerry R. Kline  
Dr. Peter S. Lam

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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

August 30, 1999

MEMORANDUM AND ORDER

(Granting in Part and Denying in Part  
Motion for Partial Summary Disposition Regarding  
Contention Utah K/Confederated Tribes B)

Among the contentions that currently are the subject of summary disposition motions by applicant Private Fuel Storage, L.L.C., (PFS) is contention Utah K/Confederated Tribes B. This issue challenges the sufficiency of PFS's consideration of credible accidents caused by external events and facilities that purportedly would affect its proposed 10 C.F.R. Part 72 Skull Valley, Utah independent spent fuel storage installation (ISFSI). In this instance, the PFS request is for partial summary disposition, which the NRC staff supports and the State of Utah (State), as the lead intervenor party on this contention, opposes.

For the reasons set forth below, we grant in part and deny in part the PFS motion.

## I. BACKGROUND

In our April 1999 decision ruling on the sufficiency of the intervening parties' contentions, the Board admitted portions of contention Utah K and contention Confederated Tribes B and consolidated them for consideration in this proceeding. See LBP-98-7, 47 NRC 142, 190-91, 234-35, 247-48, reconsideration granted in part and denied in part on other grounds, LBP-98-10, 47 NRC 288, aff'd on other grounds, CLI-98-13, 48 NRC 26 (1998). The contention, as admitted,<sup>1</sup> provides:

The Applicant has inadequately considered credible accidents caused by external events and facilities affecting the ISFSI and the intermodal transfer site, including the cumulative effects of the nearby hazardous waste and military testing facilities in the vicinity and the effects of wildfires.

Id. at 253. Further, in admitting this consolidated contention, the Board limited the scope of the contention to (1) the impact upon the PFS facility of (a) accidents involving materials or activities at or emanating from (i) the Tekoi Rocket Engine Test facility (Tekoi), (ii) Salt

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<sup>1</sup> As admitted, this contention also included part of contention six of former intervenors Castle Rock Land and Livestock, L.C., and Skull Valley Co., Ltd. (Castle Rock/Skull Valley). See LBP-98-7, 47 NRC at 214. That portion, however, was dismissed upon Castle Rock/Skull Valley's withdrawal from this proceeding earlier this year. See LBP-99-6, 49 NRC 114, 120-21 (1999).

Lake City International Airport (SLCIA), (iii) Dugway Proving Ground (DPG), including Michael Army Airfield (MAAF), (iv) Hill Air Force Base (HAFB), and (v) the Utah Test and Training Range (UTTR), and (b) wildfires in Skull Valley; and (2) the impact upon the PFS proposed Rowley Junction, Utah intermodal transfer point (ITP) of (a) materials or activities from the above specified facilities; or (b) hazardous materials that pass through Rowley Junction from the Laidlaw APTUS hazardous waste incinerator, the Envirocare low-level radioactive and mixed waste landfill, or Laidlaw's Clive Hazardous Waste Facility and Grassy Mountain hazardous waste landfill. Finally, the Board made the State the lead intervenor party relative to this contention. See id. at 243.

In a June 7, 1999 filing, PFS sought partial summary disposition of contention Utah K/Confederated Tribes B. Relative to the impact of the specified facilities on the PFS facility, it asked for a ruling in its favor on the ground that no genuine issue exists concerning any facts material to whether accidents at those facilities would impact the PFS facility so as to result in radioactive releases in excess of regulatory limits. See [PFS] Motion For Partial Summary Disposition of Utah Contention K and Confederated Tribes Contention B (June 7, 1999) at 2-18 [hereinafter PFS Motion]. PFS also moved for summary

disposition regarding that portion of the contention that concerns the potential negative impact of Skull Valley wildfires on the PFS facility. See id. at 18-20. Both aspects of this motion are supported by a statement of material facts not in dispute, affidavits or declarations by ten individuals, depositions of State witnesses, and other State discovery responses.<sup>2</sup> PFS has not asked for summary disposition on the issue of credible accidents impacting the ITP in this pleading, see id. at 2 n.2; however, in a June 11, 1999 motion for summary disposition PFS has requested that a ruling in its favor be entered regarding whether the ITP requires specific licensing under Part 72, see [PFS] Motion for Summary Disposition of Contention Utah B (June 11, 1999), which potentially is dispositive of all ITP-related issues, including this one.

On June 22, 1999, the staff submitted a response, with three affidavits, supporting the PFS motion for partial summary disposition. The staff agreed that partial summary disposition is appropriate for contention Utah K/Confederated Tribes B in that there are no material factual disputes pertaining to credible accidents, with the

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<sup>2</sup> There have been no objections by PFS, the staff, or the State to the qualifications or expertise of the various affiants whose statements are relied upon to provide support for other parties' assertions regarding the material factual matters at issue in connection with contention Utah K/Confederated Tribes B.

exception of those associated with military aircraft crashes -- a matter about which the staff is still formulating a position -- so that PFS is entitled to a decision in its favor on those matters. See NRC Staff's Response to [PFS] Motion for Partial Summary Disposition of Utah Contention K and Confederated Tribes Contention B (July 22, 1999) at 1-2 [hereinafter Staff Response].

Also on July 22, 1999, the State filed its opposition to the PFS motion, together with its statement of material facts in dispute and the sworn declarations of three individuals. The State opposed the motion by disputing numerous material facts proffered by PFS. In addition, the State raised the issue of cumulative risk by claiming that PFS has failed to consider the cumulative risk posed by the summation of all the hazards involving commercial/private aircraft and missile activities. See [State] Opposition to [PFS] Motion for Partial Summary Disposition of Utah Contention K and Confederated Tribes Contention B (July 22, 1999) at 4-12 [hereinafter State Response]. The State, however, did not address the issue of military aircraft crashes; instead, in a separate unopposed motion the State asked that this question be deferred pending the staff's determination of its position regarding this matter. See id. at 2. The Board granted this request in a July 27, 1999 order. See Licensing Board Order (Granting Filing Extension

Motions and Setting Schedule for Responses to Request for Admission of Late-filed Contention) (July 27, 1999) at 2 (unpublished). Thereafter, the State filed a reply to the staff's response indicating that it disagreed with the staff's position that summary disposition was appropriate. See [State] Reply to NRC Staff's Response in Support of [PFS] Partial Motion for Summary Disposition of Utah Contention K and Confederated Tribes Contention B -- Inadequate Consideration of Credible Accidents (Aug. 4, 1999) [hereinafter State Reply].

