



Private Fuel Storage, LLC

P.O. Box C4010, La Crosse, WI 54602-4010

John D. Parkyn, Chairman of the Board

January 25, 2001

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

LICENSE APPLICATION AMENDMENT No. 21
DOCKET NO. 72-22/TAC NO. L22462
PRIVATE FUEL STORAGE FACILITY
PRIVATE FUEL STORAGE L.L.C.

This letter submits Amendment No. 21 to the Private Fuel Storage Facility (PFSF) License Application. This amendment updates PFSF Safety Analysis Report (SAR) Section 2.2.3 to include additional information regarding testing of cruise missiles on the Utah Test and Training Range (UTTR) and to make reference to PFS's report entitled "Risk Assessment of Cruise Missile Accidents Impacting Private Fuel Storage LLC Independent Spent Fuel Storage Installation", which is being submitted to the NRC under separate cover. The additional information regarding cruise missile testing on the UTTR does not change the conclusion of SAR Section 2.2.3, that a cruise missile striking the PFSF is not a credible event.

If you have any questions regarding this submittal, please contact me at 608-787-1236 or Mr. J. L. Donnell, Project Director, at 303-741-7009.

Sincerely,

John D. Parkyn, Chairman
Private Fuel Storage L.L.C.

JDP:JRJ
Enclosure

NMSSOI Pub 12

PREFACE

PRIVATE FUEL STORAGE FACILITY

LICENSE APPLICATION

AMENDMENT 21

Enclosed are the following revisions to the Private Fuel Storage Facility License Application documents:

Safety Analysis Report – Revision 20

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

REVISION 20
PAGE a

DOCUMENT CONTROL

PAGE	REVISION
Document Control Tab	
a	20
b	20
c	20
d	20
e	20
f	20
g	20
h	20
i	20
j	20
k	20
l	20
m	20
n	20
o	20
p	20
q	20
r	20
s	20
t	20
u	20
v	20
w	20
x	20
y	20
z	20
aa	20
Table of Contents Tab	
i	10
ii	0
iii	9
iv	13
Chapter 1 Tab	
1-i	0
1-ii	17
1.1-1	0
1.1-2	3
1.1-3	3
1.1-4	0
1.2-1	17
1.2-2	17

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE b**

DOCUMENT CONTROL

PAGE	REVISION
1.3-1	17
1.3-2	17
1.3-3	17
1.3-4	0
1.4-1	17
1.4-2	4
1.5-1	17
1.5-2	0
1.6-1	17
1.6-2	0
1.7-1	17
1.7-2	17
Figure 1.1-1	3
Figure 1.1-2	2
Figure 1.2-1	3
Figure 1.3-1	12
Figure 1.3-2 (deleted)	17
Chapter 2 Tab	
2-i	19
2-ii	19
2-iii	12
2-iv	12
2-v	11
2-vi	11
2-vii	11
2-viii	12
2-ix	13
2-x	11
2-xi	11
2-xii	11
2-xiii	11
2-xiv	11
2.1-1	0
2.1-2	0
2.1-3	6
2.1-4	10
2.1-5	0
2.1-6	0
2.2-1	9
2.2-2	10
2.2-3	9
2.2-4	9
2.2-5	9

DOCUMENT CONTROL

PAGE	REVISION
2.2-6	19
2.2-7	16
2.2-8	16
2.2-9	19
2.2-10	19
2.2-11	19
2.2-12	19
2.2-13	19
2.2-14	19
2.2-15	19
2.2-16	19
2.2-17	19
2.2-18	19
2.2-19	19
2.2-20	19
2.2-21	19
2.2-22	19
2.2-23	19
2.2-24	19
2.2-25	20
2.2-26	20
2.3-1	0
2.3-2	0
2.3-3	0
2.3-4	0
2.3-5	0
2.3-6	0
2.3-7	0
2.3-8	0
2.3-9	0
2.3-10	0
2.3-11	0
2.3-12	12
2.3-13	12
2.3-14	12
2.3-15	12
2.3-16	12
2.3-17	12
2.3-18	12
2.3-19	12
2.3-20	12
2.3-21	12
2.3-22	12
2.4-1	0

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE d**

DOCUMENT CONTROL

PAGE	REVISION
2.4-2	0
2.4-3	3
2.4-4	3
2.4-5	6
2.4-6	3
2.4-7	11
2.4-8	11
2.4-9	11
2.4-10	11
2.4-11	11
2.4-12	11
2.4-13	11
2.4-14	11
2.4-15	11
2.4-16	11
2.5-1	0
2.5-2	3
2.5-3	3
2.5-4	3
2.5-5	15
2.5-6	3
2.6-1	3
2.6-2	3
2.6-3	3
2.6-4	5
2.6-5	3
2.6-6	3
2.6-7	6
2.6-8	6
2.6-9	3
2.6-10	3
2.6-11	3
2.6-12	3
2.6-13	3
2.6-14	3
2.6-15	3
2.6-16	3
2.6-17	6
2.6-18	3
2.6-19	8
2.6-20	15
2.6-21	8
2.6-22	8
2.6-23	8

