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AIRBORNE EXPRESS

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February 14, 2003

Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

References:
1) Docket No. 70-143; SNM License 124
2) Letter from B.M. Moore to NRC, Revised Integrated Safety Analysis Summary for the Uranyl Nitrate Building, dated August 23, 2002 (21G-02-0268)
3) Letter from NRC to B. M. Moore, Nuclear Fuel Services, Inc., Request for Additional Information (TAC NO. L31688) Blended Low-Enriched Uranium Project Uranyl Nitrate Building Revised Integrated Safety Analysis Summary, dated November 29, 2002
4) Letter from B.M. Moore to NRC, Reply to Request for Additional Information Concerning Integrated Safety Analysis Summary for the Uranyl Nitrate Building, dated December 23, 2002 (21G-02-0409)
5) NRC/NFS Meeting to Discuss Outstanding Issues Related to Licensing of the Uranyl Nitrate Building, held in Rockville, Maryland on February 4, 2003

Subject: Additional Commitments Regarding Licensing of the Uranyl Nitrate Building

Dear Sir:

Nuclear Fuel Services, Inc. (NFS) hereby submits additional commitments to resolve outstanding licensing issues related to the Uranyl Nitrate Building. These commitments were discussed with your staff at the referenced meeting.

NFS is submitting additional information to further clarify responses that were previously submitted (Reference 4) to the referenced NRC Request for Additional Information. As contained herein, NFS commits to submitting revised pages to the ISA Summary (Reference 2) to address the following Baseline Design Criteria specified in Title 10, Code of Federal Regulations (CFR), Part 70.64, by April 1, 2003:

NMSS01

- **Natural Phenomena (10 CFR 70.64(a)(2))**

NFS commits to revising Appendix A of the Revised ISA Summary for the Uranyl Nitrate Building to include a description of methods used to demonstrate compliance with the Performance Criteria specified in 10 CFR 70.61 for accidents caused by natural phenomena; a list of Items Relied On For Safety (IROFS) and the associated Management Measures; and a commitment to maintain these IROFS under a Configuration Management program.

Information to be incorporated into Appendix A of the ISA Summary (Revision 2) is contained in Attachment I.

- **Environmental & Dynamic Effects (10 CFR 70.64(a)(4))**

NFS commits to revising Appendix A of the ISA Summary (Revision 2) for the Uranyl Nitrate Building to include information regarding the criteria that will be used to ensure that IROFS are maintained reliable under ambient and process conditions as follows:

(4) Environmental & Dynamic Effects: The design must provide for adequate protection from environmental conditions and dynamic effects associated with normal operations, maintenance, testing, and postulated accidents that could lead to loss of safety functions.

The UNB facility is designed to minimize problems from variations (both normal and from credible upsets) in the ambient and process conditions under which the IROFS equipment is expected to operate. Consideration in the design of the facility and equipment is given to the following to prevent loss of safety functions:

- *Protection of piping and vessels from vehicles and forklifts*
- *Protection of fittings from external impact*
- *Corrosion protection*
- *Vibration from pumps/fans etc.*
- *Water discharge from sprinkler systems (or other splash)*
- *Weather*
- *Other facility siting factors including the railway, air traffic patterns, and nearby commercial facilities.*

As such, IROFS will be qualified to demonstrate that they can perform their safety functions under the environmental and dynamic service conditions in which they will be required to function and for the length of time their function is required. Specific requirements for each IROFS will be contained in the ISA.

- **Instrumentation & Controls (10 CFR 70.64(a)(10)**

NFS commits to revising Appendix A of the ISA Summary (Revision 2) for the Uranyl Nitrate Building to include information regarding the manner in which IROFS will be monitored and controlled as follows:

> *(10) Instrumentation & Controls: The design shall provide for inclusion of instrumentation and control systems to monitor and control the behavior of IROFS.*
>
> *Active engineered controls are used extensively for safety purposes in the UNB facility. Section 4.8 of the ISA Summary addresses the requirements for inspection, periodic functional checks, and maintenance to ensure the effectiveness of IROFS. This type of IROFS is typically implemented through the Central Control System (CCS). The CCS provides extensive internal diagnostic checks that will detect component failures and trigger alarms and in appropriate cases will send the outputs to a safe state. This is true for individual field instruments up through the controllers themselves and all communication links in between.*
>
> *In general, equipment systems that will be used as enhanced administrative or active engineered control IROFS will have means for verification that key components of the IROFS are functional. Applicable information about monitoring each individual IROFS of these types will be contained in the ISA.*

- **Definition of IROFS**

NFS commits to submit revisions to Section 9.0, DEFINTIONS, of the ISA Summary (Revision 2) with respect to including the concept of IROFS functions, as contained in Attachment II.