Finally, on July 30, 1999, PFS moved to strike that portion of the State's July 22 opposition that dealt with transportation of rocket motors to and from Tekoi, asserting that the affiant supporting the State's position that there was a material factual dispute regarding this facility was not identified to PFS during discovery as a person knowledgeable about, or a testifying witness regarding, activities at Tekoi. See [PFS] Motion to Strike Part of [State] Response to [PFS] Motion for Summary Disposition of Contention Utah K (July 30, 1999) at 4-8. In an August 6, 1999 response, the State indicated it was voluntarily withdrawing its arguments relating to Tekoi, while reserving the right to oppose similar discovery disclosure arguments in the future. See [State] Response to [PFS] Motion to Strike Part of [State] Response to [PFS] Motion for Summary

Disposition of Contention Utah K (Aug. 6, 1999) at 1  
[hereinafter State Motion to Strike Response].

## II. ANALYSIS

### A. Summary Disposition Standards

In an earlier ruling on a PFS motion for summary disposition, we summarized the general standards governing our consideration of summary disposition requests as follows:

Under 10 C.F.R. § 2.749(a), (d), summary disposition may be entered with respect to any matter (or all of the matters) in a proceeding if the motion, along with any appropriate supporting material, shows that there is "no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law." The movant bears the initial burden of making the requisite showing that there is no genuine issue as to any material fact, which it attempts to do by means of a required statement of material facts not at issue and any supporting materials (including affidavits, discovery responses, and documents) that accompany its dispositive motion. An opposing party must counter each adequately supported material fact with its own statement of material facts in dispute and supporting materials, or the movant's facts will be deemed admitted. See Advanced Medical Systems, Inc. (One Factory Row, Geneva, Ohio 44041), CLI-93-22, 38 NRC 98, 102-03 (1993).

LBP-99-23, 49 NRC 485, 491 (1999).

B. Application to Contention Utah K/Confederated Tribes B

With these principles in mind, we turn to the PFS summary disposition request, which the applicant has organized into five parts. Adopting that construct, we address each portion separately below.

1. Tekoi Rocket Engine Test Facility

a. PFS Position. PFS proffers seventeen undisputed material facts, designated A1 through A17, in support of its argument that Tekoi poses no significant hazards to the PFS facility, see PFS Motion, Statement of Material Facts at 1-3 [hereinafter PFS Undisputed Material Facts], which are supported by the affidavits of Stone and Webster Engineering Corporation (S&W) lead mechanical engineer Bruce Brunsdon, Alliant Techsystems, Inc., explosives safety specialist C. Floyd Davis, S&W licensing engineer Jeffrey Johns, and S&W lead electrical engineer Wesley Jacobs, id., attachs. 1-4. In its motion, PFS first identifies the potential hazards to its proposed facility from Tekoi and then explains why each has no health and safety significance based on the likelihood of occurrence or consequence, or both. According to PFS, the State-identified hazards from Tekoi involve a rocket motor (1) exploding while being tested; (2) exploding while being transported to Tekoi; or (3) escaping from its test stand and striking the PFS facility. See PFS Motion at 4.

Regarding rocket motor explosions during testing, PFS states that it performed a standard calculation that shows such explosions would pose no significant hazard to the PFS facility. This is so, PFS declares, because the largest rocket motor that can be tested at Tekoi would contain 1.2 million pounds of Class 1.1 explosive propellant, the detonation of which the calculation shows would produce an overpressure of one pound per square inch (psi) or more only to a distance of 4,782 feet and an overpressure of 0.5 psi or more out to a distance of 7,970 ft. (1.5 miles) from Tekoi. In light of the NRC Regulatory Guide 1.91 overpressure safe threshold of one psi for explosions postulated to occur near nuclear power plants, see Office of Standards Development, U.S. Nuclear Regulatory Commission, Regulatory Guide 1.91, at 1.91-2 (rev. 1 Feb. 1978), with the PFS facility at a distance of more than two miles from Tekoi, PFS asserts that its safety analysis report (SAR) conclusion that systems important to safety at the PFS facility would not be harmed by an explosion that created an overpressure of one psi or less, see PFS SAR at 3.3-9 (rev. 2 Aug. 1998), was correct. PFS thus concludes that these considerations, taken together, establish that rocket motor explosions at Tekoi would pose no significant hazard to its proposed facility. See PFS Motion at 4-5. So too, explosions of rocket motors in transit on Skull Valley Road,

which runs south from Interstate 80 toward the Tekoi facility, or the Tekoi access road, which runs west from Skull Valley Road to the Tekoi facility, would pose no significant hazard to the ISFSI facility, PFS claims, because the restricted area is more than two miles from the access road at its closest point and is 1.9 miles from Skull Valley Road. At these distances, an explosion on either road of the largest motor that could be tested at Tekoi would not create an overpressure of 1.0 psi at the PFS facility, thus posing no threat to the facility. See id. at 5-6.

Regarding the risks posed by a rocket motor escaping its test stand at Tekoi and striking the PFS facility, PFS argues that such an event is not credible because of the design and safety procedures employed at Tekoi and the intervening distance and terrain between Tekoi and its facility. According to PFS, Tekoi has conservatively designed safety features to prevent rocket motors from escaping, including a large thrust block into which the motor is directed and embedded structural steel to restrain and to retain the motor in place. Further, safety procedures require the inspection of the facility before each rocket motor is tested. Indeed, PFS declares, in

nearly twenty-five years of operation no rocket motor has escaped a test stand at Tekoi. See id. at 6.