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE e**

DOCUMENT CONTROL

PAGE	REVISION
2.6-24	8
2.6-25	8
2.6-26	8
2.6.26a	8
2.6.26b	8
2.6.26c	8
2.6.26d	8
2.6-27	9
2.6-28	9
2.6-29	15
2.6-30	9
2.6-31	11
2.6-32	13
2.6-33	13
2.6-34	13
2.6-35	13
2.6-36	13
2.6-36a	13
2.6-36b	13
2.6-36c	13
2.6-36d	13
2.6-36e	13
2.6-36f	13
2.6-37	13
2.6-38	9
2.6-39	11
2.6-40	11
2.6-41	11
2.6-42	11
2.6-43	11
2.6-44	11
2.6-44a	11
2.6-44b	11
2.6-44c	13
2.6-44d	13
2.6-45	9
2.6-46	13
2.6-47	13
2.6-48	9
2.6-49	13
2.6-50	17
2.6-51	11
2.6-52	9
2.6-53	9

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE f**

DOCUMENT CONTROL

PAGE	REVISION
2.6-54	9
2.6-55	13
2.6-56	9
2.6-57	13
2.6-58	13
2.6-59	13
2.6-60	9
2.6-61	13
2.6-62	13
2.6-63	13
2.6-64	13
2.6-65	13
2.6-66	13
2.6-67	13
2.6-68	13
2.6-69	9
2.6-70	9
2.6-71	13
2.6-72	17
2.6-72a	17
2.6-72b	15
2.6-73	13
2.6-74	17
2.6-75	13
2.6-76	13
2.6-77	13
2.6-78	13
2.6-79	13
2.6-80	13
2.6-81	13
2.6-81a	13
2.6-81b	13
2.6-82	13
2.6-83	13
2.6-84	9
2.6-85	9
2.6-86	9
2.6-87	11
2.6-88	9
2.6-89	9
2.6-90	9
2.6-91	10
2.6-91a	11
2.6-91b	10

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE g**

DOCUMENT CONTROL

PAGE	REVISION
2.6-92	9
2.6-93	9
2.6-94	9
2.6-95	9
2.6-96	9
2.6-97	9
2.6-98	13
2.6-99	11
2.6-100	11
2.6-100a	11
2.6-100b	11
2.6-101	9
2.6-102	9
2.6-103	9
2.6-104	9
2.6-105	9
2.6-106	9
2.6-107	9
2.6-108	13
2.6-109	13
2.6-110	9
2.6-111	13
2.6-112	13
2.6-113	11
2.6-114	11
2.6-115	11
2.6-116	9
2.7-1	11
2.7-2	5
2.8-1	11
2.8-2	11
2.8-3	11
2.8-4	11
2.8-5	11
2.8-6	19
2.8-7	12
2.8-8	20
2.8-9	20
2.8-10	17
2.8-11	17
2.8-12	15
2.8-13	15
2.8-14	11
Table 2.3-1	0

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE h**

DOCUMENT CONTROL

PAGE	REVISION
Table 2.3-2	0
Table 2.3-3	12
Table 2.3-4	12
Table 2.3-5	12
Table 2.3-6	0
Table 2.3-7	0
Table 2.3-8	1
Table 2.3-9	0
Table 2.3-10	0
Table 2.3-11	12
Table 2.6-1	6
Table 2.6-2	6
Table 2.6-3	6
Table 2.6-4 (1 of 14)	0
Table 2.6-4 (2 of 14)	0
Table 2.6-4 (3 of 14)	0
Table 2.6-4 (4 of 14)	0
Table 2.6-4 (5 of 14)	0
Table 2.6-4 (6 of 14)	0
Table 2.6-4 (7 of 14)	0
Table 2.6-4 (8 of 14)	0
Table 2.6-4 (9 of 14)	0
Table 2.6-4 (10 of 14)	0
Table 2.6-4 (11 of 14)	0
Table 2.6-4 (12 of 14)	0
Table 2.6-4 (13 of 14)	0
Table 2.6-4 (14 of 14)	0
Table 2.6-5	6
Table 2.6-6	13
Table 2.6-7	13
Table 2.6-8	13
Table 2.6-9	13
Table 2.6-10	13
Table 2.6-11	13
Table 2.6-12	11
Table 2.6-13	13
Figure 2.1-1	0
Figure 2.1-2 (1 of 2)	3
Figure 2.1-2 (2 of 2)	0
Figure 2.3-1	0
Figure 2.3-2	0
Figure 2.3-3	0
Figure 2.3-4	0
Figure 2.3-5	0

DOCUMENT CONTROL

PAGE	REVISION
Figure 2.3-6	0
Figure 2.4-1	3
Figure 2.4-2	3
Figure 2.4-3	3
Figure 2.4-4	3
Figure 2.4-5	3
Figure 2.5-1	3
Figure 2.6-1	0
Figure 2.6-2 (1 of 2)	8
Figure 2.6-2 (2 of 2)	0
Figure 2.6-3	0
Figure 2.6-4	0
Figure 2.6-5 (1 of 14)	8
Figure 2.6-5 (2 of 14)	8
Figure 2.6-5 (3 of 14)	8
Figure 2.6-5 (4 of 14)	8
Figure 2.6-5 (5 of 14)	8
Figure 2.6-5 (6 of 14)	8
Figure 2.6-5 (7 of 14)	8
Figure 2.6-5 (8 of 14)	8
Figure 2.6-5 (9 of 14)	8
Figure 2.6-5 (10 of 14)	8
Figure 2.6-5 (11 of 14)	8
Figure 2.6-5 (12 of 14)	8
Figure 2.6-5 (13 of 14)	8
Figure 2.6-5 (14 of 14)	8
Figure 2.6-6	0
Figure 2.6-7	0
Figure 2.6-8	0
Figure 2.6-9	0
Figure 2.6-10	0
Figure 2.6-11	0
Figure 2.6-12	0
Figure 2.6-13A	6
Figure 2.6-13B	6
Figure 2.6-13C	6
Figure 2.6-14A	6
Figure 2.6-14B	6
Figure 2.6-14C	6
Figure 2.6-15	0
Figure 2.6-16	0
Figure 2.6-17	6
Figure 2.6-18	6
Figure 2.6-19	8

