

June 7, 1999

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**Before the Atomic Safety and Licensing Board**

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

**APPLICANT'S MOTION FOR PARTIAL SUMMARY DISPOSITION OF  
UTAH CONTENTION K AND CONFEDERATED TRIBES CONTENTION B**

Applicant Private Fuel Storage L.L.C. ("Applicant" or "PFS") files this motion for partial summary disposition of Board Contention 7, "Utah K/Confederated Tribes B – Inadequate Consideration of Credible Accidents," ("Utah K") pursuant to 10 C.F.R. § 2.749. Summary disposition is warranted on the grounds that there exists no genuine issue as to any material fact relevant to the parts of the contention on which PFS requests summary disposition and, under the applicable Commission regulations, PFS is entitled to a decision as a matter of law. This motion is supported by a statement of material facts, affidavits or declarations by George Carruth, James Cole, Bruce Brunson, Floyd Davis, Jerry Cooper, Wes Jacobs, Jeff Johns, Carlton Britton, Krishna Singh, and Ram Srinivasan, and depositions of State personnel, and other State discovery responses.

**I. STATEMENT OF THE ISSUES**

On April 22, 1998, the Atomic Safety and Licensing Board ("Licensing Board" or "Board") admitted Utah K as a consolidation of Contentions Utah K and Confederated Tribes B. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation),

LBP-98-7, 47 NRC 142, 190-91, 234-35, 253 (1998) (hereinafter "LBP-98-7").<sup>1</sup> The contention asserts that:

The Applicant has inadequately considered credible accidents caused by external events and facilities affecting the ISFSI and the intermodal transfer site [{"ITP"}], including the cumulative effects of the nearby hazardous waste and military testing facilities in the vicinity and the effects of wild-fires.

Id. at 253. In admitting the contention, the Board limited the facilities to be considered with respect to the Private Fuel Storage Facility ("PFSF") to 1) the Tekoi Rocket Engine Test facility, 2) Salt Lake City International Airport, 3) Dugway Proving Ground, 4) Hill Air Force Base, and 5) the Utah Test and Training Range. LBP-99-6, 49 NRC \_\_, slip op. at 11 n.3.<sup>2</sup> PFS moves for partial summary disposition of Utah K on the grounds that no genuine issue exists concerning any facts material to whether these facilities, or wild-fires, would cause credible accidents at the PFSF resulting in radioactive releases in excess of regulatory limits, and that PFS is entitled to judgment as a matter of law.

## II. PFS IS ENTITLED TO SUMMARY DISPOSITION OF UTAH K

PFS has set forth the relevant law governing summary disposition at some length in its first motion for summary disposition, and the legal basis provided in that motion is

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<sup>1</sup> Utah K as admitted also included part of Contention 6 of former intervenor Castle Rock, but that portion was dismissed upon Castle Rock's withdrawal from this proceeding. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-99-6, 49 NRC \_\_, \_\_, slip op. at 11-14 (1999) (hereinafter "LBP-99-6"); see LBP-98-7, 47 NRC at 214.

<sup>2</sup> The only part of Utah K for which PFS is not moving for summary disposition is the impact of other facilities and wildfires on the ITP. PFS believes that the ITP is not part of the PFSF and intends to move for summary disposition on Utah B on that basis. As noted by the Board, Utah K is "subject to any merits disposition of Utah B" concerning whether a license is needed for the ITP. LBP-98-7, 47 NRC at 190 n.12.

incorporated by reference herein. See App.'s Mot. Sum. Disp. Utah C at 4-16 (April 21, 1999). PFS expects the State to file affidavits purporting to contain expert opinions in opposition to this motion and therefore the legal requirements concerning such, id. at 10-15, will be particularly relevant here. These requirements include 1) demonstration of the affiant as an expert, and 2) an explanation of facts and reasons in the affidavit supporting the affiant's expert's opinion.<sup>3</sup> An affidavit made on "information and belief" is insufficient,<sup>4</sup> as are mere unsupported conclusions.<sup>5</sup> As the Supreme Court has held, reliable expert opinion must be based on "more than subjective belief or unsupported speculation." Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 590 (1993).

Based on deposition testimony of the State's witnesses, PFS does not believe that the State's affiants will be able to withstand scrutiny when judged against these requirements. Apart from often expressing agreement that no hazard was posed to the PFSF,<sup>6</sup> those instances of claimed possible impacts were not based on facts, analyses or calculations, or reasoned scientific or technical judgement but rather mere subjective belief or unsupported speculation.<sup>7</sup> Indeed, in its recent responses filed to PFS's Third Discovery

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<sup>3</sup> See Mid-State Fertilizer Co. v. Exchange Nat'l, 877 F.2d 1333, 1339 (7<sup>th</sup> Cir. 1989); Carolina Power & Light Company (Shearon Harris Nuclear Plant, Units 1 and 2), LBP-84-7, 19 NRC 432, 447 (1984).

<sup>4</sup> Columbia Pictures Industries, Inc. v. Professional Real Estate Investors, Inc., 944 F.2d 1525, 1529 (9<sup>th</sup> Cir. 1991), aff'd on other grounds, 508 U.S. 49 (1993).

<sup>5</sup> Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-32A, 17 NRC 1170, 1177 (1983).

<sup>6</sup> See, e.g., Larsen Dep. At 42, 72; Matthews Dep. At 37-38.

<sup>7</sup> See, e.g., Gray Dep. At 59-63, 73, 75-76.

Requests, the State acknowledged that it does not have hard evidence of previous occurrences for many of the impacts to which it now claims the PFSF would be subject.<sup>8</sup> PFS submits that the discovery taken of the State reflects the lack of any genuine issue of material fact relevant to Utah K and that PFS is entitled to judgement as a matter of law.

**A. Tekoi Rocket Engine Test Facility**

PFS has specified the facts material to determining the hazard posed by the Tekoi Rocket Test Facility ("Tekoi"). See Statement of Material Facts. The PFSF will be located more than two miles from Tekoi. Brunsdon Dec. at ¶ 5. The hazards that the State has alleged that Tekoi would pose to the PFSF would arise from 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 PFSF. Utah K; Wallner Dep. at 34-35. Although the State's knowledgeable person for Tekoi identified the above events as potential hazards, he had done no evaluation on whether they would in fact pose a significant threat to the PFSF. Wallner Dep. at 16, 36-37.<sup>9</sup> Indeed, he acknowledged that the impact of a rocket motor explosion on the PFSF could be determined by a "standard calculation," but that he had done no such calculation. Id. at 37.

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<sup>8</sup> See State of Utah's Response to Applicant's Second and Third Sets of Discovery Requests with Respect to Group I Contentions, Response to Admission Request Nos. 13-29, Utah K, June 4, 1999.

<sup>9</sup> In the State's "Amended Response to Applicant's First Set of Formal Discovery Requests," dated April 29, 1999, the State included the declaration of William Wallner certifying that the State's responses to requests concerning Tekoi (Alliant Techsystems) as they pertained to Utah K were true.

In fact, performing this standard calculation shows that the explosions of rocket motors at Tekoi would pose no significant hazard to the PFSF. Brunson Dec. at ¶¶ 9-12. The largest rocket motor that can be tested at Tekoi would contain 1.2 million lbs. of Class 1.1 explosive propellant. Davis Aff. at ¶ 6.<sup>10</sup> The “standard calculation” shows that an explosion of such a motor would produce an overpressure of 1 psi or more only to a distance of 4,782 feet and an overpressure of 0.5 psi or more only out to a distance of 7,970 ft. (1.5 miles) from Tekoi, significantly less than the two plus miles to the PFSF. Brunson Dec. at ¶¶ 9-12. In Regulatory Guide 1.91, the NRC has established an overpressure of 1.0 psi as a safe threshold overpressure for explosions postulated to occur near nuclear power plants,<sup>11</sup> and the PFSF SAR indicates that systems important to safety at the PFSF would not be harmed by an explosion that created an overpressure of 1 psi or less. SAR § 3.3.6. Thus, rocket motor explosions at Tekoi would pose no significant hazard to the PFSF. Brunson Dec. at ¶ 12.