- **Controlled Area Boundary**

NFS commits to include a revised drawing that identifies the "Controlled Area Boundary" and the "Owner Controlled Area" located at the BLEU Complex. This revised drawing is included in Attachment III. Please note that the "Controlled Area Boundary" (described in 10 CFR 70.65(b)(2)) identified on the site plan is equivalent to a "Restricted Area" as defined in 10 CFR 20.1003 and in Chapter 1, Section 1.7.18, of SNM-124.

- **Emergency Utilities**

Proposed changes to Chapter 6, Section 6.3, Emergency Utilities, of SNM-124 are contained herein (Attachment IV) to reflect commitments to maintain the reliability of the

Uninterruptible Power Supply, diesel generator, and associated transfer switch located at the BLEU Complex.

The NFS Safety and Safeguards Review Council has reviewed and approved the proposed changes to Chapter 6 of the referenced license. For your convenience, vertical lines in the right-hand margin of affected license pages denote changes.

If you or your staff have any questions, require additional information, or wish to discuss this, please contact me, or Mr. Rik Droke, Licensing and Compliance Director at (423) 743-1741. Please reference our unique document identification number (21G-03-0043) in any correspondence concerning this letter.

Sincerely,

NUCLEAR FUEL SERVICES, INC.

B. Marie Moore

B. Marie Moore
Vice President
Safety and Regulatory

Attachment

JSK/lsn

cc:

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Attachment I

Proposed Changes to Appendix A of the ISA Summary for the Uranyl Nitrate Building to Address Natural Phenomena (10 CFR 70.64(a)(2))

Compliance w/ Baseline Design Criteria for Natural Phenomena

Baseline Design Natural Phenomena Event: A physically credible natural phenomena event that has the capability to exceed the performance criteria specified in 10 CFR 70.61. Protection is afforded by designing and constructing a facility to applicable sections of the Standard Building Code and by ensuring operational adherence to this code through a configuration management change control process. Adherence to 10 CFR 70.62(c)(iv) and 10 CFR 70.64(a)(2) is demonstrated by eliminating potential high or intermediate consequences limited to a defined baseline design threshold. The UNB baseline design threshold for each natural phenomena event is as follows:

Seismic	The UNB facility is designed and constructed to seismic zone IIC criteria as specified in Section 1607 of the 1999 Standard Building Code and is equipped with a tank restraint system designed to withstand a 0.1 g horizontal and vertical ground acceleration. The threshold return period for which the facility is designed and constructed to is 2E-3/yr. The Effective Peak Velocity Related Acceleration Coefficient Av and Peak Acceleration Coefficient Aa are defined as specified in Figures 1607.1.5A and 1607.1.5B of the Code respectively. Facility IROFS are assigned to prevent a high consequence event that may result from a seismic event within the specified threshold envelope. Refer to the *IROFS for Natural Phenomena* table for IROFS UNB-1and UNB-2 descriptions.
High Winds	The UNB facility is designed and constructed to withstand basic sustained wind speeds up to 70 miles per hour as specified in Section 1606 of the 1999 Standard Building Code. Facility IROFS are assigned to prevent a high consequence event that may result from high winds within the specified threshold envelope. Refer to the *IROFS for Natural Phenomena* table for IROFS UNB-3 description.
Flooding	The UNB facility is located above the 100-year flood plain base flood elevation threshold. As such, there is no physically credible accident scenario that could result in a flood of the facility.
Lightning	Lightning protection is installed in the UNB facility per the applicable portions of NFPA 780. There are no credible UNB accident scenarios that result in an intermediate or high consequence event as a result of a lightning strike.
Tornado	There are no credible accident scenarios that result in an intermediate or high consequence event as a result of a direct tornado strike on the UNB facility.