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

REVISION 20

PAGE j

DOCUMENT CONTROL

PAGE	REVISION
Figure 2.6-20 (1 of 2)	6
Figure 2.6-20 (2 of 2)	6
Figure 2.6-21	6
Figure 2.6-22	6
Figure 2.6-23	6
Figure 2.6-24	6
Figure 2.6-25	11
Figure 2.6-26	6
Figure 2.6-27	6
Figure 2.6-28	6
Figure 2.6-29	6
Figure 2.6-30 (1 of 6)	8
Figure 2.6-30 (2 of 6)	8
Figure 2.6-30 (3 of 6)	8
Figure 2.6-30 (4 of 6)	8
Figure 2.6-30 (5 of 6)	8
Figure 2.6-30 (6 of 6)	8
Figure 2.6-31	11
Appendix 2A Tab	
Reports	8
Appendix 2B Tab	
Survey	0
Appendix 2C Tab	
Analysis	0
Appendix 2D Tab	
Deleted	3
Appendix 2E Tab	
Analysis	0
Appendix 2F Tab	
Report	9

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE k**

DOCUMENT CONTROL

PAGE	REVISION
Appendix 2G Tab	
Evaluation	10
Chapter 3 Tab	
3-i	9
3-ii	17
3-iii	17
3-iv	17
3-v	17
3-vi	0
3.1-1	17
3.1-2	17
3.1-3	17
3.1-4	17
3.1-5	17
3.1-6	0
3.2-1	0
3.2-2	17
3.2-3	17
3.2-4	1
3.2-5	9
3.2-5a	9
3.2-5b	9
3.2-6	0
3.2-7	17
3.2-8	9
3.2-8a	9
3.2-8b	9
3.2-9	7
3.2-10	5
3.2-11	5
3.2-12	17
3.2-13	17
3.2-14	9
3.2-14a	3
3.2-14b	3
3.2-15	17
3.2-16	17
3.2-17	0
3.2-18	1
3.2-19	17
3.2-20	17

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE I**

DOCUMENT CONTROL

PAGE	REVISION
3.2-21	17
3.2-22	17
3.2-23	17
3.2-24	17
3.2-24a	12
3.2-24b	12
3.2-25	5
3.2-26	1
3.2-27	1
3.2-28	1
3.2-29	1
3.2-30	1
3.2-31	1
3.2-32	1
3.3-1	17
3.3-2	17
3.3-3	17
3.3-4	17
3.3-5	12
3.3-6	1
3.3-7	13
3.3-8	13
3.3-9	13
3.3-10	10
3.3-11	10
3.3-12	10
3.4-1	0
3.4-2	17
3.4-3	17
3.4-4	9
3.4-5	9
3.4-6	17
3.4-7	17
3.4-8	9
3.5-1	0
3.5-2	17
3.6-1	0
3.6-2	0
3.7-1	17
3.7-2	0
3.7-3	12
3.7-4	12
Table 3.1-1 (deleted)	12
Table 3.1-2 (deleted)	12

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE m**

DOCUMENT CONTROL

PAGE	REVISION
Table 3.1-3 (1 of 2, deleted)	17
Table 3.1-3 (2 of 2) (deleted)	17
Table 3.2-1	12
Table 3.2-2	12
Table 3.2-3 (deleted)	17
Table 3.4-1	17
Table 3.6-1 (1 of 5)	17
Table 3.6-1 (2 of 5)	13
Table 3.6-1 (3 of 5)	17
Table 3.6-1 (4 of 5)	17
Table 3.6-1 (5 of 5)	17
Chapter 4 Tab	
4-i	4
4-ii	17
4-iii	10
4-iv	17
4-v	9
4-vi	17
4-vii	17
4-viii	17
4-ix	17
4-x	17
4.1-1	17
4.1-2	17
4.1-3	0
4.1-4	16
4.2-1	17
4.2-2	0
4.2-3	12
4.2-4	12
4.2-5	12
4.2-6	12
4.2-7	12
4.2-8	13
4.2-9	12
4.2-10	12
4.2-11	12
4.2-12	4
4.2-13	1
4.2-14	12
4.2-15	12
4.2-16	17
4.2-16a	7

DOCUMENT CONTROL

PAGE	REVISION
4.2-16b	12
4.2-16c	10
4.2-16d	7
4.2-17	8
4.2-18	12
4.2-19	12
4.2-20	12
4.2-20a	12
4.2-20b	12
4.2-21	4
4.2-22	17
4.2-23	17
4.2-24	17
4.2-25	17
4.2-26	17
4.2-27	17
4.2-28	17
4.2-29	17
4.2-30	17
4.2-31	17
4.2-32	17
4.2-33	17
4.2-34	17
4.3-1	9
4.3-2	9
4.3-3	12
4.3-4	13
4.3-5	13
4.3-6	9
4.3-7	10
4.3-8	13
4.3-9	13
4.3-10	10
4.3-11	10
4.3-12	16
4.3-13	10
4.3-14	16
4.3-15	16
4.3-16	10
4.3-17	10
4.3-18	10
4.3-19	16
4.3-20	13
4.3-21	13