Likewise, explosions of rocket motors in transit on Skull Valley Road or the Tekoi access road would pose no significant hazard to the PFSF. The Restricted Area is more than two miles from the access road at its closest point and is 1.9 miles from Skull

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<sup>10</sup> Although 1.2 million pounds of explosive is the largest rocket motor that could be tested at Tekoi, motors currently tested at the site range in propellant weight from 4,500 to 82,000 lbs. *Id.*

<sup>11</sup> Since overpressure causes greater damage to structures at comparable distances than heat or blast fragments, overpressure governs the safe offset distance. Reg. Guide 1.91 at 1. The Licensing Board has accepted the 1 psi overpressure limit as providing that the PFSF would not suffer significant damage from an explosion. LBP-98-7, 47 NRC at 191 n.13.

Valley Road. Brunson Dec. ¶ 13. Thus, 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 PFSF. Id.

Similarly, a rocket motor escaping its test stand at Tekoi and striking the PFSF is not a credible event given the design and safety procedures employed at Tekoi and the intervening distance and terrain between Tekoi and the PFSF. Tekoi is conservatively designed to prevent rocket motors from escaping. Brunson Dec. at ¶ 14; Davis Aff. at ¶ 7. The safety design features include a large thrust block into which the motor is directed and embedded structural steel to restrain and to retain the motor in place. Id. Further, safety procedures require the careful inspection of the facility before each rocket motor is tested. Brunson Dec. at ¶ 15; Davis Aff. at ¶ 8. In nearly 25 years of operation no rocket motor has escaped a test stand at Tekoi.<sup>12</sup> Davis Aff. at ¶ 9.

Moreover, even in the highly unlikely event a motor were to escape, it is extremely remote that it would strike the PFSF. Brunson Dec. ¶ 17. First, at a distance of more than 2 miles from Tekoi, the PFSF Restricted Area would comprise a small fraction of the potential area to which an escaped rocket motor might fly. Id. Second, any rocket motor flying in the direction of the PFSF would likely strike Hickman Knolls – located between the PFSF and Tekoi and 270 feet higher than Tekoi and 400 feet higher than the PFSF – before reaching the PFSF. Id. Therefore, it is extremely remote that a rocket

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<sup>12</sup> In the early 1960s, a rocket motor escaped from a test stand (but did not leave the test range) at the Bacchus Works in Magna, Utah, the facility where Hercules, Inc., the prior owner of Tekoi, had conducted tests before Tekoi was built. Davis Aff. at ¶ 9. After that incident the safety features described above – the thrust block and restraining structural steel members – were installed at the test site to prevent such events from recurring. Id.

motor escaping the test stand would strike the PFSF. And given the highly unlikely possibility that a rocket motor would escape a test stand in the first place, it is not credible that the PFSF would be struck by a rocket motor escaping from the Tekoi facility. Id.

In short, PFS is entitled to summary disposition with respect to potential hazards posed by the Tekoi rocket test facility.<sup>13</sup>

**B. Salt Lake City International Airport**

PFS has specified the facts material to determining the hazard posed by activities at the Salt Lake City International Airport ("SLCIA"). See Statement of Material Facts. SLCIA is located approximately 50 miles northeast of the PFSF. Cole Dec. ¶ 7.<sup>14</sup> In response to a request for admission, the State has admitted that the only hazard that the SLCIA would even ostensibly pose to the PFSF would arise from aircraft flying to or from the airport.<sup>15</sup> Nevertheless, because of long distance between SLCIA and the PFSF, the lack of civilian airways near the PFSF, and the especially low crash rate of aircraft in

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<sup>13</sup> The State has suggested in its "Responses and Objections to Applicant's First Set of Formal Discovery Requests," (April 14, 1999), at 35-36 (hereinafter State 1<sup>st</sup> Disc. Resp.) that smoke from a fire or explosion at the Tekoi would have an adverse impact on the PFSF, even though the State's knowledgeable person had no idea whether smoke from Tekoi might harm the PFSF. Wallner Dep. at 38-39. In fact, smoke would have no material adverse impact on the PFSF. Any smoke plume originating at Tekoi would be greatly dispersed by the time it reached the PFSF, over two miles away, even under environmental conditions most favorable to maintaining the concentration of a smoke plume at a distance, and is unlikely to affect the PFSF at all. Johns Dec. at ¶ 6. Moreover, even if a smoke plume were to affect the electrical systems at the PFSF, such effect would be immaterial, in that the electrical systems at the PFSF are not classified as "important to safety" and thus their operation is not necessary to provide reasonable protection of the public health and safety from potential events at the PFSF. Jacobs Aff. at ¶¶ 5-6.

<sup>14</sup> James Cole, Jr. retired as a Brigadier General in 1994 after serving as the Chief of Safety of United States Air Force and directing the entire USAF safety program. He is currently Executive Director of the National Air Controllers' Association. Cole Dec. ¶¶ 1-2.

<sup>15</sup> State of Utah's Amended Responses to Applicant's First Set of Formal Discovery Requests (April 29, 1999), at 8.

the cruising phase of flight, crashes of aircraft flying to or from SLCIA pose no significant hazard to the PFSF. Cole Dec. at ¶¶ 5-10.

Under NRC case law, 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.<sup>16</sup> Here, given the distance of SLCIA from the PFSF of 50 miles, the number of takeoffs and landings would have to reach 2,500,000 ( $1000 \times 50^2$ ), before SLCIA would pose any risk to the PFSF. In 1998, there were 365,000 total takeoffs and landings at SLCIA. Cole Dec. at ¶ 7. Therefore, the risk posed to the PFSF by crashes of aircraft flying to and from SLCIA is insignificant and need not be considered.

Moreover, under NRC case law, 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.<sup>17</sup> The closest civilian airway to the PFSF is high altitude Jet Route J-56, which passes 10 nautical miles north of the PFSF site. Cole Dec.

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<sup>16</sup> Boston Edison Company (Pilgrim Nuclear Power Station, Unit 2), LBP-81-3, 13 NRC 103, 148 & n.52 (citing Reg. Guide 1.70 § 3.5.1.6); vacated on other grounds, ALAB-656, 14 NRC 965 (1981); Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 & 2), LBP-81-24, 14 NRC 175, 218-19 (1981)(citing Reg. Guide 1.70 § 3.5.1.6). Thus, for example, the Licensing Board in Pilgrim determined that Logan Airport in Boston posed no significant hazard to the Pilgrim nuclear power plant where Logan was located 26 miles from the plant. Pilgrim, LBP-81-3, 13 NRC at 148 & n.52.