The following Table will be included in Section 6.0, LIST OF IROFS FOR THE UNB FACILITY, of the ISA Summary (Revision 2).

IROFS for Natural Phenomena

IROFS Number	Initiating Event	Consequence & Category	Items Relied on For Safety	Failure definition
UNB-1	Earthquake Design basis: 2E-3/ yr return	Major earthquake could collapse building and cause rupture of multiple tanks, leading to high consequences.	Building design per SBC 1999 seismic requirements for Erwin, TN. Key features: - Structural steel components sized for acceleration loads - Concrete foundations sized to support steel	Conditions exist that could cause collapse of the building under less than design basis earthquakes. These conditions could be caused by modifications or damage to key structural components.
UNB-2	Earthquake (same as above)	Major earthquake could cause multiple storage tanks to move sufficiently to break connection nozzles and spill UN to floor, leading to high consequences.	Each storage tank is equipped with a seismic restraint system. Key features: - molded in restraint strap - anchor bolt and nut - attachment to concrete floor	Conditions exist such that the restraint systems for multiple tanks are compromised to the point that they would be functionally ineffective.
UNB-3	High winds (sustained winds > 70 mph)	Sustained high winds could collapse building and cause rupture of multiple tanks, leading to high consequences.	Building design per SBC 1999 wind load requirements for Erwin, TN. Key features: - Structural steel components sized for wind loads - Concrete foundations sized to support steel	Conditions exist that could cause collapse of the building under less than design basis wind loads. These conditions could be caused by modifications or damage to key structural components.

Attachment II
Definition of IROFS

Section 9.0 DEFINTIONS, of the ISA Summary (Revision 2) will be revised as follows:

Definition of IROFS

"Item Relied on for Safety:
Means structures, systems, equipment, components and activities of personnel that are relied on to prevent potential accidents at a facility that could exceed the performance requirements of 10 CFR 70.61 or to mitigate their potential consequences."

Accordingly, an IROFS provides a safety function that serves to reduce the risk associated with a specific accident scenario. The components of an IROFS function may include operator actions, equipment, control logic, and elements such as time or margin of safety (see example below). In addition, utility subsystems required to maintain the reliability and availability of an IROFS are bounded within the IROFS function. Utilities not required to meet the performance criteria, such as in fail-safe controls or equipment, do not require inclusion in the IROFS functional boundary.

Equipment, actions, or controls within the IROFS functional boundary equipment and sub-systems must be:

- Designed to prevent or mitigate specific, potentially hazardous events. Each identified potential hazard will have corresponding, specific protection strategies.

- Independent so that there is no dependence on components of other protective layers associated with an identified hazard. There must also be no linkage between the initiating event and the ability of the IROFS to perform as required.

- Dependable so that they can be relied on to operate in the prescribed manner. Both random and specific failure modes will be considered in the assessment if there is a probability of protection layers failing on demand or failing during their mission. If human intervention is included as an IROFS, the response time and corresponding human error probability must be considered.

- Auditable in that they are designed to facilitate regular validation (including testing) and maintenance of their protective functions.

IROFS shall be maintained available and reliable to meet the performance criteria through graded applications of management measures as specified in the ISA Summary. Accordingly, Administrative IROFS that encompass operation of an active component shall require management measure application as specified for enhanced administrative controls to its respective component.

Example: an administrative control may require a spill be cleaned up within 8 hours and only if it exceeds 5 gallons (because it is safe if cleaned up in less time or if the volume is below 5 gallons).

