



**Department of Energy**  
**National Nuclear Security Administration**  
 Washington, DC 20585

April 5, 2004

The Honorable John T. Conway  
 Chairman  
 Defense Nuclear Facilities Safety Board  
 625 Indiana Avenue, NW.  
 Suite 700  
 Washington, D.C. 20004

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 APR 13 11:31 AM '04  
 2004 APR -7 PM 11:31 AM  
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Dear Mr. Chairman:

In my March 9, 2004, status report for deliverable 4.6.1 of the Department's implementation plan for Defense Nuclear Facilities Safety Board Recommendation 2002-3, we advised you that by March 31, 2004, we would transmit the Los Alamos National Laboratory (LANL) portion of the commitment or advise you of the date by which we would provide it. The LANL portion of deliverable 4.6.1 is enclosed. This completes all the National Nuclear Security Administration (NNSA) actions for deliverable 4.6.1.

If you have any questions about the LANL portion of commitment 4.6, or about our path forward on this or other NNSA actions under the implementation plan, please contact me or have your staff contact Jeff Underwood at (301) 903-8303.

Sincerely,

For  
 Everet H. Beckner  
 Deputy Administrator  
 for Defense Programs

Enclosure

cc w/enclosure:  
 M. Whitaker, DR-1  
 B. Cook, EH-1



United States Government

Department of Energy

National Nuclear Security Administration

Los Alamos Site Office

Los Alamos, New Mexico 87544

# memorandum

DATE: MAR 25 2004  
REPLY TO:  
ATTN OF: OOM:ias:02-04  
SUBJECT: LASO Data Supporting Commitment 4.6.1 of the Implementation Plan for DNFSB Recommendation 2002-3

TO: Dr. Everet H. Beckner, Deputy Administrator for Defense Programs, NA-10, HQ/FORS

Attached to this memorandum is data requested in your memorandum dated November 25, 2003. As you are aware several facilities at Los Alamos National Laboratory (LANL) are in the process of updating and revising their safety basis documentation. Also, Los Alamos Site Office is in the process of reviewing documentation already submitted by LANL. Reviews of the safety basis administrative controls and verification of implementation of these controls will be conducted on a facility-by-facility basis. These reviews will be completed within the timeframe proposed.

Updates to the data supplied will be submitted in a timely manner as the actions are completed or as guidance and standards associated with this recommendation are finalized. At this time, actions at ER sites have not begun. Data on these efforts will be submitted once activities commence. Coordination with Mr. Jeff Underwood will continue. Submittals will be sent to Mr. Underwood electronically per his request.

If you have questions, please contact the LASO primary contact for DNFSB issues, Gerald Schlapper at (505) 665-7111 or his alternate Fred Bell at (505) 665-4856.

  
Gerald Schlapper  
Manager

## Attachment

cc w/attachment:  
J. G. Underwood, NA-124, HQ/FORS  
G. A. Schlapper, OOM, LASO  
F. Bell, OFO, LASO  
J. Angelo, PS-DO, LANL MS-C347

cc w/o Attachment:  
X. Ascanio, NA-124, HQ/GTN  
G. P. Nanos, DIR, LANL, MS-A100

DNFSB 2002-3 Commitment 4.5/4.6  
Data Sheet LANL-1

1. Facility: TA-8-23 Radiography Operations.
2. Specific Administrative Controls: TA-8-23 is currently operating under a JCO. Though LANL submitted a DSA in a timely manner to comply with 830 requirements; LANL later retracted the DSA/TSR submittal due to quality problems. Tabular data lists existing AC's.
3. Commitment 4.5: NNSA/LASO anticipates that LANL will submit a revised DSA/TSR package in the near term. LASO will conduct a review of the documents for adequacy of AC's.
4. Commitment 4.6: For the existing JCO, NNSA completed a readiness assessment on November 20, 2002, that verified the JCO AC's. NNSA will complete field reviews of the documents in item 3 in a timely manner.