<sup>17</sup> See Pilgrim, LBP-81-3, 13 NRC at 148 (citing Reg. Guide 1.70 § 3.5.1.6); Carolina Power & Light Company (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-82-119A, 16 NRC 2069, 2083 (1982). See also Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Units 1 and 2), LBP-75-66, 2 NRC 776, 799 (1975) (excluding from consideration low altitude, high speed military training routes more than five miles from the site); Illinois Power Company (Clinton Power Station, Units 1 and 2), LBP-75-59, 2 NRC 579, 622 (1975); Houston Lighting & Power Company (South Texas Project Nuclear Generating Station, Units 1 & 2), LBP-75-46, 2 NRC 271, 307-08 (1975).

at ¶ 8. For the purpose of analysis, high altitude jet routes may be taken to have a width of 8 nautical miles. Id. Thus, the closest edge of J-56 is more than 5 statute miles from the PFSF. Id. The next closest civilian airway to the PFSF is Low Altitude Route V257, which runs north and south 17 nautical miles to the east of the PFSF, on the far side of the Stansbury Mountains; the closest edge of V257 is more than 10 statute miles from the PFSF. Id. Thus, under NRC precedent, the aircraft in both J-56 and V257 and any other airway farther from the PFSF would also pose no significant hazard to it.

Finally, any civilian aircraft in the region of the PFSF would be in the cruise phase of flight given the long distance to SLCIA (or any other airport). Id. at ¶¶ 8-10. Aircraft during the cruise phase of flight exhibit very low crash rates relative to other aspects of flight,<sup>18</sup> and together with the distance from established airways, pose absolutely no potential for significant risk to the PFSF. Id.<sup>19</sup>

Thus, the Applicant is entitled to summary disposition on this part of Utah K.

### **C. Dugway Proving Ground**

PFS has specified the facts material to determining the hazard posed by activities at Dugway Proving Ground (“Dugway” or “DPG”). See Statement of Material Facts.

The hazards that the State has alleged that Dugway would pose to the PFSF would arise from: 1) the firing of conventional ground weapons in military testing and training; 2) the

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<sup>18</sup> The State’s expert, Dr. Resnikoff (Dep at 128) agrees that “most accidents take place during takeoffs and landings, and not during flights.”

<sup>19</sup> Moreover, even if a light civilian plane were to crash into the PFSF, it would not adversely impact the facility. Cole Dec., Ex. 2 at 8.

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 Michael Army Airfield, including landings of aircraft carrying "hung bombs" and the landing of the X-33 experimental aircraft.<sup>20</sup>

By virtue of the distance between the PFSF and the locations on DPG where the ostensibly hazardous activities take place, the nature of the activities, and the safety precautions that are taken with respect to all potentially dangerous activities at DPG, those activities would not pose a significant hazard to the PFSF. Carruth Aff. at ¶ 4;<sup>21</sup> Cole Dec. at ¶¶ 24-26. Indeed, in deposition State witnesses knowledgeable of activities at DPG could cite no specific, credible hazard at DPG that would threaten the PFSF.<sup>22</sup> In fact, 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 [F]acility from Dugway?" State witness David Larsen answered "Right. Right." Larsen Dep. At 72.<sup>23</sup>

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<sup>20</sup> Utah K; State 1<sup>st</sup> Disc. Resp. at 34-37 (Resp. to Interrogatory No. 1, Utah K).

<sup>21</sup> George Carruth is a former Commander of DPG, and Chief of the Chemical and Nuclear Biological and Chemical Defense Division for the U.S. Army. After his retirement from the Army, he served as Project Manager for a DOE contractor responsible for, among other things, development of requirements for dry storage of spent nuclear fuel. Carruth Aff. ¶¶ 1-2, Exh. 1.

<sup>22</sup> E.g., Gray Dep. at 46-48, 56, 59-61, 73, 75-76.

<sup>23</sup> Larsen is an environmental scientist with the Utah Department of Environmental Quality, Division of Solid and Hazardous Waste, Chemical Demilitarization Section who has worked "mainly" on Dugway and has been the "lead person" for Dugway for the past 6-7 years. Larsen Dep. at 3, 6. Larsen also was the person who supplied the original State affidavit supporting the State's claims with respect to Dugway. See Affidavit of David C. Larsen, Exh. 8 to State of Utah Contentions, Nov. 23, 1997.

First, military training exercises and the firing and testing of conventional weapons will not pose a hazard to the PFSF because 1) the firing of weapons is covered by rigid procedures, 2) the closest firing position to the PFSF is more than 15 miles away, 3) the ranges of most of the weapons are insufficient to reach the PFSF from those distances, and 4) the weapons are fired toward the south and northwest, away from the PFSF. Carruth Aff. at ¶¶ 6-7; Matthews Dep. At 13-22.<sup>24</sup> Thus, it is not credible that a conventional munition fired from Dugway would strike the PFSF.<sup>25</sup> Carruth Aff. at ¶ 8

Second, chemical munitions and agent at Dugway will pose no significant hazard to the PFSF. Carruth Aff. at ¶¶ 9-24. 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 1969. Id. at ¶¶ 9-10. Thus, activities at DPG involving chemical agent and munitions is limited to indoor testing of chemical agent, storage of agent and unexploded chemical munitions recovered from the firing ranges, and disposal of chemical agent. Id. at ¶¶ 9-24. None of these activities pose a credible hazard to the PFSF because of their distance from the PFSF and the limited quantities of agent whose release would be credible. Id.

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<sup>24</sup> General Matthews could recall only one incident in his 20 some years of experience with the Utah National Guard and as Military Advisor to the Governor where conventional munitions landed outside of Dugway. This was to the South, near Simpson Buttes, far away from the PFSF. Matthews Dep. at 15-16; Carruth Aff. Exh. 2.

<sup>25</sup> See Toledo Edison Company (Davis-Besse Nuclear Power Station, Units 2 and 3), LBP-75-75, 2 NRC 993, 1021-22 (1975), vacated on other grounds, ALAB-622, 12 NRC 667 (1980) (considering orientation and range of weapons in determining that military weapons firing posed no significant hazard); Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-79-26, 10 NRC 453, 461 (1979).

The in-door testing of chemical agent is done in facilities – located close to 20 miles from the PFSF – designed to preclude the release of chemical agent, and thus would pose no credible hazard to the PFSF. Id. at ¶¶ 9-11; Larsen Dep at 32, 40-41; Matthews Dep. at 34; Gray Dep. at 69-71. Similarly, the locations at which chemical munitions and agent are stored on DPG are located more than 17 miles from the PFSF and are stored under a strict set of rules governing their storage, including State regulations under RCRA for the storage of chemical munitions and related agent.<sup>26</sup> Carruth Aff. ¶¶ 14-17. By virtue of the distance to the PFSF and the many controls designed to protect public health and safety, the release of chemical agent from chemical munitions or agent stored at Dugway does not pose a credible hazard to the PFSF. Id. The worst credible threat posed by chemical agent at Dugway would arise from the accidental detonation of a previously unexploded 8-inch projectile filled with chemical agent GB (which is an extremely unlikely event). Id. at ¶ 18.<sup>27</sup> The distance at which such an event would pose a threat is on the order of several miles, far less than the distance to the PFSF. Id. at ¶ 19. Likewise, the disposal of chemical munitions and agents is done under rigorous

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<sup>26</sup> Indeed, the State admitted in response to a request for admission that “storage of chemical and other ordnance [at DPG] would not pose a significant hazard to the PFS ISFSI or ITP provided that: a) the chemical or other ordnance is a hazardous waste . . . , b) the hazardous waste is stored at a [DPG] storage area permitted by the State of Utah, and c) storage is conducted in accordance with the procedures authorized by § 19-6-108(3)(a) Utah Code Ann.” State 1<sup>st</sup> Disc. Resp. at 22 (Resp. to Request for Admission No. 4, Utah K). David Larsen confirmed at his deposition that the storage of chemical munitions under Utah regulations would not pose a risk to the PFSF. Larsen Dep. at 29-30.