DOCUMENT CONTROL

PAGE	REVISION
4.3-22	10
4.4-1	0
4.4-2	0
4.5-1	17
4.5-2	17
4.5-3	17
4.5-4	8
4.5-5	17
4.5-6	17
4.6-1	0
4.6-2	0
4.7-1	17
4.7-2	13
4.7-3	15
4.7-4	0
4.7-5	6
4.7-6	15
4.7-6a	13
4.7-6b	9
4.7-6c	9
4.7-6d	17
4.7-6e	18
4.7-6f	9
4.7-7	9
4.7-8	9
4.7-8a	13
4.7-8b	15
4.7-8c	9
4.7-8d	9
4.7-8e	17
4.7-8f	17
4.7-8g	15
4.7-8h	15
4.7-8i	15
4.7-8j	13
4.7-9	3
4.7-10	2
4.7-11	3
4.7-12	17
4.7-12a	17
4.7-12b	17
4.7-13	17
4.7-13a	13
4.7-13b	13

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

REVISION 20

PAGE p

DOCUMENT CONTROL

PAGE	REVISION
4.7-13c	6
4.7-13d	6
4.7-13e	6
4.7-13f	6
4.7-13g	6
4.7-13h	6
4.7-13i	9
4.7-13j	6
4.7-14	0
4.7-15	12
4.7-16	0
4.7-17	12
4.7-18	0
4.7-19	12
4.7-20	12
4.7-21	12
4.7-22	12
4.7-23	17
4.7-24	17
4.7-25	17
4.7-26	17
4.8-1	17
4.8-2	17
4.8-3	16
4.8-4	9
4.8-5	6
4.8-6	15
4.8-7	6
4.8-8	17
4.8-9	13
4.8-10	16
Table 4.1-1 (1 of 7)	17
Table 4.1-1 (2 of 7)	17
Table 4.1-1 (3 of 7)	17
Table 4.1-1 (4 of 7)	17
Table 4.1-1 (5 of 7)	17
Table 4.1-1 (6 of 7)	0
Table 4.1-1 (7 of 7)	0
Table 4.2-1	7
Table 4.2-2	12
Table 4.2-3	12
Table 4.2-4 (deleted)	17
Table 4.2-5 (deleted)	17
Table 4.2-6 (deleted)	17

DOCUMENT CONTROL

PAGE	REVISION
Table 4.2-7	13
Table 4.2-8	9
Table 4.7-1	12
Table 4.7-2	4
Table 4.7-3 (deleted)	17
Figure 4.1-1	2
Figure 4.1-2	0
Figure 4.1-3	0
Figure 4.1-4	0
Figure 4.2-1	12
Figure 4.2-2 (1 of 3)	12
Figure 4.2-2 (2 of 3)	12
Figure 4.2-2 (3 of 3)	12
Figure 4.2-3	12
Figure 4.2-4 (deleted)	17
Figure 4.2-5 (1 of 4) (deleted)	17
Figure 4.2-5 (2 of 4) (deleted)	17
Figure 4.2-5 (3 of 4) (deleted)	17
Figure 4.2-5 (4 of 4) (deleted)	17
Figure 4.2-6 (deleted)	17
Figure 4.2-7	8
Figure 4.2-8	0
Figure 4.3-1	11
Figure 4.5-1 (1 of 2)	12
Figure 4.5-1 (2 of 2)	12
Figure 4.5-2 (deleted)	17
Figure 4.5-3 (1 of 2)	11
Figure 4.5-3 (2 of 2)	2
Figure 4.5-4	17
Figure 4.5-5	17
Figure 4.5-6 (1 of 4)	3
Figure 4.5-6 (2 of 4)	3
Figure 4.5-6 (3 of 4)	3
Figure 4.5-6 (4 of 4)	3
Figure 4.7-1 (1 of 3)	11
Figure 4.7-1 (2 of 3)	2
Figure 4.7-1 (3 of 3)	11
Figure 4.7-2	0
Figure 4.7-3 (deleted)	17
Figure 4.7-4	0
Figure 4.7-5	3
Figure 4.7-6	3
Figure 4.7-7	6
Figure 4.7-8	11

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE r**

DOCUMENT CONTROL

PAGE	REVISION
Chapter 5 Tab	
5-i	0
5-ii	7
5-iii	0
5-iv	17
5-v	17
5-vi	0
5.1-1	17
5.1-2	0
5.1-3	3
5.1-4	2
5.1-5	17
5.1-6	17
5.1-7	13
5.1-8	17
5.1-9	17
5.1-10	13
5.2-1	17
5.2-2	17
5.2-3	17
5.2-4	17
5.2-5	17
5.2-6	17
5.3-1	0
5.3-2	0
5.4-1	0
5.4-2	0
5.5-1	1
5.5-2	0
5.6-1	0
5.6-2	0
5.7-1	17
5.7-2	0
Table 5.1-1 (1 of 2)	6
Table 5.1-1 (2 of 2)	6
Table 5.1-2 (1 of 2) (deleted)	17
Table 5.1-2 (2 of 2) (deleted)	17
Figure 5.1-1	1
Figure 5.1-2	0
Figure 5.1-3 (deleted)	17
Figure 5.1-4 (deleted)	17
Figure 5.1-5	0