PFS further maintains that even in the unlikely event a motor were to escape, it is extremely unlikely it would strike the PFS facility. At a distance of more than two miles from Tekoi, the facility's restricted storage area would comprise a small fraction of the potential area to which an escaped rocket motor might fly. Additionally, any rocket motor headed in the direction of the PFS facility would likely strike Hickman Knolls -- a large hummock located between the facility and Tekoi that is 270 feet higher than Tekoi and 400 feet higher than the PFS facility -- before reaching the PFS ISFSI. This, PFS asserts, makes it extremely unlikely that a rocket motor escaping the test stand would strike the facility. Moreover, when combined with the highly unlikely possibility that a rocket motor would escape a test stand in the first place, it simply is not credible, PFS concludes, that the facility would be struck by a rocket motor escaping from the Tekoi facility. See id. at 6-7

As to the portion of contention Utah K/Confederated Tribes B relating to Tekoi, PFS thus concludes it is entitled to summary disposition.

b. Staff Position. For its part, the staff does not dispute any of the seventeen material factual statements

provided by PFS on this issue. See Staff Response at 9-10. Further, as is outlined in the affidavit of Southwest Research Institute principal engineer Dr. Amitava Ghosh that accompanies the staff's response, the staff expresses its support for the PFS motion on this part of the contention based on its own evaluation as set forth in its June 15, 1999 statement of position on this issue (and most of the other Group I contentions). See id. unnumbered attach. 1; see also NRC Staff's Statement of Its Position Concerning Group I Contentions (June 15, 1999) attach. at 14 [hereinafter Staff Position Statement]. The staff maintains that the analysis is acceptable and this part of the contention no longer has any material facts in dispute.

c. State Position. In opposing the PFS motion, the State disputed two material facts proposed by PFS, A10 and A17, claiming that flying objects propelled by an exploding rocket motor while being transported would pose a significant risk to the facility. See State Response, Statement of Material Facts in Dispute Regarding Utah Contention K and Confederated Tribes Contention B at 1 [hereinafter State Disputed Material Facts]. This assertion, which was supported by the affidavit of Radioactive Waste Management Associates senior associate Dr. Marvin Resnikoff, see id. exh. 1, at 5, was not addressed explicitly by PFS in its motion or by the staff in its

position on Group I contentions or in its motion response. The State did not respond to the other PFS arguments that its concerns about overpressure from an exploding rocket motor at Tekoi, overpressure from an exploding rocket motor while being transported, and a rocket motor escaping from its test stand do not pose an undue risk to the PFS facility. Subsequently, however, in response to a PFS request to strike portions of Resnikoff's affidavit relating to this stated concern, the State voluntarily withdrew its arguments regarding Tekoi. See State Motion to Strike Response at 1.

d. Board Ruling. The only dispute raised by the State relates to the issue of flying objects propelled by an exploding rocket motor in transit threatening the PFS facility. The State, however, has voluntarily withdrawn its argument regarding Tekoi. Given the State's action, and the showing made by the PFS, as supported by the staff, we conclude that there are no material facts in dispute relative to this portion of the contention and that, as a consequence, PFS is entitled to judgment as a matter of law on this item. We thus grant the PFS motion relative to Tekoi.

2. Salt Lake City International Airport

a. PFS Position. PFS outlines nine undisputed material facts, B1 through B9, that support its motion

regarding the portion of this contention that concerns the impact of activities from SLCIA. See PFS Undisputed Material Facts at 3-4. The airport is located approximately fifty miles northeast of the PFS facility. According to PFS, the State has admitted that the only hazard that the SLCIA would pose to the facility would arise from overflights by aircraft flying to or from the airport. PFS argues, however, that such activity poses no significant hazard to the PFS facility because of (1) the substantial distance between SLCIA and the facility; (2) the lack of civilian airways near the PFS facility; and (3) the especially low crash rate of aircraft in the cruising phase of flight. See PFS Motion at 7-8. In support of this position, PFS provides the affidavit of National Air Traffic Controllers' Association executive director and former United States Air Force (USAF) Brigadier General James L. Cole, Jr. See id. exh. 5.

Initially, PFS declares that under NRC caselaw, the hazard posed by crashes of aircraft flying to or from an airport is insignificant and need not be considered if the number of takeoffs and landings at the airport per year is less than  $1,000 \times D^2$ , where D is the distance from the airport to the facility in miles. Utilizing that formula here, PFS maintains that with a distance of fifty miles between SLCIA and the PFS facility, the number of takeoffs

and landings would have to reach 2,500,000 (1000 x 50<sup>2</sup>), before SLCIA would pose any risk to the facility. According to PFS, in 1998 there were 365,000 total takeoffs and landings at SLCIA. PFS thus concludes that the risk posed to the facility by crashes of aircraft flying to and from SLCIA is insignificant and need not be considered. See PFS Motion at 8.

In addition, PFS asserts that under NRC caselaw, the hazard posed to a nuclear facility from aircraft flying in a civilian airway need not be considered if the closest edge of the airway is more than two miles from the facility. According to PFS, the closest civilian airway to the PFS facility is high altitude Jet Route J-56, which passes ten nautical miles north of the PFS site. For the purpose of its analysis, PFS took the high altitude jet routes as having a width of eight nautical miles. Therefore, the closest edge of J-56 is more than five statute miles from the facility. Similarly, the next closest civilian airway to the PFS facility is Low Altitude Route V257, which runs north and south seventeen nautical miles to the east of the facility on the far side of the Stansbury Mountains, is more than ten statute miles from the PFS site at its closest edge. Thus, PFS declares the aircraft in both J-56 and V257 and any other airway farther from the PFS facility would

also pose no significant hazard to it. See PFS Motion at 8-9.

Finally, PFS maintains that any civilian aircraft in the region of the PFS facility would be in the cruise phase of flight, given the long distance to SLCIA (or any other airport). According to PFS, aircraft during the cruise phase of flight exhibit very low crash rates relative to other aspects of flight. This factor, together with the distance from established airways, show conclusively that SLCIA flights pose no significant risk to its Skull Valley facility. See id. at 9.