<sup>27</sup> Detonation of more than one projectile at once is not credible because munitions stored at Dugway are stored so as to prevent sympathetic detonations and are not found close together on the range. Id. at ¶¶ 16, 36.

control, including regulation by the State under RCRA, and would pose no credible hazard to the PFSF. Id. at ¶¶ 20-24; Larsen Dep. at 32-40.

Third, biological materials present on Dugway likewise would not pose a credible hazard to the PFSF because all use of biological materials at DPG is conducted in the Life Sciences Test facility – more than 20 miles from the PFSF – under engineering and procedural controls designed to prevent the release of material to the environment. Carruth Aff. at ¶¶ 25-30.<sup>28</sup> Further, even if biological material at the test facility were to escape, it would pose no significant hazard to the PFSF, in that it would have almost no chance of surviving in the environment long enough to be carried the 20 miles from the facility to the PFSF. Id. at ¶ 29. Thus, the use of biological materials at DPG poses no credible hazard to the PFSF.<sup>29</sup>

Fourth, the transportation of chemical agent or biological materials to or from Dugway does not pose a significant hazard to the PFSF. Carruth Aff. at ¶¶ 31-33. Larger shipments of such material are performed with extraordinary safety precautions and, moreover, do not travel along Skull Valley Road. Id. at ¶ 33; Larsen Dep. at 56-57.

Small, laboratory quantities of material could potentially be shipped by common carrier

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<sup>28</sup> The United States destroyed its biological agents and munitions after a presidential decree in 1969 and DPG does not test biological agents for use in warfare. Id. at ¶ 25. All testing done at the Life Sciences Test Facility is for defensive purposes. Id. at ¶ 26.

<sup>29</sup> Indeed, the State has admitted that activities conducted at the Life Sciences Test Facility would pose no significant hazard to the PFSF so long as they were conducted “in accordance with the information, test procedures, and protocol provided to the Governor of the State of Utah’s Technical Review Committee for [DPG].” State 1<sup>st</sup> Disc. Resp. at 23 (Resp. to Request for Admission No. 5, Utah K). General Matthews, Chairman of this Committee, confirmed that he did not see “any reason why” testing of biological material at DPG would pose any hazard to the PFSF. Matthews Dep. 37-38; see also Larsen Dep. at 42.

along Skull Valley Road, but the safe packaging of those shipments is strictly regulated by the Department of Transportation so as to prevent a release even in the event of an accident. Carruth Aff. at ¶ 32. Hazardous wastes shipped from DPG do not include chemical agent but rather only chemically neutralized agent, which is far less hazardous and would not threaten the PFSF even if spilled on Skull Valley Road. Id.

Fifth, unexploded ordnance would not pose a significant hazard to the PFSF in that 1) it is extremely unlikely that such ordnance would explode spontaneously or accidentally and 2) even if it did, the PFSF is far enough away that the material in the round would not pose a significant hazard. Carruth Aff. at ¶¶ 34-38. Unexploded ordnance is not likely to be found off DPG close enough to pose a risk to the PFSF, in that the firing ranges at DPG are all at least 15 miles away and Army records of where munitions were fired at DPG give no indication that munitions were fired elsewhere. Id. at ¶¶ 34-35.

Sixth, the landing of aircraft at Michael Army Airfield on DPG would also not pose a hazard to the PFSF because the airfield is over 17 miles from the PFSF site. Cole Dec. at ¶ 17. Thus, the PFSF is outside the takeoff and landing traffic pattern. Id. Moreover, the number of aircraft flying into Michael annually is small and the crash rate those aircraft experience is very low (they are mostly transport aircraft which are similar to commercial airliners). Thus, it is highly remote that an aircraft flying into Michael would crash into the PFSF. Cole Dec. at ¶ 18.<sup>30</sup>

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<sup>30</sup> The NRC has determined that an air crash probability of less than  $10^{-7}$  per year is insignificant. Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 2), ALAB-692, 16 NRC 921, 926 (1982). PFS's analysis (performed using the method outlined in Standard Review Plan § 3.5.1.6, NUREG-

Aircraft with hung ordnance flying from the UTTR to Michael AAF would pose no significant hazard to the PFSF. First, only about five aircraft per year experience such problems. Second, aircraft on the UTTR with hung ordnance fly directly into Michael following specially developed approach procedures without crossing Skull Valley. Thus, those aircraft would not pose a hazard to the PFSF. Cole Dec. at ¶ 25.

The proposed landing of the X-33 experimental aircraft at Michael AAF will also not pose a significant hazard to the ISFSI. All flights of the X-33 are scheduled to be concluded by mid-2000. Second, the proposed flight path would not bring the X-33 over the Skull Valley, let alone the PFSF. Cole Dec. at ¶ 26; Larsen Dep. at 63.

Thus, none of the above activities concerning Dugway would pose a credible hazard to the PFSF and PFS is entitled to summary disposition of this part of Utah K.

**D. The Utah Test and Training Range and Hill Air Force Base**

PFS has specified the facts material to determining the hazard posed by activities at Hill Air Force Base ("Hill" or "Hill AFB"), the Utah Test and Training Range ("UTTR). See Statement of Material Facts. Hill Air Force Base is located on the eastern shore of the Great Salt Lake, north of Salt Lake City, approximately 65 miles from the PFSF. Cole Dec. at ¶ 12. Air Force aircraft based at Hill (and military aircraft based outside the State of Utah) train on the UTTR. Id. The UTTR is an Air Force training and

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0800) shows that the transit of military aircraft to and from Michael AAF would not pose a cumulative crash hazard of  $10^{-7}$  per year. Cole Dec. ¶ 18. The NRC has accepted the method used by PFS to determine the likelihood of an air crash. See Consumers Power Company (Big Rock Point Plant), LBP-84-32, 20 NRC 601, 641 (1984) (citing NUREG-0800 § 3.5.1.6); see also Perry, LBP-81-24, 14 NRC at 218-19 (1981).

testing range over which the airspace is restricted to military operations. Id. It is divided into a North Area, located on the western shore of the Great Salt Lake, north of Interstate 80, and a South Area, located to the west of the Cedar Mountains, south of Interstate 80 and northwest of DPG. Id.

The State has alleged that aircraft flying to and from Hill and over the UTTR would pose a crash hazard to the PFSF and that the firing of air-delivered munitions (e.g., bombs and missiles) on the UTTR would pose a hazard to the PFSF. Utah K at 74-77. By virtue of the distance from Hill to the PFSF (65 miles), the only hazard even ostensibly posed by activities there arises from crashes of aircraft flying to or from the base. Cole Dec. at ¶¶ 11, 14.<sup>31</sup> Because Hill is so far from the PFSF, general flight operations at the base pose no significant hazard.<sup>32</sup>

The only aircraft from Hill that even approach the PFSF are those that pass through Skull Valley en route to the UTTR South Area. Cole Dec. at ¶¶ 13-14.<sup>33</sup> Flying south, they pass west of Deseret Peak, near the Stansbury Mountains to practice terrain masking to evade radar, about five miles to the east of the PFSF. Id. at 13. During this portion of the flight they conduct no combat maneuvers and maintain their armament re-

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<sup>31</sup> The State's knowledgeable person concerning Hill Air Force Base, who was also named as an expert who would testify on Contention K regarding the hazards of Hill and the UTTR, admitted in deposition that no activities at Hill outside air operations would pose a hazard to the PFSF. Hawley Dep. at 32-39.

<sup>32</sup> In Pilgrim, the Licensing Board determined that air operations at Weymouth Naval Air Station would pose no significant hazard to the Pilgrim plant where Weymouth was located about 25 miles from the plant. LBP-81-3, 13 NRC at 149-50 (citing Reg. Guide 1.70).