DNFSB 2002-3 Commitment 4.5/4.6  
Data Sheet LANL-2

1. Facility: TA-3-29, CMR
2. Specific Administrative Controls: CMR is currently operating under controls outlined in BIO/TSR package that was reviewed and approved by the LASO safety authorization Basis Manager. The listed AC's are derived from these documents and the SER. LANL will submit to LASO an update of the CMR BIO by the end of the first quarter of CY04.
3. Commitment 4.5: LASO will complete a review of the CMR update and will assess AC's proposed in this document and AC's retained from the original document.
4. Commitment 4.6: Once actions in item 3 are complete LASO Office of Facility Operation will independently verify implementation of all administrative controls.

DNFSB 2002-3 Commitment 4.5/4.6  
Data Sheet LANL-3

1. Facility: Plutonium Facility TA-55, PF-4.
2. Specific Administrative Controls: The Administrative controls listed in the tabular presentation are based on a FSAR/TSR approved by the LASO Safety Authorization Basis Manager in 1996. LANL submitted a revised DSA/TSR package to LASO 1/2003.
3. Commitment 4.5: The FSAR/TSR update for TA-55 is in the process of being reviewed by the LASO Safety Authorization Basis Team. Verification of administrative controls for adequacy will be accomplished as part of this process.
4. Commitment 4.6: Once actions in item 3 are complete LASO office of Facility Operation will independently verify implementation of administrative controls.

DNFSB 2002-3 Commitment 4.5/4.6  
Data Sheet LANL-4

1. Facility: TA-21, Tritium Salt Fabrication Facility TSFF.
2. Specific Administrative Controls: This facility does not have administrative controls.
3. Commitment 4.5: N/A.
4. Commitment 4.6: N/A.

DNFSB 2002-3 Commitment 4.5/4.6  
Data Sheet LANL-5

1. Facility/Activity: TA-53, Actinide Experiments.
2. Specific Administrative Controls: LASO Senior Authorization Manager (SABM) approved the existing administrative controls dealing with the LANSCE Fire Protection Program and restrictions on the high explosive with regard to interactions with actinides. Specific controls are detailed in the supplied table.
3. Commitment 4.5: NNSA/LASO SABM approved the TA-53, Actinide Experiment bases 10/2001. As part of this approval administrative controls were verified to be adequate.
4. Commitment 4.6: LASO Office of Facility Operations is in the process of verifying the implementation of administrative controls.

DNFSB 2002-3 Commitment 4.5/4.6  
Data Sheet LANL-6

1. Facility/Activity: TA-53, IL Target.
2. Specific Administrative Controls: LASO Senior Authorization Manager (SABM) approved the existing administrative controls that relate to operation of the MPF-7 ventilations. More specific details are supplied in the enclosed table.
3. Commitment 4.5: NNSA/LASO SABM approved the BIO for the IL target in March 2000. As part of this review AC's were found to be adequate. An update of the BIO is due from LANL.
4. Commitment 4.6: LASO Office of Facility Operations is in the process of verifying the implementation of administrative controls.



DNFSB 2002-3 Commitment 4.5/4.6  
Data Sheet LANL-7

1. Facility/Activity: TA-53, LANCE, Sector M, Area A East.
2. Specific Administrative Controls: This facility does not have administrative controls subject to this review.
3. Commitment 4.5: N/A.
4. Commitment 4.6: N/A.

DNFSB Commitment 4.5/4.6  
Data Sheet LANL-8

1. Facility: TA-54, Bldg 38, RANT
2. Specific Administration Controls: LASO Senior Authorization Basis manger (SABM) approved the existing administrative controls addressing. Criticality Safety Limits, Fire Protection Program, Hazard Material and Waste management Program and a Vehicle Safety Program, The enclosed table provides a brief description of the specifics of the controls.
3. Commitment 4.5: NNSA/LASO SABM approved the RANT documents (BIO and TSR) in December 2003, LANL has submitted documentation to address conditions of approval associated with these documents. The LANL submittals are under review by LASO.
4. Commitment 4.6: LASO Office of Facility Operations well begin the process of verifying implementation of the administrative controls once all documentation is approved by SABM.

DNFSB Commitment 4.5/4.6  
Data Sheet LANL-9

1. Facility: TA-54, Area G and TWISP
2. Specific Administrative Controls: LASO Senior Authorization Basis manager (SABM) approved the BIO/TSR in November 2003. Amendments were submitted by LANL to these documents. In addition LANL has requested a delay in submittal of information related to SER condition of approval.
3. Commitment 4.5: LASO has completed review of some of the LANL request. Compliance with certain conditions of approval and the DSA/TSR implementation Plan are currently under review by LASO, SABM.
4. Commitment 4.6: LASO Office of Facility Operations has begun the process of verifying implementation of administrative controls.