Accordingly, PFS asserts that it is entitled to summary disposition on this aspect of contention Utah K/Confederated Tribes B as well.

b. Staff Position. The Staff does not dispute any of the nine material facts proposed by PFS. Again citing the supporting Ghosh affidavit that accompanies the staff's response, the staff declares that it supports the PFS conclusion that aircraft flying to and from SLCIA (and other nearby municipal airports) would not pose a significant risk to the PFS facility. See Staff Response at 11.

c. State Response. The State disputes two material facts, B7 and B9, proposed by PFS. See State Disputed Material Facts at 1-2. As is detailed in the supporting affidavit of former USAF Major General John W. Matthews, the

State maintains that PFS expert Cole has erred in assuming that a commercial aircraft flying near the PFS facility would be in the cruising mode. According to Matthews, the formulas for determining initial descent for an aircraft approaching the SLCIA indicated that such aircraft would, instead of cruising, be descending as they went over the PFS facility. See State Response at 8. This is a material factual dispute, the State asserts, because, as outlined in Resnikoff's affidavit, descending aircraft have higher accident rates than cruising aircraft. The State further declares, based on Resnikoff's affidavit, that PFS should have considered the growth of air traffic in its evaluation of commercial aircraft risks. See id. at 8. Finally, in response to the staff's filing, the State questions whether PFS properly computed the aircraft crash risks for flights using paths J-56 and V257. See State Reply at 6-7.

d. Board Ruling. Of the matters raised by the State relating to SLCIA, at least two, the higher commercial aircraft risks posed by descending aircraft compared to cruising aircraft and the higher risks due to the growth of air traffic leading to a higher number of takeoffs and landings, have sufficient support to identify a genuine dispute of material fact relative to the SLCIA portion of

this contention. We thus deny the PFS motion relative to this part of the contention.<sup>3</sup>

3. Dugway Proving Ground

a. PFS Position. PFS proposed twenty-two material facts not in dispute, C1 through C22, to support its motion for the part of the contention concerning DPG. See PFS Undisputed Material Facts at 4-7. PFS declares that the hazards the State has alleged DPG would pose to the PFS facility involve (1) the firing of conventional ground weapons in military testing and training; (2) the testing, storage, and disposal of chemical munitions and agents; (3) the testing of biological materials; (4) the transportation of biological, chemical, and hazardous materials to and from DPG; (5) unexploded ordnance; and (6) aircraft flights into and out of DPG's Michael Army Airfield, including landings of military aircraft carrying "hung bombs" and the landing of the X-33 experimental space plane. See PFS Motion at 9-10.

Relying on the affidavits of Cole and former DPG Commander George A. Carruth, see id. exhs. 5-6, PFS

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<sup>3</sup> In connection with further litigation of Resnikoff's remarks about SLCIA expansion, however, we note that the relevant issue appears to be whether the nearly seven-fold expansion in aircraft takeoffs and landings that, under the caselaw formula cited by PFS, seemingly would be necessary to have any material impact on the risk analysis at issue would have some reasonable likelihood of occurring during the 20-year term of the PFS facility Part 72 license.

generally attempts to dismiss the hazards from DPG based on the distance between its Skull Valley site and the DPG locations where the alleged hazardous activities take place, the nature of the activities, and the safety precautions that are taken at DPG with respect to potentially dangerous activities at that facility. Additionally, PFS claims that, in their deposition testimony, State witnesses knowledgeable about activities at DPG, including Matthews, State Division of Solid and Hazardous Waste/Waste Chemical Demilitarization Section (DSHW/WCDS) environmental engineer David C. Larsen, and DSHW/WCDS section manager Martin D. Gray, cited no specific, credible hazard at DPG that would threaten the PFS facility. Specifically, PFS points to the fact that State witness David Larsen, in response to the question, "So it's safe to conclude as you said before, that you don't see any hazard posed to the Private Fuel Storage facility from Dugway?" answered "Right. Right." PFS Motion at 10 (quoting PFS Motion exh. 14, at 72 (Larson deposition)).

In connection with the individual PFS responses to purported hazards, PFS first indicates that military training exercises and the firing and testing of conventional weapons will not pose a hazard to the PFS facility because (1) the firing of weapons is covered by rigid procedures; (2) the closest firing position to the PFS site is more than fifteen miles away; (3) the range of most

of the weapons is insufficient to reach the Skull Valley facility from those distances; and (4) the weapons are fired toward the south and northwest, away from the PFS facility. PFS thus claims there is no credible scenario by which conventional munition fired from Dugway would strike its ISFSI. See PFS Motion at 11.

Relative to the second issue of chemical munitions and agents at Dugway, PFS likewise maintains these will pose no significant hazard to its facility. According to PFS, open air testing of chemical munitions and agents was prohibited by law in 1969 (50 U.S.C. § 1512), and has not been conducted since that time. Thus, activities at DPG involving chemical agents and munitions is limited to indoor testing of chemical agents, storage of agents and unexploded chemical munitions recovered from the firing ranges, and disposal of chemical agents. PFS claims these activities will not pose a credible hazard to its facility because of the distance between DPG and the PFS facility and the limited quantities of agents whose release would be credible. See PFS Motion at 11.

In this regard, PFS declares that the indoor testing of chemical agents is done in facilities nearly twenty miles from the PFS facility that are designed to preclude the release of chemical agents, and thus would pose no credible hazard to the Skull Valley facility. Similarly, chemical

munitions and agents are stored in locations at DPG that are more than seventeen ~~miles~~ miles from the Skull Valley facility and are subject to various restrictions, including State regulations under ~~the~~ federal Resource Conservation and Recovery Act (RCRA). PFS argues that by virtue of the distance to its facility and the many controls designed to protect public health and safety, the release of chemical agents from chemical munitions or agents stored at DPG does not pose a credible hazard to that facility. See id. PFS asserts that the worst credible threat posed by a chemical agent at DPG would arise from the accidental detonation of a previously unexploded eight-inch projectile filled with chemical agent GB (which PFS likewise indicates is an extremely unlikely event). The distance at which such an event would pose a threat, however, is approximately three miles, much less ~~than~~ the actual distance to the PFS facility. Further, according to PFS, disposal of chemical munitions and agents is done under rigorous controls, including regulations by the State under RCRA, and would pose no credible hazard to the PFS facility. See id. at 12-13.

A third potential hazard addressed by PFS is the biological materials present on DPG, which PFS asserts also would not pose a credible hazard to its facility. According to PFS, the use of biological materials at DPG occurs at the

Life Sciences Test Facility that is more than twenty miles from the PFS facility and is conducted under engineering and procedural controls designed to prevent the release of material to the environment. Furthermore, PFS claims that, even if biological material at the test facility were to escape, it would pose no significant hazard to the PFS facility because it would have little, if any, chance of surviving in the environment long enough to be carried the twenty miles from the testing facility to the PFS facility. Thus, PFS argues that the use of biological materials at DPG also poses no credible hazard to the PFS facility. See id. at 13.