<sup>33</sup> Other flights to and from Hill and the UTTR North Area do not transit Skull Valley and therefore pose no hazard. Id. at ¶¶ 14, 16; Hawley Dep. at 24; Matthews Dep. at 6-7.

lease switches on "safe" until they are inside Defense Department land boundaries. Id. Because aircraft en route to the UTTR South Area fly at low altitudes at a distance of about 5 miles from the PFSF, the likelihood of such an aircraft crashing and impacting the PFSF is so low so as not to pose a significant hazard to the PFSF.<sup>34</sup> Id. at ¶¶ 13, 15. The military traffic down the east side of Skull Valley is analogous to air traffic in a civilian airway more than 2 miles from the PFSF, which the NRC has excluded from consideration as posing an insignificant hazard to nuclear facilities.<sup>35</sup> Thus, it should be excluded here as posing no significant risk to the PFSF.

The use of air-delivered weapons on the UTTR would not pose a significant hazard to the PFSF. Cole Dec. at ¶ 20. First, aircraft outside DoD land boundaries (i.e., the UTTR and DPG) are required to maintain weapons release switches on "safe" and thus the likelihood of an accidental weapon release that would hit the PFSF is very low. Id. Second, weapon releases on the UTTR are carefully planned and strictly controlled; the closest weapon launch/drop boxes are about 30 miles from the PFSF. Indeed, the UTTR

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<sup>34</sup> The State implied in its discovery requests that electromagnetic emissions from the PFSF might increase the likelihood of a plane crash at the PFSF. State of Utah's Second Set of Discovery Requests Directed to the Applicant (May 13, 1999), at 23-24 (Interrogatory No. 6, Utah K). This will not be the case, in that PFS will choose its electrical equipment so it will not interfere with aircraft in the region. Jacobs Dec. at ¶ 9. Likewise, the aircraft will not interfere with the operation of PFS electrical equipment. Id. at ¶ 8; see also Cole Dec. Exh. 2 at 14.

<sup>35</sup> See Pilgrim, LBP-81-3, 13 NRC at 148; Harris, LBP-82-119A, 16 NRC at 2083; see also cases cited in note 17, *supra* (excluding from consideration low altitude, high speed military training routes more than five miles from the site). In this case the F-16s flying down Skull Valley are not engaging in high speed or stressful maneuvers the way they do in training. Cole Dec. at ¶ 13. Thus the risk from them to the PFSF is lower than was the risk posed by the aircraft to the relevant facilities in the cited cases.

has never experienced a weapon release outside an intended launch area. Cole Dec. ¶ 20.<sup>36</sup> Thus, weapon use at the UTTR is too far away to pose a risk to the PFSF.<sup>37</sup>

Cruise missiles launches at targets on the UTTR would not pose a significant hazard to the PFSF. There are only about six launches per year and the targets (in the South Area) are approximately 30 miles west of the PFSF. Cole Dec. at ¶ 21. Furthermore, cruise missile run-ins, drops, and launches are normally conducted from north to south or east to west, away from the PFSF. Id. In addition, all missiles with the capability of exceeding range boundaries are equipped with Flight Termination Systems (“FTS”) that enable the destruction of the missile if it goes off course. Id. at ¶ 22. The UTTR has never experienced the an FTS failure. Id.<sup>38</sup>

In short, PFS is entitled to summary disposition for this part of Utah K.

#### **E. Wildfires**

PFS has specified the facts material to determining the hazard posed by wildfires.

See Statement of Material Facts. A wildfire could not pose a significant hazard to the

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<sup>36</sup> General Matthews also could not recall any instance in which ordnance had been dropped outside the designated impact area. Matthews Dep. at 56-57.

<sup>37</sup> See also Reg. Guide 1.70 § 3.5.1.6 (excluding consideration of the hazard posed by practice bombing ranges more than 20 miles away from a facility as insignificant). General Matthews confirmed that he did not see any risk, apart from a “very small...maybe non-existent” risk from other flights en-route to the UTTR, on the South UTTR. Matthews Dep. at 59-60; Hawley Dep. at 31-32.

<sup>38</sup> The December 1997 cruise missile incident at Dugway – which the State has referred to in various filings – was not such a failure. Cole Dec. ¶ 23. That missile flew its programmed course and struck a trailer on the ground only because range personnel were unaware of the trailer’s presence. Id. The missile never left the “designated test area” within the UTTR/Dugway. Matthews Dep. at 65-66; Cole Dec. at ¶ 9.

PFSF. See generally Britton and Cooper Affs.<sup>39</sup> The PFSF 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, such that a wildfire could not be sustained inside the area. Britton Aff. ¶ 11; SAR Fig. 1.2-1. The nearest distance of a spent fuel storage cask to the edge of this crushed rock surface will be 162 feet. Cooper Aff. at ¶ 6. Moreover, the Restricted Area will be surrounded by a 300-foot wide barrier of fire-resistant crested wheat grass. Britton Aff. at ¶¶ 8, 10; Cooper Aff. at ¶ 5.<sup>40</sup> 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. Britton Aff. at ¶ 10; Cooper Aff. at ¶¶ 4-7.

The storage casks to be used at the PFSF are designed to withstand a temperature of at least 1475° F for significantly longer than the likely duration of a wildfire at the PFSF – even without the more than 150 foot crushed rock fire break and 300 foot barrier of fire resistant crested wheat grass.<sup>41</sup> Singh Aff. ¶ 3; Srinivasan Aff. ¶¶ 5-6; see SAR at 8.2-26 to 28. In addition, because of its thick concrete walls, a wildfire could not cause

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<sup>39</sup> Carlton Britton is a professor in the Department of Range, Wildlife, and Fisheries Management at Texas Tech University. He has performed research and published extensively in the fields of fire ecology and range management. Professor Britton has extensive firsthand knowledge of the behavior and effects of wildfires in the western United States. In his 30-year career, he has personally participated in 500 experimental test hours in which he directly measured the characteristics of wildfires. By contrast, the State's expert on wildfires, David Schen, has little such experience. Schen Dep. at 27-32.

<sup>40</sup> The License Application will be amended to reflect the addition of this 300-foot wide barrier of fire-resistant crested wheat grass around the restricted area.

<sup>41</sup> A wildfire burning in Skull Valley in the vicinity of the PFSF would produce a peak temperature of less than 1200° F for a very short period and would produce temperatures over 200° F for no more than several minutes. Britton Aff. at ¶¶ 5, 8.

harm to any spent fuel casks or structures inside the canister transfer building. Cooper Aff. at ¶¶ 7-8. 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. Id. at ¶¶ 9-12. Nor would smoke from a fire threaten either the systems, structures, and components at the PFSF important to safety or PFSF security personnel. Id. at ¶¶ 13-14; Jacobs Dec. at ¶¶ 5-6; see also Britton Aff. At ¶ 7. Further, the threat a fire might pose to systems at the PFSF other than those important to safety is irrelevant to the licensing of the PFSF. Cooper Aff. at ¶ 13. Therefore, wildfires pose no credible hazard to the PFSF and PFS is entitled to summary disposition of this part of Utah K.

### III. CONCLUSION

For the forgoing reasons, the Board should grant the Applicant summary disposition of the matters specified above.

Respectfully submitted,



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Dated: June 7, 1999

**UNITED STATES OF AMERICA**  
**NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

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

**STATEMENT OF MATERIAL FACTS**

The Applicant submits, in support of its motion for summary disposition of Utah K, this statement of material facts as to which the Applicant contends that there is no genuine issue to be heard.