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE s**

DOCUMENT CONTROL

PAGE	REVISION
Chapter 6 Tab	
6-i	0
6-ii	0
6.1-1	17
6-1-2	13
6.2-1	1
6.2-2	0
6.3-1	0
6.3-2	0
6.4-1	17
6.4-2	7
6.4-3	7
6.4-4	7
6.5-1	13
6.5-2	0
6.6-1	17
6.6-2	0
Chapter 7 Tab	
7-i	17
7-ii	17
7-iii	17
7-iv	17
7-v	0
7-vi	0
7.1-1	0
7.1-2	0
7.1-3	0
7.1-4	0
7.1-5	17
7.1-6	0
7.1-7	0
7.1-8	13
7.1-9	3
7.1-10	3
7.1-11	3
7.1-12	3
7.2-1	17
7.2-2	17
7.2-3	17
7.2-4	17
7.2-5	17
7.2-6	17

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE t**

DOCUMENT CONTROL

PAGE	REVISION
7.3-1	0
7.3-2	0
7.3-3	9
7.3-3a	13
7.3-3b	13
7.3-4	17
7.3-5	17
7.3-6	17
7.3-7	17
7.3-8	17
7.3-9	17
7.3-10	17
7.3-11	17
7.3-12	17
7.3-13	17
7.3-14	17
7.3-15	17
7.3-16	17
7.4-1	17
7.4-2	17
7.4-3	17
7.4-4	12
7.5-1	3
7.5-2	0
7.5-3	8
7.5-4	8
7.5-5	8
7.5-6	8
7.5-7	8
7.5-8	8
7.6-1	17
7.6-2	0
7.6-3	13
7.6-4	13
7.7-1	17
7.7-2	17
7.7-3	10
7.7-4	17
Table 7.3-1	10
Table 7.3-2 (deleted)	17
Table 7.3-3	10
Table 7.3-4 (deleted)	17
Table 7.3-5	10
Table 7.3-6	17

DOCUMENT CONTROL

PAGE	REVISION
Table 7.3-7	10
Table 7.3-8	17
Table 7.4-1 (1 of 4)	10
Table 7.4-1 (2 of 4)	10
Table 7.4-1 (3 of 4)	10
Table 7.4-1 (4 of 4)	10
Table 7.4-2 (1 of 4) (deleted)	17
Table 7.4-2 (2 of 4) (deleted)	17
Table 7.4-2 (3 of 4) (deleted)	17
Table 7.4-2 (4 of 4) (deleted)	17
Figure 7.3-1	0
Figure 7.3-2	17
Chapter 8 Tab	
8-i	0
8-ii	7
8-iii	16
8-iv	9
8-v	9
8-vi	13
8.1-1	9
8.1-2	17
8.1-3	0
8.1-4	17
8.1-5	17
8.1-6	17
8.1-7	7
8.1-8	17
8.1-9	17
8.1-10	17
8.1-11	0
8.1-12	17
8.1-13	17
8.1-14	17
8.1-15	17
8.1-16	17
8.1-17	13
8.1-18	17
8.1-19	7
8.1-20	7
8.2-1	9
8.2-2	3
8.2-3	17
8.2-4	17

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE v**

DOCUMENT CONTROL

PAGE	REVISION
8.2-5	17
8.2-6	7
8.2-7	7
8.2-8	17
8.2-9	17
8.2-10	17
8.2-11	7
8.2-12	17
8.2-13	3
8.2-14	17
8.2-15	17
8.2-15a	17
8.2-15b	17
8.2-16	17
8.2-17	17
8.2-18	17
8.2-19	17
8.2-20	17
8.2-21	10
8.2-22	13
8.2-23	11
8.2-23a	17
8.2-23b	13
8.2-23c	17
8.2-23d	11
8.2-23e	11
8.2-23f	13
8.2-23g	13
8.2-23h	13
8.2-23i	14
8.2-23j	13
8.2-23k	14
8.2-23l	14
8.2-23m	14
8.2-23n	14
8.2-23o	14
8.2-23p	16
8.2-23q	16
8.2-23r	16
8.2-24	13
8.2-25	13
8.2-26	11
8.2-27	11
8.2-28	13

DOCUMENT CONTROL

PAGE	REVISION
8.2-29	17
8.2-29a	17
8.2-29b	17
8.2-29c	17
8.2-29d	11
8.2-29e	17
8.2-29f	18
8.2-29g	18
8.2-29g1	18
8.2-29g2	18
8.2-29h	11
8.2-29i	11
8.2-29j	11
8.2-29k	11
8.2-29l	11
8.2-29m	13
8.2-29n	17
8.2-29o	17
8.2-29p	13
8.2-29q	17
8.2-29r	11
8.2-30	17
8.2-31	17
8.2-32	13
8.2-32a	17
8.2-32b	17
8.2-32c	17
8.2-32d	17
8.2-32e	17
8.2-32f	16
8.2-32g	16
8.2-32h	16
8.2-33	17
8.2-34	17
8.2-35	17
8.2-36	17
8.2-37	17
8.2-38	17
8.2-39	17
8.2-40	17
8.2-41	17
8.2-42	17
8.2-43	13
8.2-44	17