PFS further maintains that the transportation of chemical agent or biological materials to or from Dugway does not pose a significant hazard to its facility. Larger shipments of such material are performed with safety precautions and, moreover, do not travel along Skull Valley Road. Although small, laboratory quantities of material could potentially be shipped by common carrier along Skull Valley Road, the safe packaging of those shipments is regulated by the United States Department of Transportation so as to prevent a release even in the event of an accident. PFS also maintains that hazardous wastes shipped from DPG do not include chemical agents but rather only chemically neutralized agents, which are less hazardous and would not

threaten the PFS facility even if spilled on Skull Valley Road. See id. at 13-14.

The fifth PFS-identified item, unexploded ordnance in firing ranges on the DPG facility, is not a significant hazard to the Skull Valley facility, PFS asserts, because (1) it is very unlikely that such ordnance would explode spontaneously or accidentally; and (2) even if it did, the PFS facility is far enough away that the material in the unexploded round would not pose a significant hazard. Moreover, unexploded ordnance is not likely to be found off DPG close enough to pose a risk to the PFS facility, in that the firing ranges at DPG are all at least fifteen miles away and Army records of where munitions were fired at DPG, while showing two off-site areas to the south of DPG in which there may be unexploded ordnance, give no indication that munitions were fired off-site to the north of DPG in the direction of the Native American reservation on which the PFS facility will be located. See id. at 14.

Finally, regarding Michael Army Airfield at DPG, PFS declares that the landing of aircraft at MAAF would not pose a hazard to the PFS facility. According to PFS, the airfield is over seventeen miles from the PFS site, making it outside the takeoff and landing traffic pattern. Additionally, because the number of aircraft flying into MAAF annually is small and the crash rate those aircraft

experience is very low (mostly transport aircraft that have a rate similar to commercial airliners), an air crash probability analysis in accordance with the agency caselaw endorsed reactor standard **review** plan analysis, see Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, NUREG-0800, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants § 3.5.1.6 (rev. 2, July 1981), indicates that the likelihood that an aircraft flying into MAAF would crash into the PFS facility is insignificant. See PFS Motion at 14 & n.30.

Also in connection with MAAF, PFS states that aircraft with hung ordnance flying from the UTTR to MAAF would pose no significant hazard to the PFS facility. First, PFS declares only about five aircraft per year experience such problems. Second, aircraft on the UTTR with hung ordnance fly directly into MAAF **following** specially developed approach procedures without crossing Skull Valley. As a result, any aircraft with "hung ordnance" would not pose a hazard to the PFS facility. See PFS Motion at 14-15.

Relative to MAAF, PFS also contends that the proposed MAAF landing of the X-33 experimental aircraft does not pose a significant hazard to the Skull Valley ISFSI. Putting aside the fact that all flights of the X-33 are scheduled to be concluded by mid-2000, the proposed flight path for the

X-33 would not bring the space plane over Skull Valley, let alone the PFS facility. See id. at 15.

In sum, PFS maintains that none of the activities of concern to the State concerning DPG would pose a credible hazard to the PFS facility so that PFS is entitled to summary disposition of this part of contention Utah K as well.

b. Staff's Position. As is outlined in the supporting Ghosh affidavit, after conducting its own evaluation and reviewing the PFS motion, the staff has determined that it does not dispute any of the PFS material facts regarding the hazards posed to the PFS facility by DPG (which the staff identifies as C17, C18, and portions of C20 and C22) other than those relating to military aircraft crashes for which it has not formulated a position. See Staff Response at 10-11; id. unnumbered attach. 1, at 3 (Ghosh affidavit); see also Staff Position Statement attach. at 15-16. It thus supports granting summary disposition in favor of PFS regarding all other aspects of the DPG issue.

c. State Position. Relying on information in the affidavits of Resnikoff, Matthews, and Gray, the State disputes nine of the twenty-two material facts proposed by PFS, including C2, C4, C6 through C9, C14, C15, and C22. See State Disputed Material Facts at 2-3. These include questions regarding whether ordnance from DPG training

exercises could reach the PFS facility and ordnance disposal/unexploded ordnance.

In response to the PFS assertion that the firing of conventional weapons during military training sessions will not impact the PFS facility, the State points out that at the Wig Mountain site in the northwestern portion of DPG, which is fifteen miles from the PFS facility, Army and National Guard troops fire a multiple rocket launch system with a range of eighteen miles. See PFS Motion at 9; see also State Reply at 2-3 & n.3.

On the subject of ordnance disposal/unexploded ordnance, the State declares that relative to the risks involved in chemical and biological agent disposal, PFS has failed to analyze adequately the potentially significant sources of risk to PFS facility integrity posed by the historical disposal of chemical agents, biological agents, and/or explosives and propellants or by unexploded ordnance that has not yet been discovered/rediscovered. The State asserts that since 1988 DPG, in cooperation with State regulators, has identified 216 DPG ordnance disposal sites and three sites outside DPG's boundaries that were contaminated from past DPG disposal practices. The State also contends that the search for such sites is not yet completed, since seventeen new DPG sites were added in 1998 and more are expected. The State also maintains that

chemical agent munitions were discovered at three separate contaminated sites at DPG during the past two years and a biological munition was also found at another DPG contaminated site this year. The State argues that these finds, in conjunction with the Army's historically poor recordkeeping, establish a genuine dispute with the accuracy of PFS's statements claiming there is no factual dispute about the existence of unaccounted for ordnance as a result of chemical or biological ordnance disposal or munitions firing activities. See State Response at 10; see also State Reply at 5.

That such ordnance may be found near the PFS site is significant, the State further asserts, because in some cases unstable munitions must be detonated in place, raising the possibility of site evacuation, toxic fumes at the site (such as were detected following munitions detonations at the Aberdeen Proving Ground in Maryland), and other impacts. The State also argues that it is possible that undiscovered munitions will explode spontaneously. Nor, according to the State, is it possible to say what the worst-case or bounding accident is because an essential element of such analysis, the amount of contaminants, is unknown. Because these risks have not been adequately addressed in the PFS motion, the State asserts, summary disposition is inappropriate relative

to the matter of disposal/unexploded ordnance. See State Response at 11; see also State Reply at 4-5.

d. Board Ruling. Of the six DPG-related items identified by PFS that do not relate to the deferred issue of military aircraft crashes, the State has raised no material factual dispute relative to the testing and storage of chemical munitions and agents; the testing of biological materials; the transportation of biological, chemical, and hazardous materials to and from DPG; and MAAF landings involving military aircraft carrying "hung bombs" or the X-33 experimental space plane. Further, based upon our own review of the materials provided by PFS and the staff in support of the motion, we conclude there are no material facts at issue and that summary disposition in favor of PFS on these matters is appropriate.