**A. Tekoi Rocket Engine Test Facility**

1. The test bays for the testing of rocket motors at the Tekoi facility are located more than 2 miles from the PFSF Restricted Area. Brunson Dec. at ¶ 5, 17.
2. Hickman Knolls, which rises to an altitude approximately 400 ft. higher than the PFSF and 270 ft. higher than the Tekoi facility, is located between the PFSF and the Tekoi facility. Brunson Dec. at ¶ 17.
3. The largest rocket motor that can be tested at the Tekoi facility would contain 1.2 million pounds of propellant explosives. Davis Aff. at ¶ 6; Wallner Dep. at 13-14 (largest motor is close to a million pounds of propellant).
4. The safe offset distance for an explosion of a rocket motor may be determined by standard industry calculations. Brunson Dec at. ¶¶ 9, 12; Wallner Dep. at 37-38.
5. The overpressure caused at the PFSF Restricted Area by an explosion at the Tekoi facility of a rocket motor containing 1.2 million pounds of

propellant explosives would be less than 1 psi. Brunson Dec. at ¶ 12; Wallner Dep. at 27-28.

6. Skull Valley Road is 1.9 miles from the PFSF Restricted Area at its closest point of approach. Brunson Dec. at ¶ 13.
7. The access road to the Tekoi facility is over two miles from the PFSF at its closest point of approach. Brunson Dec. at ¶ 13.
8. The overpressure caused at the PFSF Restricted Area by an explosion, on Skull Valley Road or on the access road to the Tekoi facility, of a rocket motor containing 1.2 million pounds of propellant explosives would be less than 1 psi. Brunson Dec. at ¶ 13.
9. Blast overpressures of less than 1 psi would not cause significant damage to any systems, structures, and components important to safety at the PFSF. PFS SAR § 3.3.6.
10. A rocket motor explosion at Tekoi, on the Tekoi access road, or on Skull Valley Road, would not pose a significant hazard to the PFSF. Brunson Dec. at ¶¶ 9-13; Wallner Dep. at 13 (lack of knowledge).
11. Smoke from a fire or explosion at Tekoi would have no significant impact on the PFSF. Johns Dec. at ¶ 6, 7; see Wallner Dep. at 38-39 (lack of knowledge).
12. Any impact smoke from a fire might have on the PFSF electrical systems is irrelevant, in that such systems are not "important-to-safety" and thus their operation is not necessary to provide reasonable protection to the public health and safety. Jacobs Dec. at ¶¶ 5-6.
13. Static test bays are designed to hold rocket motors in place during testing and prevent escape in the event of a malfunction. The motors are restrained by the associated test stands and on the forward end by a thrust block or thrust tooling which measures thrust and transfers the rocket thrust to the test pad. Davis Aff. at ¶ 7; Wallner Dep. at 25-26.
14. Safety procedures at the Tekoi test facility are intended to minimize the potential for a motor static test failure. First, before a motor is static fired, it is X-rayed, its manufacturing and inspection records are reviewed, and any deviation from the motor's design is evaluated. Deviation from design requires engineering, quality, and safety approval before the motor is tested. Only motors which are expected to perform successfully are

static fired at the facility. Second, no units can be tested without the test stand in place and the thrust assembly attached. Davis Aff. at ¶ 8.

15. No rocket motor has ever escaped a test stand at Tekoi. Davis Aff. at ¶ 9.
16. The likelihood of a rocket motor escaping its moorings during a test firing, flying to the PFSF, striking a fuel cask and directly causing a release of radioactivity, or striking some other PFSF safety system and indirectly causing a release of radioactivity, is so remote as not to pose a significant risk to PFSF. Brunson Dec. at ¶ 17; see Wallner Dep. at 22-23.

①7 No other activities at or emanating from the Tekoi facility would pose a significant risk to the PFSF. Wallner Dep. at 29, 32-33.

**B. Salt Lake City International Airport**

1. Salt Lake City International Airport ("SLCIA") is located approximately 50 miles northeast of the PFSF. Cole Dec. at ¶ 7.
2. Activities at SLCIA other than aircraft flights will pose no significant hazard to the PFSF. State of Utah's Amended Responses to Applicant's First Set of Formal Discovery Requests (April 29, 1999), at 8.
3. The annual number of takeoffs plus landings at SLCIA is approximately 365,000. Cole Dec. at ¶ 7.
4. The likelihood that an aircraft flying to or from the airport would crash into the PFSF is low enough not to pose a significant hazard to the PFSF, in that the number of takeoffs plus landings annually (365,000) is less than 1,000 times the square of the distance from SLCIA to the PFSF (50 mi. squared, times 1,000 = 2,500,000). See Matthews Dep. at 74 (takeoffs and landings at SLCIA are not a hazard).
5. The closest edge of the airway nearest the PFSF, Jet Route J-56, is more than five miles from the PFSF. Cole Dec at ¶ 8.
6. The closest edge of the next closest airway to the PFSF, Low Altitude Route V-257, is more than 10 miles from the PFSF. Cole Dec. at ¶ 8.
- ⑦ Aircraft flying in airways J-56 and V257, or otherwise in the region of the PFSF, would be in the cruise mode of flight given the long distance from SLCIA or any other airport in the area. Cole Dec. at ¶¶ 8, 10.

8. Aircraft in the cruise mode of flight exhibit extremely low crash rates. Cole Dec. at ¶¶ 8, 10. Resnikoff Dep. at 128 (most accidents take place during takeoffs and landings and not during flights).

9. Aircraft in airways J-56 and V257, or otherwise in the region of the PFSF, ✓ would pose no significant hazard to it. Cole Dec. at ¶¶ 8, 10.

**C. Dugway Proving Ground**

1. The northern boundary of Dugway Proving Ground is located over 8 miles south and southwest of the PFSF site. Carruth Aff. at ¶ 4.

2. Military training exercises and the firing and testing of conventional weapons at DPG will not pose a hazard to the PFSF because: 1) the firing ✓ of weapons is covered by rigid procedures, 2) the closest firing position to the PFSF is more than 15 miles away, 3) the ranges of most of the weapons are insufficient to reach the PFSF, and 3) the weapons are fired toward the south and northwest, away from the PFSF. Carruth Aff. at ¶¶ 5-8; Matthews Dep. at 13-22; Larsen Dep. at 44-47; see Gray Dep. at 79-80 (unfamiliar with conventional weapon firing).

3. Open air testing of chemical agents was prohibited by law in 1969 (50 U.S.C. § 1512), and has not been conducted since 1969. Carruth Aff. at ¶ 9; Matthews Dep. at 33. In 1968, an incident occurred in which an aircraft spraying nerve agent VX malfunctioned and apparently killed sheep outside DPG. That incident could not be repeated because of the open air test ban. Carruth Aff. at ¶ 10.

4. Chemical munitions and chemical agent at Dugway will pose no significant hazard to the PFSF because of the distance between the locations where the munitions and agent may be found and the PFSF, and the small quantities of agent whose release would be credible. Carruth Aff. at ¶¶ 9-24; Larsen Dep. at 30, 32, 68-69 (Igloo G storage no hazard); see State 1<sup>st</sup> Disc. Resp. at 22 (RCRA permitted activities no hazard); Gray Dep. at 51-52 (permitted storage no hazard); Matthews Dep. at 32-33 (no way of estimating dispersion of chemical agent from DPG).

5. Chemical agent used at laboratories at Dugway for testing would not pose a significant threat to the PFSF because of the small quantities of agent used, the containment at the laboratories in which it is used, and the distance from the laboratory to the PFSF. Carruth Aff. at ¶¶ 11-13; Matthews Dep. at 34; Larsen Dep. at 32, 40-41; Gray Dep. at 46, 69-71.

