RAS 2773

# STATE OF UTAH

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February 14, 2001

Emile L. Julian, Assistant for
Rulemakings and Adjudications
Rulemakings and Adjudications Staff
Office of the Secretary
U.S. Nuclear Regulatory Commission
11555 Rockville Pike, One White Flint North
Mail Stop: O16G15
Washington, D.C. 20555

Re: In the Matter of Private Fuel Storage, LLC, Docket 72-22

Dear Mr. Julian;

Enclosed are the original signature pages of the following declarations, the faxed versions of which were filed in conjunction with State of Utah's Response to Applicant's Motion for Summary Disposition of Utah Contention K and State of Utah's Response to Applicant's Motion for Summary Disposition of Utah Contention L, both dated January 30, 2001:

1. Declarations of Marvin Resnikoff, PhD and Lt. Col. Hugh L. Horstman (USAF ret.), in support of State of Utah's Response to Applicant's Motion for Summary Disposition of Utah Contention K; and

2. Declarations of M. Lee Allison, PhD, R.G. and Walter J. Arabasz, PhD, in support of State of Utah's Response to Applicant's Motion for Summary Disposition of Utah Contention L.

Please contact me with any questions at (801) 366-0287. Thank you.

Sincerely,

Jean Braxton,
Legal Assistant

Enclosures: as stated
cc: PFS Docket 72-22-ISFSI Service List, without enclosure

Template=SECY-018

SECY-02

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(August 10, 2000), revision of Tab H, pg. 3. It makes this assumption because this is the largest data set and is the least subject to change, and because the PFS witnesses assume that engine failures are independent of the mode of flight. This approach is non-conservative because the category "Skull Valley-Type Events" improperly assumes engine failures have a random distribution. This is incorrect, since engine failures are more frequent when an airplane is undergoing high-stress maneuvers. Horstman Dec. ¶ 38. Thus, the percentage of accidents deemed to be caused by engine failure is artificially raised for "Normal Inflight" conditions.

**I. Frequency vs. Probability Distribution**

86. Estimating the ability of a pilot to avoid the proposed PFS facility and the use of a crash rate from FY1999 may not conservatively bound the actual accident rate of F-16s in Skull Valley during the operational lifetime of the proposed Facility. This data is simply a description of past events or a frequency distribution. In order to meaningfully project future probabilities, frequency distributions must be subject to supportable statistical manipulation. *See* Exhibit P attached hereto. Projecting future trends from past frequency distributions is uncertain, especially when it is impossible to gather where on the slope of an expected trend the current accident rate is. For example, accident rates for planes generally exhibit a decreasing, then steady, then increasing accident rate over the lifetime of service. I have argued that the data in the next few years will be on the increasing slope of the expected trend. Using data from FY1999, the latest year complete accident data were available from the Air Force at the time of these calculations, I assume that this is the most representative data of future trends. It is likely that the actual crash rates will be higher.

87. PFS has erred in neglecting to provide a statistical range of accident rates because the accident rate it chooses is not conservative. PFS used an average F-16 crash rate based on data compiled from FY89-FY98 without presenting any uncertainty estimates. Essentially PFS is assuming that all past conditions that gave rise to the 10-year average will remain steady for the future. Another option is to construct a frequency distribution of all accidents and choose the 90$^{th}$ or 95$^{th}$ percentile of this range of data.

Executed this 30$^{th}$ day of January 2001,

By _____
Marvin Resnikoff, PhD

to-air training on the UTTR South Area should be calculated using the FY2000 flight data, which showed an increase in flights. *See* ¶ 25 supra.

90. In my opinion, the crash rate for F-16s conducting air-to-air combat training should rely on the FY99 crash rate. *See* ¶ 32 supra.

**Moser Recovery**

91. The Moser Recover is flown during inclement weather conditions or during night training missions. Since 1999, the 388th Fighter Wing and the 419th Fighter Wing fly night vision goggle training missions. I believe that PFS's estimate that fewer than five percent of the sorties use the Moser Recovery route underestimates its use. Aircraft Crash Hazard Report at 48-49. PFS estimate relies on a conversation with "local" air traffic controllers. *Id.* Although, PFS did not document the communication, I assume the data was obtained some time prior to August 2000 when PFS submitted its crash report. I suspect that the estimate was not obtained from Hill AFB because PFS referred to the air traffic controllers as "local." It is unknown whether the estimate was made after night vision goggle training was implemented for all pilots. It is also unknown if the estimate was for a summer month or fiscal or calendar year. The Moser Recovery is flown on a regular basis and has a higher use during winter months due to weather. Moreover, although PFS claims the local air traffic controller's estimate is consistent with Colonel Ron Oholendt, former Vice Wing Commander of the 388th Fighter Wing, Colonel Oholendt's estimate was in November 1999 in the initial stages of implementing the night vision goggle training. In calendar year 1999, when I was stationed at Hill AFB, I flew at least four night missions in 6 months.[25] Thus, I believe PFS's estimate is not conservative.