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

REVISION 20

PAGE x

DOCUMENT CONTROL

PAGE	REVISION
8.2-45	17
8.2-46	17
8.2-47	17
8.2-48	17
8.2-49	7
8.2-50	17
8.2-51	17
8.2-52	9
8.3-1	7
8.3-2	7
8.4-1	17
8.4-2	17
8.4-3	9
8.4-4	9
8.4-5	9
8.4-6	9
8.4-7	17
8.4-8	17
8.4-9	9
8.4-10	13
8.4-11	17
8.4-12	10
8.5-1	17
8.5-2	9
8.5-3	17
8.5-4	9
8.5-5	9
8.5-6	10
8.5-7	17
8.5-8	17
8.5-9	13
8.5-10	17
Table 8.1-1	17
Table 8.1-2	17
Table 8.2-1	17
Figure 8.2-1	15
Chapter 9 Tab	
9-i	0
9-ii	1
9-iii	4
9-iv	4
9-v	0
9-vi	0

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

**REVISION 20
PAGE y**

DOCUMENT CONTROL

PAGE	REVISION
9.1-1	0
9.1-2	0
9.1-3	0
9.1-4	4
9.1-5	4
9.1-6	4
9.1-7	4
9.1-8	4
9.1-9	4
9.1-10	13
9.1-10a	13
9.1-10b	13
9.1-10c	13
9.1-10d	13
9.1-11	13
9.1-12	4
9.1-13	13
9.1-14	0
9.1-15	1
9.1-16	1
9.1-16a	1
9.1-16b	1
9.1-17	0
9.1-18	0
9.1-19	0
9.1-20	0
9.1-21	0
9.1-22	0
9.1-23	0
9.1-24	3
9.1-25	4
9.1-26	4
9.1-27	4
9.1-28	4
9.1-29	4
9.1-30	4
9.2-1	13
9.2-2	13
9.2-2a	1
9.2-2b	1
9.2-3	17
9.2-4	17
9.2-5	0
9.2-6	0

**PRIVATE FUEL STORAGE FACILITY
SAFETY ANALYSIS REPORT**

REVISION 20

PAGE z

DOCUMENT CONTROL

PAGE	REVISION
9.2-7	1
9.2-8	1
9.2-8a	17
9.2-8b	1
9.3-1	4
9.3-2	4
9.3-3	13
9.3-4	4
9.3-5	4
9.3-6	4
9.3-7	4
9.3-8	4
9.4-1	3
9.4-2	4
9.4-2a	4
9.4-2b	4
9.4-3	3
9.4-4	3
9.4-5	3
9.4-6	3
9.4-7	3
9.4-8	3
9.5-1	0
9.5-2	13
9.5-3	0
9.5-4	0
9.6-1	0
9.6-2	0
9.7-1	0
9.7-2	0
9.7-3	0
9.7-4	0
Figure 9.1-1	4
Figure 9.1-2	4
Figure 9.1-3	12
Chapter 10 Tab	
10-i	13
10-ii	13
10.1-1	13
10.1-2	13

DOCUMENT CONTROL

PAGE	REVISION
Appendix 10A Tab	
Technical Specification Bases	13
Chapter 11 Tab	
11-i	0
11-ii	0
11.1-1	4
11.1-2	4
11.1-3	4
11.1-4	0
11.1-5	0
11.1-6	0
11.1-7	0
11.1-8	0
11.1-9	0
11.1-10	0
11.2-1	0
11.2-2	0

AAF for hung ordnance recovery/landing. Pilots maintain a stable flight path and remain in Visual Meteorological Conditions by avoiding clouds. Clover Control provides assistance as required and ensures Michael AAF is prepared to receive the aircraft to include fire fighting equipment and medical personnel standing by. The pilot maneuvers the aircraft to the northwest, approximately 20 statute miles from the proposed PFSF site, and proceeds to Michael AAF, avoiding rapid or steep turns and abrupt climbs or descents. Test facilities or any populated areas are avoided. A long straight-in approach with a shallow rate of descent is established to a full stop landing on runway 12 (to the southeast). Runway 12 is 13,125 ft long and 200 ft wide with a barrier cable at the end. After landing, Dugway Proving Ground Explosive Ordnance Disposal personnel inspect and safe the ordnance.

The UTTR record of no unintended release of live ordnance outside of designated launch/release areas and the procedure for landing aircraft with hung ordnance, which avoids populated areas and approaches Michael Army Airfield from the northwest, away from the PFSF, assures that hung ordnance will not impact the PFSF. Consequently, hung ordnance striking the PFSF is not a credible event.

Cruise Missiles

PFS has assessed the hazard posed to the PFSF by cruise missile testing. (PFS January 2001) Missile launches (where the missiles are released from aircraft carrying them) are generally confined to the northern and western portions of the UTTR and are at least 30 statute miles away from the PFSF site. Run-ins, drops, and launches are normally done from north to south or east to west and are thus directed away from the PFSF site. Cruise missile targets on the UTTR are located at least 18 miles from the PFSF. Cruise missile flight paths on the UTTR are plotted to approach no closer than within 10 nautical miles of the PFSF site. Cruise missiles and other weapon systems that have a capability of exceeding range boundaries are required to have a Flight

Termination System (FTS) installed prior to testing on the UTTR. The FTSs are designed to promptly terminate the weapons' flight paths in the event of an anomaly. Before a bomber launches a test cruise missile, the Mission Control Center verifies that the missile's remote control systems are working properly. At all times throughout the flight the cruise missile FTS must detect a signal that in effect permits the missile to keep flying (FTS discussed in USAF Accident Investigation Board Report, 12/10/97). If the missile does not detect the signal for a preset time, the FTS activates. Safety Officers can also activate the FTS, if required, at any time. The Range Safety Officer at Mission Control and the Airborne Range Instrumentation Aircraft are also both capable of terminating missile flight almost immediately. The UTTR has never experienced an FTS failure and the Air Force is aware of no instance where a cruise missile impacted the ground more than one mile laterally from the missile's plotted flight path. Consequently, a cruise missile striking the PFSF is not a credible event.

