



Private Fuel Storage, L.L.C.

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AIRCRAFT CRASH IMPACT HAZARD REPORT SUPPLEMENT
DOCKET NO. 72-22 / TAC NO. L22462
PRIVATE FUEL STORAGE FACILITY
PRIVATE FUEL STORAGE L.L.C.

Reference: 1. Private Fuel Storage, "Aircraft Crash Impact Hazard at the Private Fuel Storage Facility," Rev. 3, dated June 17, 2000.

On June 17, Private Fuel Storage (PFS) submitted Reference 1, Revision 3 of its Report of the aircraft crash impact hazard posed to the proposed Private Fuel Storage Facility (PFSF). PFS's overall analysis in the Report relies in part on its assessment of the F-16 aircraft crash reports available from the Air Force covering the F-16 Class A mishaps that occurred between fiscal years 1989 and 1998. Subsequent to submitting Reference 1 to the NRC, PFS received four additional F-16 crash reports from the Air Force for that time period. PFS has assessed those reports in the same manner that it assessed the other F-16 crash reports (in Tabs H and Y to the Report) and has found that the four additional crash reports do not in any material way affect PFS's analysis or conclusion that an aircraft crash at the PFSF is not a credible event.

The four crash reports covered accidents that occurred on 8 September 1992, 18 May 1993, 8 October 1993, and 8 November 1993. None of the four accidents were caused by "Skull Valley Type Events" (as that term is used in the Report) that could or would occur in Skull Valley. Two of the accidents (8 September 1992 and 8 October 1993) occurred during the normal phase of flight but, as summarized below, involved events virtually identical to those types that PFS had previously determined were not relevant to F-16s transiting Skull Valley near the PFSF.

- 8 Sep 92: This event involved an aircraft that was en route from Incirlik, Turkey to airspace over northern Iraq. During the flight, the pilot unfastened his lap belt to relieve himself using the "piddle pack." In the process, the lap belt became wedged between the aircraft control stick and the ejection seat, forcing the aircraft into an uncontrollable nose low roll to the right. The pilot ejected and the F-16 was destroyed on impact. As PFS discussed in Reference 1 regarding a 1

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December 1990 F-16 crash (Tab H at page 21), the F-16 piddle pack would not be used over Skull Valley.

- 8 Oct 93: This event involved an aircraft that was en route from Dallas, TX to Plattsburgh AFB, NY. Because of bad weather at Plattsburgh, the aircraft had to divert to Griffiss AFB, NY. En route to Griffiss, the aircraft ran out of fuel. In coordination with ground controllers, the pilot guided the aircraft toward an area with few inhabitants and then ejected. The aircraft impacted the ground and was destroyed with minimal damage to private property. Thus, this accident occurred due to fuel starvation, which, as PFS concluded in Reference 1 regarding a 26 January 1996 F-16 crash (Tab H at page 23 n.15), would not occur with respect to F-16s transiting Skull Valley en route to the UTTR due to the short distance from Hill AFB, the departure point for the F-16s. In the event of a weather diversion upon return to Hill AFB, Salt Lake City would be the primary alternate airport because of its proximity.

The other two accidents (18 May 93 and 8 Nov 93), in which the pilots did not maintain control, were caused by aggressive maneuvers that occur in combat training during special inflight operations. As discussed in Reference 1 (at 11-13 and 37a-37b), such aggressive maneuvering does not take place in Skull Valley, but occurs towards the center of the restricted areas on the UTTR, miles away from the proposed PFSF. Further, as summarized below, the aircraft in both accidents would not have flown any appreciable distance after the accident-initiating event. Therefore these reports reinforce PFS's conclusion (Reference 1 at pages 38a and Tab Y) that accidents that occur during combat training in which the pilot does not remain in control of the aircraft typically result in impact near the point of the initiating event.

- 18 May 93: In a simulated engagement during a training mission from Nellis AFB, the aircraft entered a high-G turn and the pilot suffered G-induced Loss of Consciousness (GLOC). The pilot regained consciousness in time to eject. At the time of impact the aircraft was traveling at 500 to 600 knots at 55-70 degrees nose low attitude, i.e., a high speed, steep dive resulting in impact in near proximity to the onset of GLOC, similar to the other five GLOC accidents analyzed by PFS in Tab Y of Reference 1.
- 8 Nov 93: The aircraft was conducting a weapons delivery training mission on Restricted Area R4806, near Nellis AFB. After weapons delivery, the aircraft impacted the ground while maneuvering at low altitude in simulated reaction to a possible enemy radar missile shot. The pilot did not eject and the aircraft was destroyed on impact. By virtue of the impact with the ground while performing combat maneuvers at low altitude, the aircraft obviously did not fly any further, similar to other such collisions with the ground occurring during combat maneuvers analyzed by PFS in Tab Y of Reference 1.

The inclusion of these two additional accident reports would reduce the calculated fraction of accidents in special operations (i.e., high-stress maneuvering on training ranges) that would leave the pilot in control of the aircraft from 45 percent to 44 percent. That change, however, would have only an insignificant effect on PFS's calculation of the probability that an aircraft crash on the Utah Test and Training Range (UTTR) would result in an impact at the PFSF (increasing the probability of such impact by only about 1.0×10^{-9}). The four new accident reports would also reduce the overall fraction of all F-16 accidents attributable to engine failure from 49 percent to 48 percent. That change, however, would have no effect on PFS's analysis, in that PFS did not use that fraction in the calculation of any of its aircraft crash impact probabilities.

Because the new F-16 accident reports do not in any material way affect the results of PFS's analysis, PFS is not making any changes to Reference 1 at this time. If you have any questions regarding this submittal, please contact me at 303-741-7009.

Sincerely,



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