UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	)	Docket No. 72-22-ISFSI
PRIVATE FUEL STORAGE, LLC (Independent Spent Fuel Storage Installation)	)	ASLBP No. 97-732-02-ISFSI
	)	July 22, 1999

SUPPLEMENTAL DECLARATION OF MAJOR GENERAL JOHN MATTHEWS, U.S. AIR FORCE, (RETIRED) REGARDING MATERIAL FACTS IN DISPUTE WITH RESPECT TO CONTENTION K

Under penalty of perjury, I, Major General John L. Matthews, U.S. Air Force (retired), declare as follows:

1. Since the time that I prepared my initial declaration I have discovered additional information that is relevant to the Applicant's Motion for Partial Summary Disposition of Utah Contention K and Confederated Tribes Contention B ("Applicant's Motion"). Therefore, I have prepared this supplemental declaration.

2. The Applicant asserts that cruise missiles do not pose a significant hazard to the proposed ISFSI because of 1) the limited number of tests, 2) the orientation of run-ins, drops, and launches, and 3) flight termination systems (FTS). Applicant's Motion for Partial Summary Disposition at 18. In my declaration I will discuss other factors that are critical in evaluating the hazards posed by cruise missiles. In addition, I will discuss how the Applicant either incorrectly or incompletely assesses the factors it identified as important.

3. Initially, I'd like to clarify what is included in the Utah Test and Training Range ("UTTR"). The land associated with the UTTR is identified on the map as UTTR North Area and UTTR South Area. *See* Applicant's Motion, Cole Dec., Exhibit 2, map following p 9. However, because air training missions and air launched weapon tests occur on the "UTTR", the Air Force often refers to the UTTR in terms of military air space, both restricted and military operating area ("MOA") air space, available for such tests. The UTTR air space would

include the restricted military air space directly over the UTTR North and South Area land, the restricted military air space directly over the Dugway Proving Ground ("DPG") land, and the Sevier A, B, C, and D MOAs. On the map included in Exhibit 2 of General Cole's declaration, the UTTR air space is shown as the larger outline encompassing most of the map, including the land areas of UTTR North Area, UTTR South Area, and DPG. *Id.*

4. As General Cole acknowledges, cruise missile launches are conducted within military airspace around UTTR. Applicant's Motion, Cole Dec. at ¶ 21. General Cole did not clarify whether his analysis considered the air space over the UTTR land mass or the UTTR air space. In addition, General Cole failed to address the characteristics, i.e., range, speed, maneuverability, etc., of each specific type of cruise missile tested on the UTTR. The cruise missiles tested in the UTTR airspace include the AGM-86B Air Launched Cruise Missile ("ALCM"), the AGM-86C Conventional Air Launched Cruise Missile ("CALCM"), and the AGM-129 Advanced Cruise Missile ("ACM").[1] The CALCM is tested with a live warhead.[2]

5. Since 1983, 19 uncontrolled ALCMs and 2 uncontrolled CALCMs have crashed.[3] In addition, the flight termination system of 2 additional uncontrolled ALCMs had to be activated.[4] Of the 19 uncontrolled ALCMs, 2 crashed in MOAs, not on Department of Defense ("DOD") property.[5] The specific cause of the cruise missile crashes is classified information and not publically available.

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[1] July 20, 1999, email communication from Captain Mary Enges-Maas, Hill Air Force Base, Office of the Staff Judge Advocate to Connie Nakahara, State of Utah, attached hereto as Exhibit A.

[2] No nuclear devices are carried during the tests.

[3] July 22, 1999, email communication from Captain Mary Enges-Maas, Hill Air Force Base, Office of the Staff Judge Advocate to Connie Nakahara, State of Utah, attached hereto as Exhibit B.

[4] *Id.*

[5] *Id.*

6. General Cole gives two principal reasons why, in his view, cruise missile launches do not pose a significant hazard. For instance, he states that the "intended targets" are "far from the PFSF," and that "special precautions are taken to ensure that the missiles do not cause harm outside their intended target areas." Cole Declaration, ¶ 21. I disagree with General Cole on both counts.

LOCATION OF TESTING

7. First, the area in which cruise missiles can be tested and have been tested includes air space that is close to the PFSF. The military airspace around UTTR includes restricted and military operating areas, including the Sevier B MOA. The proposed ISFSI is located in the Sevier B MOA. *See* my Declaration of July 20, 1999 ("Matthews Dec.") at ¶ 12. Moreover, not only are cruise missile and advance cruise missile activities allowed to occur in the Sevier B MOA, but the Air Force actually does conduct various cruise missile exercises there.[6]

8. In fact, a cruise missile crash occurred recently in the Sevier B MOA. In June 1999, the Air Force launched a cruise missile test that was to be completed within the UTTR/DPG land boundaries. Instead, the missile crashed on U.S. Bureau of Land Management property in the southern portion of the Sevier B MOA, *outside* the designated area.[7,8]

9. The Applicant argues that "cruise missile run-ins, drops, and launches are normally conducted from north to south or east to west, away from the PFSF." Applicant's Motion at 18. However, the Applicant fails to mention that a long range cruise missile test will continue for 2 to 5 hours.[9] For each test a pre-established flight pattern is planned which requires the cruise missile to ascend

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[6] *See* Exh. A (July 20, 1999, Enges-Maas email communication).