6. The worst credible threat to the PFSF posed by chemical agent at Dugway would arise from the accidental detonation of a previously unexploded 8-inch projectile filled with chemical agent GB. The distance at which such an event would pose a threat, however, is less than the distance from Dugway to the PFSF. Moreover, the accidental detonation of such a munition is highly unlikely. Carruth Aff. at ¶¶ 18, 36; Larsen Dep. at 69.

7. The disposal of chemical munitions and agent at Dugway will not pose a hazard to the PFSF because of the extensive safety precautions taken in its disposal and the distance between the disposal location and the PFSF. Carruth Aff. at ¶¶ 20-24; Larsen Dep. at 32-40, 59-60; Gray Dep. at 66-68 (permitted disposal no hazard).

8. The United States destroyed its biological agents and munitions after a presidential decree in 1969 and does not test biological agents for use in warfare. Carruth Aff. at ¶ 25.

9. Biological materials present on Dugway would not pose a significant hazard to the PFSF because all such materials are used in the Life Sciences Test facility, under engineering and procedural controls designed to prevent the release of material to the environment. Carruth Aff. at ¶¶ 25-30; Matthews Dep. at 34-38; Larsen Dep. at 41-42; see Gray Dep. at 74 (unfamiliar with biological testing).

10. Even if biological material at the test facility were to escape, it would pose no significant hazard to the PFSF, in that it would have almost no chance of surviving in the environment long enough to be carried the 20 miles from the facility to the PFSF. Carruth Aff. at ¶ 29; see Larsen Dep. at 71-72; Gray Dep. at 73 (lack of knowledge of hazard posed by biological materials).

11. Larger shipments of chemical agent and biological material to and from DPG are performed with extraordinary safety precautions and, moreover, do not travel along Skull Valley Road. Carruth Aff. at ¶ 33; Larsen Dep. at 56-57; Gray Dep. at 86-87; see Matthews Dep. at 39-40 (unaware of chemical agent transported on Skull Valley Road).

12. Small, laboratory quantities of chemical agent and biological material could potentially be shipped by common carrier along Skull Valley Road, but the safe packaging of those shipments is strictly regulated by the Department of Transportation so as to prevent a release even in the event of an accident. Carruth Aff. at ¶ 32. Hazardous wastes shipped from DPG do not include chemical agent but rather only chemically neutralized agent, which is far less hazardous and would not threaten the PFSF even if

spilled on Skull Valley Road. Carruth Aff. at ¶ 32; Larsen Dep. at 61-62; see Matthews Dep. at 40 (unfamiliar with transportation hazard).

13. The transportation of chemical agent or biological materials to or from Dugway does not pose a significant hazard to the PFSF. Carruth Aff. at ¶¶ 31-33; see Gray Dep. at 82-83 (unfamiliar with hazard).

14. Unexploded ordnance at DPG would not pose a significant hazard to the PFSF in that 1) it is extremely unlikely that such ordnance would explode spontaneously or accidentally and 2) even if it did, the PFSF is far enough away that the material in the round would not pose a significant hazard. Carruth Aff. at ¶¶ 34-38; Larsen Dep. at 40.

15. There is no reason to believe that any unexploded ordnance is likely to be found off DPG close enough to pose a risk to the PFSF, in that the firing ranges at DPG are all at least 15 miles away and Army records of where munitions were fired at DPG give no indication that munitions were fired elsewhere. Carruth Aff. at ¶¶ 34-35; see Matthews Dep. at 41 (unfamiliar with location of unexploded ordnance); see Larsen Dep. at 51-52 (solid waste management units (SWMUs) no hazard).

16. Michael Army Airfield is located over 17 miles southwest of the PFSF site. Cole Dec. at ¶ 17.

~~17.~~ The PFSF is outside the takeoff and landing traffic pattern for Michael AAF. Cole Dec. at ¶ 17; Matthews Dep. at 24.

~~18.~~ The number of aircraft flying into Michael annually is small and the crash rate those aircraft experience is very low. Cole Dec. at ¶ 18; Matthews Dep. at 24 (hazard not analyzed). Thus, it is highly remote that an aircraft flying into Michael would crash into the PFSF. Cole Dec. at ¶ 18.

19. Aircraft with hung ordnance flying from the UTTR to Michael AAF would pose no significant hazard to the PFSF, in that 1) only about five aircraft per year experience such problems and 2) aircraft on the UTTR with hung ordnance fly directly into Michael following specially developed approach procedures without crossing Skull Valley. Cole Dec. at ¶ 25; Matthews Dep. at 25, 29 (hazard depends on flight path); Larsen Dep. at 49 (disposal of bombs no hazard).

20. Aircraft flights into and out of Michael Army Airfield, including landings of damaged aircraft, and aircraft carrying "hung bombs" or other malfunctioning ordnance, will pose no significant hazard to the PFSF.

Cole Dec. at ¶¶ 17-18, 25. See Hawley Dep. at 15 (not familiar with Michael Army Airfield); Gray Dep. at 80 (not familiar).

21. The proposed landing of the X-33 experimental aircraft at Michael AAF will not pose a significant hazard to the PFSF, in that 1) all flights of the X-33 into Michael are scheduled to be concluded by mid-2000 and 2) the proposed flight path would not bring the X-33 over the Skull Valley, let alone the PFSF. Cole Dec. at ¶ 26; Larsen Dep. at 63.

22. None of the following activities at DPG would pose a credible hazard to the PFSF: 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 chemical agent, biological materials, and hazardous materials to and from DPG; 5) unexploded ordnance, and 6) aircraft flights into and out of Michael Army Airfield, including the landings of aircraft carrying hung bombs and landings of the X-33 experimental aircraft. Carruth Aff. at ¶ 4; Cole Dec. at ¶¶ 17-18, 25-26; Larsen Dep. at 62-63, 72.

**D. Hill Air Force Base, the Utah Test and Training Range, and Michael Army Airfield**

1. Hill Air Force Base is located approximately 65 miles northeast of the PFSF. Cole Dec. at ¶ 12.

~~2.~~ Aircraft flights out of Hill AFB other than those en route to the UTTR, South Area, do not pose a hazard to the PFSF, in that they do not transit Skull Valley. Cole Dec. at ¶ 14; Hawley Dep. at 24; see id. at 20-21, 26 (not familiar with flight operations).

3. Activities at Hill Air Force Base other than aircraft flights will pose no significant hazard to the PFSF. Hawley Dep. at 36, 38-39.

4. The UTTR, North Area is over 35 miles north of the PFSF. Cole Dec. at ¶ 12.

~~5.~~ Activities on the UTTR North Area will pose no significant hazard to the PFSF because of the distance to the PFSF and the fact that aircraft flying to the UTTR North Area do not transit Skull Valley. Cole Dec. at ¶ 14; Matthews Dep. at 67; Hawley Dep. at 24; see Hawley Dep. at 26-27 (no way of estimating likelihood of plane crash).

~~6.~~ Aircraft en route to the UTTR South Area from Hill AFB fly down the east side of Skull Valley, approximately five miles from the PFSF; they

typically fly at altitudes of 3,000 to 4,000 ft. above ground level. Cole Dec. at ¶¶ 13-14; see Matthews Dep. at 48-50 (unfamiliar with exact routes used to fly from Hill to UTTR South Area); id. at 53-54 (current annual sorties on the UTTR lower than historical average).