National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, National Climatic Data Center, 1975-1995, Storm data and unusual weather phenomena with late reports and corrections.

National Oceanic and Atmospheric Administration, National Climatic Data Center, U.S. Department of Commerce, "Solar and Meteorological Surface Observation Network, 1961 - 1990", Volume III, Western U.S., Version 1.0, September 1993.

NAVFAC, 1982, DM 7.1, Soil Mechanics, Dept of the Navy, Naval Facilities Eng'g, Command, Alexandria, VA.

Newmark, N. M., 1965, Effects of earthquakes on dams and embankments, Fifth Rankine Lecture, Geotechnique, Institution of Civil Engineers, London, 15(2), pp139-60.

Newmark, N. M., and Rosenblueth, E., 1971, Fundamentals of Earthquake Engineering, Prentice-Hall, Englewood Cliffs, NJ.

Nussbaum, P. J., and Colley, B. E., 1971, *Dam Construction and Facing with Soil-Cement*, Portland Cement Association Publication RD010.01W.

Oaks, S.D., 1987, Effects of six damaging earthquakes in Salt Lake City, Utah, in Gori, P.L., and Hays, W.W., editors, Assessment of regional earthquake hazards and risk along the Wasatch Front, Utah: U.S. Geological Survey Open-file Report 87-585, vol. 2, pp. P-1-95.

Oviatt, C.G., Currey, D.R., and Miller, D.M., 1990, Age and paleoclimatic significance of the Stansbury shoreline of Lake Bonneville, northwestern Great Basin: Quaternary Research, vol. 33, pp. 291-305.

Pacific Gas and Electric Company, 1988, Final Report of the Diablo Canyon Long Term Seismic Program, Docket Nos. 50-275 and 50-323, July 31, 1988.

Pasquill, F., 1961, The estimation of the dispersion of windborne material: Meteorol. Mag., 90, 1063, 33-49.

Pechmann, J.C. and Arabasz, W.J., 1995, The problem of the random earthquake in seismic hazard analysis: Wasatch Front region, Utah, in Lund, W.R., editor, Environmental and engineering geology of the Wasatch Front region: Utah Geological Association Publication 24, pp. 77-93.

PFS Letter, Parkyn to Delligatti (NRC), Request for Exemption to 10 CFR 72.102(f)(1), dated April 2, 1999.

PFS Letter, Parkyn to U.S. NRC Document Control Desk, Request for Exemption to 10 CFR 72.102(f)(1), dated August 24, 1999.

PFS August 2000, "Report to Nuclear Regulatory Commission, Aircraft Crash Impact Hazard at the Private Fuel Storage Facility," Revision 4, August 11, 2000; with Addendum dated January 19, 2001.

PFS January 2001, "Risk Assessment of Cruise Missile Accidents Impacting Private Fuel Storage LLC Independent Spent Fuel Storage Installation", Revision 1, dated January 25, 2001.

Pyke, R., H. B. Seed, and C. K. Chan, 1975, "Settlement of Sands Under Multidirectional Shaking," *Journal of the Geotechnical Engineering Division*, ASCE, 101(4), 379-398.

Ramsdell, J. V. and G. L. Andrews, 1986, Tornado climatology of the contiguous United States: Prepared by Pacific Northwest Laboratory for the U.S. Nuclear Regulatory Commission, NUREG/CR-4461, PNL-5697.

Rigby, J.K., 1958, Geology of the Stansbury Mountains, Tooele County, Utah: Utah Geological Society Guidebook 13, 168 pp.

Roberts, R.J., Crittenden, M.D., Jr., Tooker, E.W., Morris, H.T., Hose, R.K., and Cheney, T.M., 1965, Pennsylvanian and Permian basins in northwestern Utah, northeastern Nevada and south-central Idaho: Amer. Assoc. Petrol. Geologists Bulletin, vol. 49, pp. 1926-1956.

Robertson, P. K., and Campanella, R. G., 1988, Guidelines for Use, Interpretations, and Application of the Cone Penetration and Piezocone Penetration Test, *Soil Mechanics Series No. 105*, Department of Civil Engineering, University of British Columbia, Vancouver, Canada.

Rollins, K. M., and Williams, T., 1991, Collapsible Soil Hazard Mapping for Cedar City, Utah," Proceedings of the 1991 Annual Symposium on Engineering Geology & Geotechnical Engineering, No. 27, Pocatello, Idaho State University, 31 1.

Sack, Dorothy, 1993, Quaternary geologic map of Skull Valley, Tooele County, Utah: Utah Geological Survey Map 150, Scale 1:100,000, 16 p.

Sbar, M.L., and Barazangi, M., 1970, Tectonics of the intermountain seismic belt, western United States, Part I, microearthquake seismicity and composite fault plane solutions: Geological Society of America Abst. with Programs, vol. 2, p. 675.

Schimming, B.B., H.J. Haas, and H.C. Saxe, 1966. Study and Dynamic and Static Envelopes. *Journal of Soil Mechanics and Foundation Division*, ASCE Vol. 92, No. SM2 (March), pp. 105-24.

Schmertmann, J. H., 1970, "Static cone to compute static settlement over sand," *Journal of the Soil Mechanics and Foundations Division, ASCE*, 96(SM3), 1011-43.