[7] *Id.*

[8] The State does not have the exact location of the Sevier B MOA cruise missile crash at this time.

[9] *See* Exh. A (July 20, 1999, Enges-Maas email communication).

and descend various altitudes and to perform multiple turns and direction changes, many near or in the direction of the proposed ISFSI.[10] The orientation of the run-in, drops, or launches is not the sole determining factor on whether a cruise missile will fly in the direction of the proposed ISFSI.

10. The Applicant infers that because the cruise missile targets are located away from the proposed ISFSI that there is no significant impact. However, the planned flight path of cruise missiles may be within 1 nautical mile of the proposed ISFSI because the proposed ISFSI is located in the Sevier B MOA. Applicant's Motion, Cole Dec., Exhibit 3 at 11. Thus, even if the test occurs without any anomalies, a cruise missile may fly within a single nautical mile of the proposed site. In the event of an equipment or human error, a cruise missile may even fly over or into the proposed site.

11. In its Statement of Material Facts, the Applicant states that "cruise missile targets are at least 30 miles from the PFSF." Applicant Motion, Statement of Material Facts at ¶ 15 and Cole Dec. at ¶ 21. Long range cruise missiles whose impacts are planned to occur within the UTTR/DPG land boundaries have a range in excess of 30 miles. Long range cruise missiles will travel hundreds of miles during a 2 to 5 hours period.

12. In addition, a cruise missile target is located near Wig Mountain called Parkersville target complex.[11] The target complexes near Wig Mountain, including Parkersville target complex, are approximately 15 miles, not 30 miles, from the proposed ISFSI. One of the Applicant's own experts, Colonel Carruth, also indicates that "[t]he distance to the PFSF from the Wig Mountain impact areas . . . is approximately 15 miles." Applicant Motion, Carruth Aff. at ¶ 7 (*emphasis added*).

EQUIPMENT DESIGNED TO PREVENT CRUISE MISSILE FAILURE

13. The Applicant states that "the use of and *(sic)* flight termination systems on cruise missiles are designed to prevent cruise missiles from causing harm outside their intended target." Applicant's Motion, Statement of Material Facts at ¶ 16.

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[10] *Id.*

[11] *Id.*

See also Cole Declaration, ¶ 22, in which he describes FTSs which are installed in cruise missiles "that have a capability of exceeding range boundries." In addition, the Applicant states that "[t]he UTTR has never had a FTS experiences the *(sic)* an *(sic)* FTS failure." Applicant's Motion at 18. These assertions are incorrect, because they fails to acknowledge two recent instances where the FTS either wasn't installed or failed to prevent the crash of a cruise missile, but the cruise missile nevertheless exceeded its range boundaries. Although the causes of these accidents are not completely understood, it is clear that the General overstates the effectiveness of FTS systems to prevent accidents. Instead, cruise missiles, like other technical systems, are prey to both human and equipment error.

14. For example, the December 1997 cruise missile incident ("1997 Incident") at DPG demonstrates both equipment failure and human error can occur during cruise missile testing, and moreover that such failure can have devastating consequences.[12] The 1997 Incident involved the crash of a cruise missile into a trailer housing a civilian observatory.

15. During the 1997 Incident, the lead engineer attempted but failed to communicate a number of times with test team members because of equipment failure. Applicant's Motion, Cole Dec., Exhibit 3 at 2. *See also,* Cole Dec. at ¶ 23. In addition, individuals failed to identify that the observatory was located in the flight path of the cruise missile. Applicant's Motion, Cole Dec., Exhibit 3 at 11. *See also* Applicant's Motion, Cole Dec at ¶ 23. The combined communication equipment failure and human error resulted in an unfortunate incident that destroyed valuable equipment. Moreover, the cruise missile was equipped with a working FTS, but the fact that it had a working FTS still failed to prevent the accident. In this case, it was irrelevant whether the FTS itself failed or not.

16. General Cole's assertion regarding the low risk posed by cruise missiles is also belied by the June 1999, cruise missile crash on U.S. Bureau of Land Management property in the southern portion of the Sevier B MOA. As

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[12] General Cole concludes that the 1997 Incident "does not indicate that cruise missile testing is unsafe or that it would pose a hazard to the PFSF." Applicant Motion, Cole Dec. at ¶ 23. The question is not whether cruise missile testing is generally safe or unsafe, but whether it can be conducted safely in the vicinity of the PFSF.

discussed above, although the mission was to be completed within the UTTR/DPG land boundaries, the missile crashed outside the designated area. The investigation and report has not been completed, and thus there is not enough information on which to reach any firm conclusions about the causes of the accident. However, it is clear that no FTS functioned to prevent the missile from exceeding the test boundaries. Either the FTS failed, someone failed to activate it, or it was never installed. There is also no doubt that until the issue is fully investigated, General Cole has no basis for making generalizations about the safety of cruise missile launches in and around the UTTR.

17. The technical 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.

Major General John Matthews
U.S. Air Force (Retired)[13]

Dated: July 22, 1999

[13] Major General John Matthews did not have access to a facsimile machine with which to fax a signed declaration, and will be away from his office until next week. General Matthews verified that this document represents his supplemental declaration. The signed declaration will be filed next week.