92. The facts presented above are true and correct to the best of my knowledge, and the conclusions drawn from those facts are based on my best professional judgment.

Lt. Col. Hugh L. Horstman (USAF ret.)
Dated: January 30, 2001

[25]PFS mischaracterizes my deposition statement as total flights, not personal night flights. *See* Cole, et al Dec. ¶ 46 and PFS Summary Disposition Motion, Exhibit F, Horstman Tr. 189.

have participated in answering the Applicant's discovery to the State as well as assisted in the preparation of discovery for the State directed to the Applicant. I am familiar with and have applied NRC regulations and guidance documents as they relate to geotechnical review.

5. I was deposed by counsel for Private Fuel Storage ("PFS") on October 25 and 26, 2000. I was present at the State's deposition of PFS's geotechnical witnesses, John Clark and Marc Sterling on October 24 and 25, 2000.

6. I have reviewed PFS's Motion for Summary Disposition for Utah Contention L (December 30, 2000), its Statement of Material Facts on Which No Genuine Dispute Exist, and all attachments thereto as they relate to Basis 1. I provide this declaration in support of the State of Utah's Response the PFS's Motion for Summary Disposition, Basis 1. The following statements in this declaration are based on my experience, training, and best professional judgment.

7. It is my opinion that PFS has not used an integrated approach to evaluate both the vibratory ground motion and surface fault displacement. For example, PFS has not used the soil velocity data obtained from seismic cone penetration tests in order to convert the seismic reflection data to show depth of marker beds such as the Promontory soil and key geologic horizons within the Lake Bonneville sequence.

8. PFS's approach has not been comprehensive. PFS considers only the structural grain of the valley that runs northwest. But PFS has ignored the east-west Pass Canyon and the topographic embayment at the east-west trending Rydalch Pass, which are anomalies to the assertions that the northwest structural grain of the valley is the only aspect of the structural geology that needs to be investigated.

9. Another failure in its "integrated" approach, is that Geomatrix collected no seismic tie line(s) to correlate the PFS 1998 lines among themselves or with the Geosphere and GSI lines All of the PFS 1998 lines were shot in an east-west direction and without any perpendicular lines to tie into those east-west lines, Geomatrix's interpretation of the data is unreliable. Nor are the placement and number of seismic lines adequate to determine the length and projected locations of the East or West faults and other unnamed faults.

Executed this 30th day of January 2001.

By: _____
M. Lee Allison, Ph.D., R.G.

other than being required by current NRC regulations, is that it establishes a benchmark to which results of any probabilistic seismic hazard analysis ("PSHA") can correctly be compared. If the DSHA results reported by PFS did not meet NRC requirements, then they cannot validly be compared to PFS's PSHA results, such as done for the NRC Staff by Stamatakos et al., to evaluate the conservatism of the PSHA results.

8. In developing site ground motion adjustment factors for the design basis ground motion, Geomatrix did not account for seismic cone penetration test ("SCPT") data obtained in 1999 which show that the average shear-wave velocity in the uppermost 10 feet of the soil profile underlying the PFS site is about 540 feet per second. SAR (Rev. 9) at 2.6-30 and Figure 2.6-28. It was only after my deposition that these data were brought to my attention. The soil profile used instead by Geomatrix is one in which the average shear-wave velocity of the topmost layer (45 feet thick) is 750 feet per second, with a range from about 700 to 790 feet per second. Geomatrix Report (February 1999) at F-8 and Figure F-4. The latter soil profile was based on lower resolution shear-wave velocity information from seismic refraction surveys reported by Geosphere Midwest in 1997. Failure to correctly account for the material properties of the uppermost soil layer would affect the outcome of the ground motion analysis, regardless of whether the analysis is deterministic or probabilistic. PFS may be re-analyzing this issue but to date they have not done so. *See* PFS's letter to the NRC dated December 22, 2000 ("PFS Dec. 22, 2000 letter"), submitted to the Atomic Safety and Licensing Board on December 28, 2000, by PFS's counsel, Jay E. Silberg. Because earthquake ground motion must be expressed in a way that can be applied to engineering analyses, the seismic input or control motion may have to be specified at an appropriate point in the soil profile beneath the site rather than at the ground surface. NUREG-0800 § 3.7.1(I)(1). I defer to the State's expert Dr. Ostadan for a more complete discussion of the implications of this issue. *See* Ostadan Dec.

Walter J. Arabasz

Dr. Walter J. Arabasz

January 30, 2001