

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),

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~~ <sup>involving</sup> 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>

<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.

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 these 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>~~

<sup>30</sup> The NRC has determined that an air crash probability of less than  $10^{-2}$  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

~~0800) shows that the transit of military aircraft to and from Michael AAF would not pose a cumulative crash hazard of 10<sup>-7</sup> 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 Desert 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-~~

<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.~~ Id. at ¶¶ 13, 15.  
~~The military traffic down the east side of Skull Valley is analogous to air traffic in a ci-  
vilian airway more than 2 miles from the PFSF, which the NRC has excluded from con-  
sideration as posing an insignificant hazard to nuclear facilities.<sup>35</sup> Thus, it should be ex-  
cluded here as posing no significant risk to the PFSF.~~~~

The use of air-delivered weapons on the UTTR would not pose a significant haz-  
ard 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

<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 87-119A, 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.~~

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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

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, <sup>involving</sup> 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 <sup>involving</sup> 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~~

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 ¶ 29; 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 smash 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.