Attachment III
BLEU Complex Site Plan

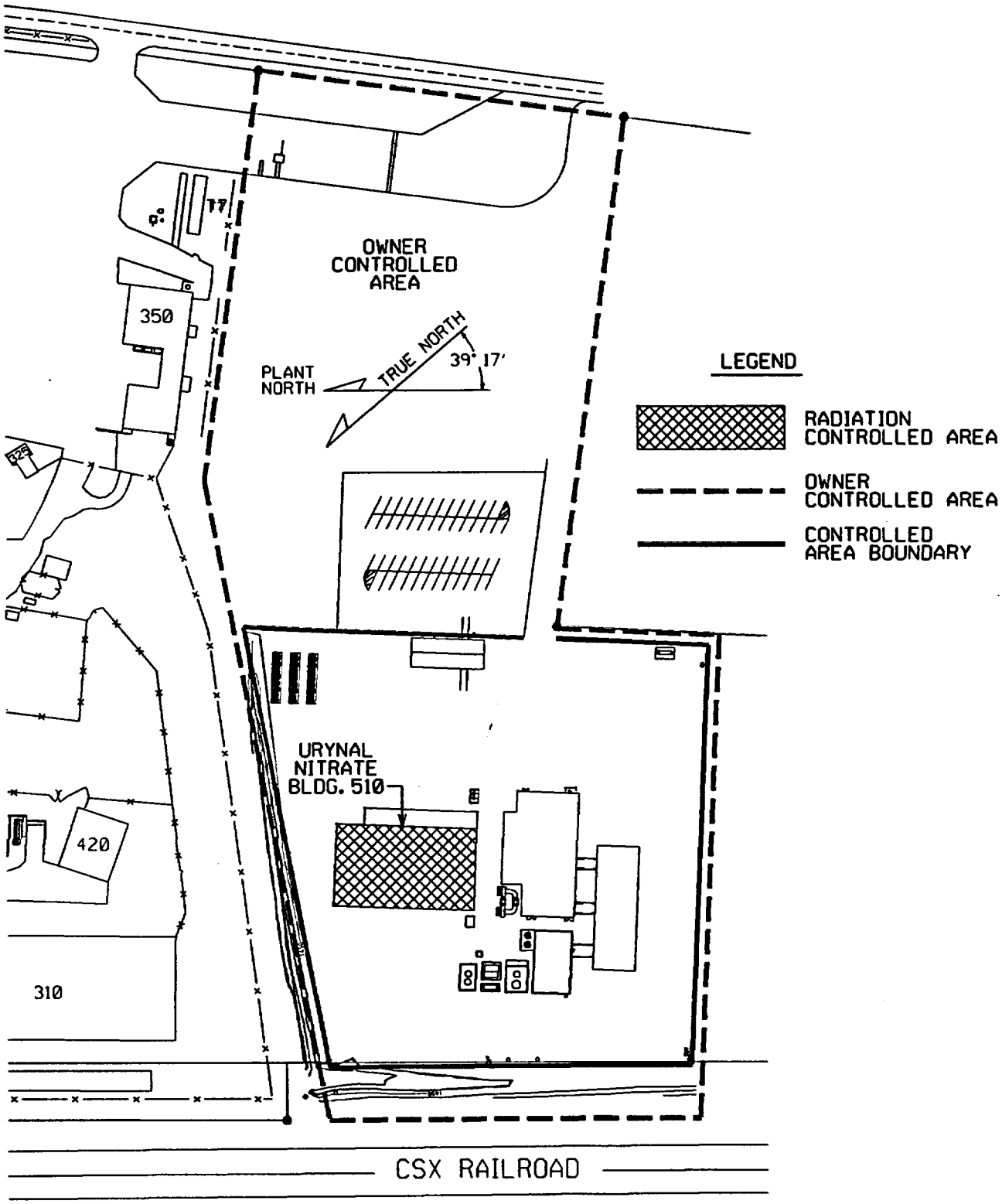

FIGURE 1: BLEU Complex Site Plan

Attachment IV
Page Changes to SNM-124

Page Index
Pages 1 through 6

Part I

Chapter 6

Page 5

SPECIAL NUCLEAR MATERIAL LICENSE

SNM-124 (02/14/03) |

PAGE INDEX (Submitted)