- ~~7.~~ Other aircraft using the UTTR South Area do not transit Skull Valley. Cole Dec. at ¶ 16.
- ~~8.~~ Aircraft flying down the east side of Skull Valley conduct no combat maneuvers until they are south of Dugway Proving Ground. Cole Dec. at ¶ 13.
- ~~9.~~ Electromagnetic emissions from the PFSF would not cause an aircraft to crash at the PFSF; nor would aircraft emissions interfere with the operation of electrical or security systems at the PFSF. Jacobs Dec. at ¶¶ 8-9; Cole Dec. Exh. 2 at 14.
- ~~10.~~ Aircraft flying down the east side of Skull Valley en route to the UTTR South Area would not pose a significant hazard to the PFSF by virtue of their flying down the east side of Skull Valley, the lack of combat maneuvers while transiting the Valley, and the low crash rate of Air Force aircraft. Cole Dec. at ¶ 15; see Hawley Dep. at 14-15 (not familiar with flight operations); id. at 26-27 (no way of estimating likelihood of plane crash).
11. Targets for training and testing with air-delivered weapons on the UTTR South Area are at least 25 miles from the PFSF and run-ins for weapon delivery do not cross Skull Valley. Cole Dec. at ¶ 20; Matthews Dep. at 59.
12. Procedures for using air-delivered weapons on the UTTR carefully control where weapons are released and where they fall. The UTTR has never had a weapon released outside a designated release area. Cole Dec. at ¶ 20; Matthews Dep. at 27; id. at 56-57 (unaware of release outside designated area).
13. By virtue of the distance from the targets to the PFSF and the procedures governing their use, the use of air-delivered weapons on the UTTR South Area would not pose a significant hazard to the PFSF. Cole Dec. at ¶ 20; Matthews Dep. at 59-60; Hawley Dep. at 31-32; see id. at 27 (not familiar with how weapons are used on the UTTR).
14. Cruise missiles are fired approximately six times per year on the UTTR and most do not carry live warheads. Cole Dec. at ¶ 21.

15. Cruise missile targets are at least 30 miles from the PFSF and cruise missile run-ins, drops, and launches are normally done from north to south or east to west, away from the PFSF. Cole Dec. at ¶ 21.
16. Procedures for the use of and flight termination systems on cruise missiles are designed to prevent cruise missiles from causing harm outside their intended target areas. Cole Dec. at ¶¶ 21-22.
17. In the December 1997 cruise missile incident on Dugway Proving Ground, neither the missile nor its flight termination system failed. The missile flew its programmed course and struck a trailer on the range because range personnel were unaware of the trailer's presence on the range. Cole Dec. at ¶ 23; Matthews Dep. at 66.
18. By virtue of the small number of launches and all the safety measures taken during their use, cruise missiles on the UTTR would not pose a significant hazard to the PFSF. Cole Dec. at ¶¶ 21-22; see Hawley Dep. at 40-41 (not familiar with cruise hazards); Matthews Dep. at 63, 65-66 (safety procedures exist but do not always work; unaware of missile that crashed off of UTTR or Dugway).
19. Activities at the UTTR other than aircraft flights and munitions testing will pose no significant hazard to the PFSF. Hawley Dep. at 32-33, 36, 38-39.

**E. Wildfires**

1. The PFSF Restricted Area, in which the spent fuel casks will be located at all times, will be enclosed by two fences and a perimeter road that will have a surface of crushed rock, such that a wildfire could not be sustained inside the area. Cooper Aff. at ¶ 4; Britton Aff. at ¶ 11; SAR Fig. 1.2-1.
2. The crushed rock surface extending to the edge of the perimeter road will provide a fire break composed of crushed rock of more than 150 feet to the nearest spent fuel storage cask. Cooper Aff. at ¶ 4.
3. The crushed rock surface of the Restricted Area and the surrounding perimeter road will be surrounded by a 300-foot wide barrier of fire-resistant crested wheat grass. Cooper Aff. at ¶ 5; Britton Aff. at ¶ 10.
4. The more than 150-foot crushed rock fire break, together with the surrounding 300 feet of crested wheat grass, will preclude heat damage from a wildfire to equipment structures and life forms inside the Restricted Area. Britton Aff. at ¶¶ 8-10.

5. A wildfire burning in Skull Valley would produce a peak temperature of less than 1200 °F. for a very short period and would produce temperatures over 200 °F. for no more than several minutes. Britton Aff. at ¶¶ 5, 8.
6. The spent fuel storage casks to be used at the PFSF are designed to withstand a temperature of at least 1475 °F. for significantly longer than the likely duration of a wildfire at the PFSF. Singh Aff. at ¶ 3; Srinivasan Aff. at ¶¶ 5-6.
7. A wildfire could not cause a spent fuel cask to exceed its design temperatures. Nor would a it burn long enough for the heat to significantly degrade the safety characteristics of a spent fuel cask. Cooper Aff. at ¶ 8; Singh Aff. at ¶ 3; Srinivasan Aff. at ¶¶ 5-6..
8. Because of its thick concrete walls, a wildfire could not cause harm to any spent fuel casks or structures inside the canister transfer building. Cooper Aff. at ¶¶ 7-8.
9. 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. Cooper Aff. at ¶¶ 9-12.
10. Smoke from a fire would not threaten either the systems, structures, and components at the PFSF important to safety or PFSF security personnel. Cooper Aff. at ¶¶ 13-14; Jacobs Dec. at ¶¶ 5-6.
11. The threat a fire might pose to systems at the PFSF other than those important to safety is irrelevant to the licensing of the PFSF. Cooper Aff. at ¶ 13.

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

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

**CERTIFICATE OF SERVICE**

I hereby certify that copies of the "Applicant's Motion for Summary Disposition Of Utah Contention K and Confederated Tribes Contention B" and "Statement of Material Facts," dated June 7, 1999, and supporting affidavits/declarations 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 7th day of June, 1999, excepts as follows: a complete package of the materials, including the above as well as the exhibits to affidavits and excerpts from depositions and State discovery responses cited in the Motion (which exceed fifteen pages) will be hand delivered to everyone located in Washington D.C. the morning of June 8<sup>th</sup> and a faxed copy of exhibits to affidavits, excerpts from depositions and State discovery responses materials (other than resumes previously provided as part of PFS's discovery responses), in addition to complete package sent by first class mail, will be hand delivered to the State and Confederated Tribes the morning of June 8.

Further, two of the declarations have not been executed because the declarents are out of

the country. They will be served on the Board and the parties as soon as they are executed.

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Washington, D.C. 20555-0001  
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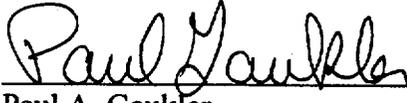
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June 7, 1999

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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

**ATTACHMENTS FOR**

**APPLICANT'S MOTION FOR PARTIAL SUMMARY DISPOSITION OF  
UTAH CONTENTION K AND CONFEDERATED TRIBES CONTENTION B**

## ATTACHMENT CONTENTS

<u>Tab No.</u>	<u>Subject</u>
1	Declaration of Bruce Brunson
2	Affidavit of Floyd Davis
3	Declaration of Jeffery Johns
4	Affidavit of Wesley Jacobs
5	Declaration of James L. Cole
6	Affidavit of George Carruth
7	Affidavit of Carlton Britton
8	Affidavit of Jerry Cooper
9	Affidavit of Krishna Singh
10	Affidavit of Ram Srinivasan
11	Excerpts from Deposition of William Wallner
12	Excerpts from Deposition of Marvin Resnikoff
13	Excerpts from Deposition of John L. Matthews
14	Excerpts from Deposition of David Larsen
15	Excerpts from Deposition of Martin Gray
16	Excerpts from Deposition of Bronson Hawley
17	Excerpts from Deposition of David Schen
18	Excerpts from State Discovery Responses