In connection with the training exercise ordnance and ordnance disposal/unexploded ordnance issues about which the State has sought to establish there are disputed material facts, the State has provided a sufficient showing to establish that a genuine dispute of material fact exists regarding the training exercise ordnance issue. The State's sworn assertions regarding the current training use of a missile at the Wig Mountain site that can reach the PFS facility establishes a litigable material factual dispute.

We thus deny the PFS motion relative to this portion of contention Utah K/Confederated Tribes B.

With regard to the State's assertion concerning impacts to the PFS facility relating to previously unaccounted for disposal sites or unexploded ordnance, the State references agency caselaw indicating that a summary disposition opponent is entitled to the favorable inferences that may drawn from any evidence submitted. See State Response at 3 (citing Sequoyah Fuels Corp. (Gore, Oklahoma Site Decontamination and Decommissioning Funding), LBP-94-17, 39 NRC 359, 361, aff'd, CLI-94-11, 40 NRC 55 (1994)). This authority, however, does not relieve the opposing party from the responsibility, in the face of well plead undisputed material facts, of providing something more than suspicions or bald assertions as the basis for any purported material factual disputes. See Advanced Medical Systems, Inc. (One Factor Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 306-07 (1984), aff'd, Advanced Medical Systems, Inc. v. NRC, 61 F.3d 903 (6<sup>th</sup> Cir. 1995) (table). In seeking to base its opposition on three off-DPG disposal sites whose location and nature the State did not disclose; the existence of ordnance in offsite areas south of DPG that formerly were DPG range areas but are no longer within DPG borders, see PFS Motion attach. 15, at 74-75 (Gray deposition); see also id. attach. 14, at 39 (Larsen deposition) (no ordnance found

north of DPG); and a purported presumption about the inadequacy of military recordkeeping, the State has failed to show there is a credible factual nexus between the ordnance disposal/unexploded ordnance deficiencies it sets forth in support of its position and the PFS ISFSI site sufficient to create a material factual dispute. We therefore grant the PFS motion on this point.

4. Utah Test and Training Range and Hill Air Force Base

a. PFS Position. Utilizing support from affiant Cole and discovery depositions of Matthews and State DSHW employee Bronson W. Hawley, PFS submits nineteen material facts, D1 through D19, to support its argument in favor of summary disposition on this portion of contention Utah K/Confederated Tribes B. See PFS Undisputed Material Facts at 7-9. The HAFB is located north of Salt Lake City on the eastern shore of the Great Salt Lake, approximately sixty-five miles from the PFS facility. USAF aircraft based at HAFB (and military aircraft based outside the State of Utah) utilize the UTTR, which is restricted to military training and testing operations. The UTTR is divided into a North Area, which is located on the western shore of the Great Salt Lake to the north of Interstate 80, and a South Area, which is located west of the Cedar Mountains to the south of Interstate 80 and northwest of DPG. See PFS Motion at 15-16.

According to PFS, the State's allegations regarding HAFB and UTTR center on the possibility that (1) aircraft flying to and from HAFB and over the UTTR pose a hazard to the PFS facility; and (2) the firing of air-delivered munitions (e.g., bombs and missiles) on the UTTR would pose a hazard to its ISFSI facility. See id. at 16. As is outlined below, PFS claims that both these hazards are not significant.

Regarding the overflight hazard, PFS maintains that the only aircraft from HAFB that approach the PFS facility are those that pass through Skull Valley en route to the UTTR South Area. Flying south, they pass west of Deseret Peak, near the Stansbury Mountains about five miles east of the PFS facility, to practice terrain masking to evade radar. During this portion of the flight they conduct no combat maneuvers and maintain their armament release switches on "safe" until they are inside United States Defense Department land boundaries. See id. at 16-17.

According to PFS, because aircraft en route to the UTTR South Area fly at low altitudes at a distance of about five miles from the PFS facility, the likelihood that such aircraft would crash into or otherwise impact the facility is low and would not pose a significant hazard. PFS states that the military traffic down the east side of Skull Valley is analogous to air traffic in a civilian airway that, in

the context of its consideration of a nuclear power reactor, the NRC would consider insignificant if more than two miles away. PFS thus asserts that such aircraft likewise should be excluded here as posing no significant risk to its Skull Valley facility. See id. at 17.

Concerning the hazard involved in the use of air-delivered weapons on the UTTR, PFS claims this does would not pose a significant hazard to its facility. PFS declares this is so because aircraft outside the UTTR and DPG are required to maintain weapons release switches on "safe," thus rendering insubstantial the likelihood of an accidental weapon release that would hit the PFS facility. In addition, according to PFS, the weapon releases on the UTTR are so carefully planned and controlled, the UTTR has not experienced a weapon release outside an intended launch area. Further, the closest weapon launch/drop boxes are about thirty miles from the PFS facility so that weapon use at the UTTR is too far away to pose a risk to its facility, PFS maintains. See id. at 17-18.

Addressing a more specific State concern, PFS also claims that cruise missile launches at targets on the UTTR would not pose a significant hazard to its facility. According to PFS, there are about six launches per year and the targets in the UTTR South Area are approximately thirty miles west of the PFS facility. Furthermore, cruise missile

run-ins, drops, and launches are normally conducted from north to south ~~or~~ east to west, away from the PFS facility and all missiles with the capability of exceeding range boundaries are equipped with a Flight Termination System (FTS) that permits the destruction of the missile if it goes off course. In fact, PFS asserts, the UTTR has not experienced an FTS failure. See id. at 18.