Part	Section	Page(s)	Revision	Date
I	Introduction	i	1	08/15/89
		ii	1	08/15/89
I	Table of Contents	iii	6	08/07/98
		iv	8	04/28/00
		v	7	01/24/03
		vi	5	10/23/98
		vii	5	10/23/98
		vii-a	2	10/11/02
I	List of Figures	viii	9	10/11/02
I	List of Tables	ix	2	05/09/97
I	Chapter 1	1	6	04/28/00
		2	7	04/28/00
		3	9	12/10/99
		4	6	11/24/98
		5	6	11/15/01
		6	13	04/03/02
		7	2	10/15/90
		8	2	05/15/91
		9	1	08/15/89
		10	1	05/15/91
		11	1	05/18/95
		12	2	01/11/01
I	Appendix A	1	1	11/06/98
		2	1	11/06/98
		3	1	11/06/98
		4	1	11/06/98
I	Appendix B (NRC)	1	0	10/06/95
		2	0	10/06/95
		3	0	10/06/95
		4	0	10/06/95
I	Appendix C	1	0	09/25/98
		2	0	09/25/98
		3	0	09/25/98
		4	0	09/25/98
I	Appendix D	1	1	10/11/02
		2	1	10/11/02
		3	1	10/11/02

SPECIAL NUCLEAR MATERIAL LICENSE

SNM-124 (02/14/03) |

PAGE INDEX (Submitted)

Part	Section	Page(s)	Revision	Date
I	Chapter 2	1	4	09/15/98
		2	4	09/15/98
		3	3	05/15/91
		4	1	08/15/89
		5	1	08/15/89
		6	2	03/13/98
		7	3	03/13/98
		8	2	03/13/98
		9	2	03/13/98
		10	2	10/15/90
		11	1	08/15/89
		12	3	09/15/98
		13	3	03/13/98
		14	2	03/13/98
		15	4	03/13/98
		16	8	07/30/99
		17	5	12/20/00
		18	4	12/20/00
		19	5	10/19/98
		20	5	10/19/98
		21	4	06/18/93
		22	5	07/30/93
		23	3	08/07/92
		24	2	10/15/90
		25	2	10/15/90
		26	2	10/15/90
		27	3	11/16/98
		28	3	01/11/01
		29	0	01/24/03
I	Chapter 3	1	2	05/15/91
		2	4	05/18/95
		3	5	03/13/98
		4	3	05/18/95
		5	6	03/13/98
		6	1	08/15/89
		7	5	03/13/98
		8	3	05/18/95
		9	3	05/18/95
		10	2	05/15/91
		11	4	05/20/92
		12	3	05/18/95
		13	6	01/23/03

SPECIAL NUCLEAR MATERIAL LICENSE

SNM-124 (02/14/03) |

PAGE INDEX (Submitted)

Part	Section	Page(s)	Revision	Date
I	Chapter 3	14	4	03/13/98
		15	6	12/10/99
		16	2	05/18/95
		17	3	05/15/91
		18	2	05/15/91
		19	4	12/10/99
		20	7	01/23/03
		21	10	01/23/03
		22	5	04/28/00
		23	5	04/28/00
		24	7	04/28/00
		25	6	03/13/98
I	Chapter 4	1	4	10/23/98
		2	4	10/23/98
		3	3	10/23/98
		4	5	10/23/98
		5	2	10/23/98
		6	4	10/23/98
		7	4	10/23/98
		8	2	10/23/98
		9	2	10/23/98
		10	4	10/23/98
		11	4	10/23/98
		12	4	10/23/98
		13	2	10/23/98
		14	2	10/23/98
		15	3	10/23/98
		16	2	10/23/98
		17	2	10/23/98
		18	4	10/23/98
		19	3	10/23/98
		20	3	10/23/98
		21	3	10/23/98
		22	5	10/23/98
		23	3	10/23/98
		24	2	10/23/98
		25	2	10/23/98
		26	2	10/23/98
		27	3	10/23/98

SPECIAL NUCLEAR MATERIAL LICENSE

SNM-124 (02/14/03) |

PAGE INDEX (Submitted)