Schmertmann, J. H., 1978, "Guidelines for cone penetration test, performance and design," US Federal Highway Administration, Washington, D.C., Report FHWA TS-78-209, 145.

Scott, W.E., 1988, Temporal relations of lacustrine and glacial events at Little Cottonwood Canyon and Bells Canyon, Utah, in Machette, M.N. and Currey, D.E., editors: *In the footsteps of G.K. Gilbert - Lake Bonneville and neotectonics of the eastern Basin and Range Province, guidebook for field trip twelve, Utah Geological and Mineral Survey Misc. Publ. 88-1*, pp. 78-82.

Seed, H. B., and Whitman, R. V., 1970, "Design of Earth Retaining Structures for Dynamic Loads," ASCE Specialty Conference on Lateral Stresses in the Ground and the Design of Earth Retaining Structures, pp 103-147.

Silver, M. and Seed, H. B., 1971, "Volume Changes in Sands During Cyclic Loading," *Proceedings of the American Society of Civil Engineers, Journal of the Soil Mechanics and Foundations Division*, Vol 97, SM9, September.

Simiu, E., M. J. Changery, and J. J. Filliben, 1979, Extreme wind speeds at 129 stations in the contiguous United States, NBS building science series 118: U.S. Department of Commerce, National Bureau of Standards.

Slemmons, D.B., 1980, Design earthquake magnitudes for the western Great Basin, in *Proc. of Conference X, Earthquake hazards along the Wasatch-Sierra Nevada frontal fault zones: U.S. Geological Survey Open-file Report 80-801*, pp. 62-85.

Smith, R.B., 1978, Seismicity, crustal structure, and intraplate tectonics of the interior of the western Cordillera, in Smith, R.B., and Eaton, G.P., editors, *Cenozoic tectonics and regional geophysics of the western Cordillera: Geological Society of America Memoir 152*, pp. 111-144.

Smith, R.B., and Arabasz, W.J., 1991, Seismicity of the intermountain seismic belt, in Slemmons, D.B., Engdahl, E.R., Zoback, M.D., and Blackwell, D.C., eds., *Neotectonics of North America: Geological Society of America, Decade Map Volume 1*, pp. 185-228.

Smith, R.B., and Sbar, M.L., 1970, Seismicity and tectonics of the intermountain seismic belt, western United States, Part II, Focal mechanism of major earthquakes: *Geological Society of America Abst. with Programs*, vol. 2, p. 657.

Smith, R.B., and Sbar, M.L., 1974, Contemporary tectonics and seismicity of the western United States with emphasis on the intermountain seismic belt: *Geological Society of America Bulletin*, vol. 85, pp. 1205-1218.

Smith, R.B., Nagy, W.C., Julander, D.R., Viveiros, J.J., Baker, C.A., and Gants, D.G., 1989, Geophysical and tectonic framework of the eastern Basin and Range-Colorado Plateau-Rocky Mountain transition, in Pakiser, L.C., and Mooney, W.D., eds., Geophysical framework of the continental United States: Geological Society of America Memoir 172, pp. 205-233.

Stewart, J.H., 1976, Late Precambrian evolution of North America: plate tectonic implication: *Geology*, vol. 4, pp. 11-15.

Stewart, J.H., 1978, Basin-range structure in western North America: A review, in Smith, R.B. and Eaton, G.P., editors, Cenozoic tectonics and regional geophysics of the western Cordillera: Geological Society of America Memoir 152, pp. 1-31.

Stickney, M.C., and Bartholomew, M.J., 1987, Seismicity and late Quaternary faulting of the northern Basin and Range province, Montana and Idaho: *Seismological Society of America Bulletin*, vol. 77, pp. 1602-1625.

Stokes, W.L., 1986, Geology of Utah, Utah Museum of Natural History and Utah Geological and Mineral Survey, Salt Lake City, UT, 280 pp.

Stone & Webster Engineering Corporation (SWEC), 1995. Evaluation of H-Piles, Waste Packaging Area (WPA), and Condensate Demineralizer Waste Evaporator Building (CDWEB), Sequoyah Nuclear Power Plant – Units 1 and 2 (FSAR issues). Tennessee Valley Authority, SE-CEB-SWEC. Calculation No. SCG1S505, Revision 0 (April).

Stone & Webster Engineering Corporation (SWEC), 1998a, Calculation No. 05996.02-SC-6, Revision 0, Finite Element Analysis of Canister Transfer Building.

Stone & Webster Engineering Corporation (SWEC), 1999a, Calculation No. 05996.02-G(B)-12, Revision 1, Flood Analysis with a Larger Drainage Basin.

Stone & Webster Engineering Corporation (SWEC), 1999b, Calculation No. 05996.02-G(B)-15, Revision 1, Determination of Aquifer Permeability from Constant Head Test and Estimation of Radius of Influence for the Proposed Water Well.

Stone & Webster Engineering Corporation (SWEC), 1999c, Calculation No. 05996.02-G(B)-16, Revision 1, Flood Analysis at 3-mile Long Portion of Rail Spur.

Stone & Webster Engineering Corporation (SWEC), 1999d, Calculation No. 05996.02-G(B)-17, Revision 1, PMF Flood Analysis with Proposed Access Road and Rail Road.

Stone & Webster Engineering Corporation (SWEC), 1999e, Calculation No. 05996.02-G(B)-3, Revision 3, Estimate Static Settlement of Storage Pads.