These facts, PFS argues, establish that it is entitled to summary disposition for this part of contention Utah K/Confederated Tribes B as well.

b. Staff's Position. While again expressing no position regarding military aircraft crashes involving planes en route to or from the UTTR and Hill, the Staff does not dispute the validity of the other material facts posited by PFS. Further, as described by staff affiant Ghosh, based on its own review, the Staff agrees with the PFS position that munitions testing, including cruise missile launches at the UTTR, do not pose any significant hazard to the PFS facility. See Staff Response at 12.

c. State Position. Relying on the sworn statements of Resnikoff and Matthews, the State disputes eight of the nineteen material facts proposed by PFS, including D11 through D13 and D15 through D19. See State Disputed Material Facts at 3-4. These disputed facts involve the

evaluation of noncrash hazards from overflights, including dropped ordnance and aircraft parts, and cruise missiles.

Regarding overflight hazards other than actual crashes into the PFS facility, the State notes that relative to the postponed portion of this contention concerning military aircraft crashes, it intends to show there will be military flights over or near the PFS facility. There is also the possibility of mechanical failure or pilot error relative to the use of "safe" switches during such overflights, which could result in the release of a bomb that, even if a dummy, could do radiologically significant damage to a storage cask. In addition, the State declares that PFS has failed to analyze another significant risk from overflights, the possibility of engine problems that would cause the plane to actually lose an engine or have to jettison its fuel tank and munitions, any of which could do significant damage to a storage cask. See State Response at 8-9; see also State Reply at 9.

Also flawed, the State declares, is the PFS analysis showing cruise missiles pose no significant hazard to the proposed ISFSI. The State claims that, not only are cruise missile tests permitted in the vicinity of the ISFSI, they have actually been conducted there, and one has crashed in the same unit of military airspace. The State asserts that, as discussed by its expert Matthews, the USAF conducts

cruise missile exercises in the Sevier B Military Operating Area (MOA) airspace. The Sevier B MOA airspace is directly over the PFS facility and adjacent to the UTTR land and is considered part of the UTTR airspace. According to the State, cruise missile flight patterns may include a cruise missile flight within one nautical mile of the site. Indeed, the State claims that in June 1999 a cruise missile crashed on United States Department of the Interior Bureau of Land Management property in the southern portion of the Sevier B MOA, the same MOA in which PFS proposes to build its facility. See State Response at 6; see also State Reply at 8-9.

The State also maintains that the FTS for the cruise missile that crashed in June 1999 was either ineffective or missing. The State declares that whether the system failed, was not installed in the missile, or was simply not activated because the missile was not off course is still unknown because the accident investigation is not complete. Additionally, the State claims that malfunctioning equipment was involved in a 1997 cruise missile crash in which the operators lost communication, and therefore control, of the cruise missile. As a result, the operators were unable to direct it away from the civilian observatory to which it was headed. Thus, although the missile had a working FTS, the operators were unable to use the system to prevent the

crash. The 1997 and 1999 cruise missile crashes, according to the State, demonstrate that cruise missiles are prey to equipment failure and/or human error, with potentially serious results for the PFS facility. See State Response at 6-7; see also State Reply at 9-10.

Also in connection with the PFS arguments regarding cruise missiles, the State disputes the PFS assertion that targets for the cruise missile are no closer than thirty miles away from the proposed PFS facility. It declares that one cruise missile target is located approximately fifteen miles from the proposed PFS facility. Additionally, the State observes that the December 1997 cruise missile crash mentioned in the PFS motion occurred on Cedar Mountain, which borders the proposed PFS facility on the west, and argues that because the missile was out of control at the time of the crash, it could have overflowed Cedar Mountain and struck a target in Skull Valley. Moreover, the State asserts, given the two local cruise missile incidents in the last two years, including one crash in the vicinity of the proposed PFS facility and the second within the Sevier B MOA which includes the proposed site, PFS's reliance on the small number of cruise missile launches in its evaluation is wholly misplaced. See State Response at 7; see also State Reply at 8-9.

In summary, the State maintains that in light of the cruise missile flight paths, the targets, the nature and number of recent mishaps for those missiles, and the magnitude of the consequences that would result from a cruise missile hit of the ISFSI, the risk posed by cruise missile activity alone is significant and has not been adequately analyzed by PFS.

d. Board Ruling. Relative to the issue of noncrash consequences of overflights, it is apparent this question hinges on whether UTTR aircraft will transit Skull Valley, a factual matter that the staff has asked be deferred as part of its military aircraft crash analysis. See Staff Response at 4 n.3 (staff takes no position on PFS material facts D2, D5 through D10). We thus will postpone any ruling on this aspect of the contention, with the understanding that at an appropriate point following the staff's action, PFS may supplement its summary disposition motion on this point (with an opportunity for other interested parties to respond).

Concerning the issue of cruise missile activity, the circumstances of the recent cruise missile incidents provide a basis for disputing PFS material facts D11 through D13 and D15 through D19 that is sufficient to demonstrate that a genuine dispute exists regarding material facts concerning the possible impact of cruise missile activities upon the

PFS facility. Accordingly, we deny the PFS motion relative to this matter.

5. Wildfires

a. PFS Position

Citing as support the affidavits of Texas Tech University professor Carlton Britton, S&W project engineer Jerry Cooper, and Holtec International president and chief executive officer Krishna Singh, PFS has proffered eleven material facts not in dispute, E1 through E11, to bolster its argument that wildfires do not pose a significant hazard to its facility. See PFS Undisputed Material Facts at 9-10. As summarized in the PFS motion, these proposed material facts contain the following observations.

The PFS facility restricted area, in which the spent fuel casks will be located at all times, will be enclosed by a fenced area and perimeter road that will have a surface of crushed rock. A wildfire could not be sustained inside this area. No spent fuel cask will be nearer than 162 feet from the edge of this crushed rock. Moreover, the restricted area will be surrounded by a 300-foot wide barrier of fire-resistant crested wheat grass. Together, the fire break of crushed rock and the surrounding 300 feet of crested wheat grass will protect equipment, structures, and life within the restricted area from any heat damage from a wildfire. See PFS Motion at 18-19.