Part	Section	Page(s)	Revision	Date
I	Chapter 4	28	3	10/23/98
		29	5	05/21/99
		30	4	05/21/99
		31	3	10/23/98
		32	5	10/23/98
		33	4	10/23/98
		34	3	10/23/98
		35	4	10/23/98
		36	4	10/23/98
		37	6	04/23/99
		38	6	04/23/99
		39	3	10/23/98
		40	5	04/23/99
		41	2	10/23/98
		42	2	10/23/98
		43	2	10/23/98
		44	5	04/23/99
		45	2	10/23/98
		46	4	10/23/98
		47	4	10/23/98
		48	3	10/23/98
		49	2	10/23/98
		50	2	10/23/98
		51	2	10/23/98
		52	2	10/23/98
		53	4	10/23/98
		54	2	10/23/98
		55	2	10/23/98
		56	2	10/23/98
		57	2	10/23/98
		58	2	10/23/98
		59	2	10/23/98
		60	4	10/23/98

SPECIAL NUCLEAR MATERIAL LICENSE

SNM-124 (02/14/03) |

PAGE INDEX (Submitted)

Part	Section	Page(s)	Revision	Date
I	Chapter 5	1	3	08/09/00
		2	5	10/11/02
		3	3	08/28/98
		4	3	08/28/98
		5	2	08/28/98
		6	3	10/11/02
		7	4	10/11/02
		8	7	10/11/02
		9	5	10/11/02
		10	6	08/18/00
		11	3	08/28/98
		12	2	08/28/98
		13	2	08/28/98
		14	3	08/28/98
		15	3	08/28/98
		16	2	08/28/98
		17	3	08/28/98
		18	7	10/11/02
		19	5	08/28/98
		20	2	08/28/98
		21	2	08/28/98
		22	2	08/28/98
		23	0	08/28/98
I	Chapter 6	1	2	08/14/98
		2	3	11/13/98
		3	7	05/21/99
		4	7	09/04/98
		5	3	02/14/03
		6	3	10/11/02
		7	1	08/14/01
		8	1	10/11/02
		9	2	08/14/98
		10	1	11/29/94

SPECIAL NUCLEAR MATERIAL LICENSE

SNM-124 (02/14/03) |

PAGE INDEX (Submitted)

Part	Section	Page(s)	Revision	Date
I	Chapter 7	1	8	11/16/98
		2	5	10/08/93
		3	4	10/08/93
		4	2	11/16/98
		5	2	11/16/98
		6	2	11/16/98
I	Chapter 7 Appendix A	deleted		
I	Chapter 7 Appendix B	deleted		
I	Chapter 8	1	2	08/28/98

and ventilation equipment for the plutonium operating facilities. Emergency power generators are tested for operability on a weekly frequency. Emergency lighting is provided by battery-powered lights located throughout the Plant to provide for the egress of workers.

The electrical power supply system for the BLEU Complex (UNB, OCB, EPB and related facilities located within the BLEU Complex) includes backup power generation and uninterruptible power supply (UPS) equipment. To ensure system availability, the following measures (as described in written procedures) shall be applied to the specified equipment:

- Diesel backup generator - periodic functional testing; periodic battery checks; configuration control
- Transfer switch - periodic functional testing; configuration control
- UPS - periodic functional testing; periodic battery checks; configuration control.

6.4 RADIOACTIVE WASTE MANAGEMENT

Solid wastes are segregated for recoverable uranium or for waste disposal. Process wastes, for which it has been determined that recovery is not justified, are packaged in accordance with the requirements of the state, DOT and NRC Regulations. The packages are then transported in accordance with DOT regulations to a licensed waste processor or to a licensed burial site. All activities conducted in the packaging and shipping of radioactive waste are performed in accordance with approved written procedures.

6.5 SPECIFIC LICENSE CONDITIONS

Conditions in this section are primarily for specific exceptions to the other conditions in Part I. Such an exception is normally the result of a unique operational change or some other unusual situation and, thus, must be approved by the NRC. This section may also contain conditions issued by the NRC as a result of other licensing activities.

6.5.1 Intermediate Treatment Furnace in the Fuel Development Facility

The type of furnace now used may be loaded with SNM in either $\leq$1.0-inch-thick slabs maintained in a single plane or two parallel $\leq$0.75-inch-thick slabs separated by at least 1.5 inches. The single plane or parallel planes may also be present in the adjacent station for loading or unloading. Refer to Chapter 15 of Part II for justification.