PFS also notes that the storage casks to be used at the facility are designed to withstand a temperature of at least 1475° Fahrenheit (F) for significantly longer than the likely duration of a wildfire at the facility, even without the more than 150 foot crushed rock fire break and 300 foot barrier of fire resistant crested wheat grass. In addition, a wildfire could not cause harm to any spent fuel casks or structures inside the canister transfer building because of that building's thick concrete walls. Further, because of the crested wheat grass and crushed rock barriers, a wildfire could not ignite or explode any of the diesel fuel present inside the restricted area. Nor would smoke from a fire threaten either the systems, structures, or components at the PFS facility that are important to safety or PFS facility security personnel. Finally, PFS declares that the threat a fire might pose to systems at the PFS facility other than those important to safety is irrelevant to the licensing of the facility. See id. at 19-20.

PFS thus submits that wildfires pose no credible hazard to the facility and it is entitled to summary disposition on this part of contention Utah K/Confederated Tribes B.

b. Staff's Position. With the affidavits of Ghosh, NRC senior reactor engineer Guttman, and NRC fire protection engineer Paul Lain as support, the staff fails to accept only one of PFS's proposed material facts in support

of this part of the contention. With respect to material fact E11, the staff disagrees with PFS that the threat a wildfire may pose to systems at the PFS facility other than those important to safety are necessarily "irrelevant" to licensing. The staff concludes, however, it is satisfied that wildfires would not pose a significant hazard to the PFS facility. See Staff Response at 12-14; see also Staff Position Statement attach. at 16.

c. State Position. In its response, the State declared it will not respond to the PFS proposed material facts relative to this issue. See State Response at 2-3.

d. Board Ruling. Because the PFS proposed statement of material facts are not disputed by the State, and our own review of the PFS motion and the staff's supporting pleading leads us to conclude that there is a sufficient basis to support these material facts, we find PFS is entitled to summary disposition in its favor regarding this portion of contention Utah K/Confederated Tribes B.<sup>4</sup>

#### 6. Cumulative Risks

As part of its summary disposition response, the State also asserts that summary disposition is not appropriate

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<sup>4</sup> As we explain further in ruling today on the PFS motion for summary disposition of contention Utah R, we decline to adopt the PFS characterization of the fire threat to equipment and systems not designated as "important to safety" as "irrelevant." See LBP-99-36, 50 NRC \_\_\_\_, \_\_\_\_ (slip op. at 10) (Aug. 30, 1999).

regarding this contention because in evaluating the impacts of credible accidents upon its facility, PFS has failed to provide a sufficient analysis of the cumulative risks of those matters. Specifically, relying upon the Resnikoff affidavit, the State declares that, consistent with NUREG-0800, any analysis of aircraft accident probabilities must include an analysis of the sum of the risks from (1) military aircraft flying to and from MAAF; (2) military and private aircraft flying in the Sevier B MOA other than to and from MAAF; (3) commercial aircraft flying in airways V257 and J-56; (4) cruise missiles; and (5) aircraft parts or munitions (inert or alive) being intentionally or unintentionally dropped on the PFS facility. See State Response at 4-5; id. exh. 1, at 2; see also State Reply at 7. Given that a significant factual underpinning of this assertion is the deferred question of military aircraft crash impacts on PFS, we likewise will postpone any decision on this matter, albeit again with the caveat that it may be the subject of a PFS supplement to its summary disposition motion (and party responses) at an appropriate time after the staff has provided its position on military aircraft crashes.

#### IV. CONCLUSION

The PFS June 7, 1999 motion for partial summary disposition of Utah K/Confederated Tribes B is denied in part, granted in part, and deferred in part as follows:

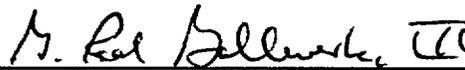
1. The Tekoi rocket engine test facility -- Granted.
2. Salt Lake City International Airport -- Denied.
3. Dugway Proving Ground -- (a) the firing of conventional ground weapons in military testing and training, denied; (b) the testing and storage of chemical munitions and agents, granted; (c) the testing of biological materials, granted; (d) the transportation of biological, chemical, and hazardous materials to and from DPG, granted; (e) ordnance disposal/unexploded ordnance, granted; and (f) aircraft flights into and out of DPG's MAAF, deferred pending a staff position on military aircraft crashes except for those portions regarding landings of aircraft carrying "hung bombs" and the landing of the X-33 experimental space plane, which are granted.
4. Utah Test and Training Range and Hill Air Force Base -- (a) aircraft flying to and from HAFB and over the UTTR pose a hazard to the PFS facility, deferred pending a staff position on military aircraft crashes; and (b) the firing of air-delivered munitions (e.g., bombs and missiles) on the UTTR would pose a hazard to its ISFSI facility, deferred as to bombs pending a staff position on military aircraft crashes and denied as to cruise missiles.
5. Wildfires -- Granted.
6. Aircraft Accident Cumulative Impacts -- Deferred pending staff position on military aircraft crashes.

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For the foregoing reasons, it is this thirtieth day of August 1999, ORDERED, that (1) the June 7, 1999 motion for summary disposition of applicant PFS is granted in part,

denied in part, and deferred in part as outlined above in this memorandum and order; and (2) as to those portions of this contention for which summary disposition is granted, PFS having established there is no genuine issue as to any material fact, a decision regarding these matters is rendered in favor of PFS.

THE ATOMIC SAFETY  
AND LICENSING BOARD<sup>5</sup>



G. Paul Bollwerk, III  
ADMINISTRATIVE JUDGE



Dr. Jerry R. Kline  
ADMINISTRATIVE JUDGE



Dr. Peter S. Lam  
ADMINISTRATIVE JUDGE

Rockville, Maryland

August 30, 1999

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<sup>5</sup> Copies of this memorandum and order were sent this date by Internet e-mail transmission to counsel for (1) applicant PFS; (2) intervenors Skull Valley Band of Goshute Indians, Ohngo Gaudadeh Devia, Confederated Tribes of the Goshute Reservation, Southern Utah Wilderness Alliance, and the State ; and (3) the staff.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

PRIVATE FUEL STORAGE, LLC

(Independent Spent Fuel Storage  
Installation)

Docket No.(s) 72-22-ISFSI

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB MEMO & ORDER (LBP-99-35) have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

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Docket No.(s)72-22-ISFSI  
LB MEMO & ORDER (LBP-99-35)

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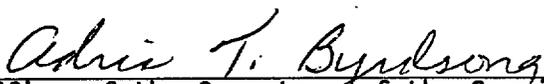
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Dated at Rockville, Md. this  
30 day of August 1999

  
Office of the Secretary of the Commission