DNFSB Commitment 4.5/4.6  
Data Sheet LANL-10

1. Facility: TA-50, WCRRF
2. Specific Administrative Controls: Current WCRRF basis do not identify any AC's of safety significance. Revision to the WCRRF BIO/TSR is underway at LANL.
3. Commitment 4.5: Not applicable currently
4. Commitment 4.6: Not applicable currently

DNFSB Commitment 4.5/4.6  
Data Sheet LANL-11

1. Facility: TA-50, RLWTF
2. Specific Administrative Controls: As discussed in footnote (1) to the table of specific control elements the administrative specified are not directly traceable to the AB hazard/accident analyses. Their inclusion in the table is conservative. The BIO/TSR for RLWTF is being reviewed by LANL is being reviewed by LANL to ensure that issues raised by LASO are addressed.
3. Commitment 4.5: LASO will review the submittal by LANL discussed in item 2 to confirm adequacy of the proposed administrative controls.
4. Commitment 4.6: LASO Office of Facility Operations is in the process of verifying the implementation of RLWTF administrative controls.

DNFSB Commitment 4.5/4.6  
Data Sheet LANL-12

1. Facility: WETF, TA-16
2. Specific Administrative Controls: LASO Senior Authorization Basis Manager (SABM) approved the WETF DSA/TSR via a SER issued April 9, 2002. Specific controls are summarized in the table supplied.
3. Commitment 4.5: NNSA/LASO SABM has approved the DSA/TSR document and numerous subsequent LANL requests for variations/amendments. Administrative Controls were reviewed for adequacy during these reviews.
4. Commitment 4.6: LASO Office Facility completed a review of current administrative controls during March 2004. Minor concerns will be corrected by LANL prior to the NNSA-ORR scheduled to begin on April 19, 2004.

DNFSB Commitment 4.5/4.6  
Data Sheet LANL-13

1. Facility: TA-18, LACE F
2. Specific Administrative Controls: LASO Senior Authorization Basis Manager (SABM) issued the SER approving the administrative controls as stated in the BIO/TSR submittal. Details of the associated administrative controls are presented in the table supplied.
3. Commitment 4.5: NNSA/LASO SABM initially approved the LANL BIO/TSR for LACEF in July 2002. LANL has submitted several revision requests to LASO subsequent to this approval. Until concerns related to in core temperature measurement are addressed the site is operating under a series of restrictions.
4. Commitment 4.6: LASO Office of Facility operations is in process of verifying implementation of administrative controls.

DNFSB Commitment 4.5/4.6  
Data Sheet LANL-14

1. Facility/Activity: Transportation
2. Specific Administrative Controls: Administrative Controls addressing the Transportation Program, Package, Evaluation Program and Transfer Evaluation Program are detailed in the enclosed table. LASO Senior Authorization Basis Manager (SABM) approved the incorporation of these administrative controls.
3. Commitment 4.5: NNSA/LASO SABM approved the Transportation Safety Document in February 2004. This review ensured adequacy of administrative controls. A revision to the TSD was requested by LANL and documentation was to be submitted to LASO by March 7, 2004. LASO awaits this submittal.
4. Commitment 4.6: LASO Office of Facility Operations is in the process of verifying implementation of administrative controls.



FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
TA-8-23	TSR	Explosive operations	Operations with uncased HE are prohibited.	11/04	6/05	
TA-8-23	TSR	Explosive operations	Facility limit on quantity of cased HE shall not exceed 45.5 kilograms (100 lbs).	11/04	6/05	
TA-8-23	TSR	Explosive operations	All radioactive materials are prohibited within the facility when HE or explosive components are present. Sealed radioactive sources are prohibited during the term of the JCO. (Exception: small quantities of sealed sources such as those used in performing source response checks on radiation detection instruments, when HE is present will be allowed).	11/04	6/05	
TA-8-23	TSR	Radioactive material restriction	The facility limit of SNM shall not exceed 14.2 kilograms of PU239 equivalent.	11/04	6/05	
TA-8-23	TSR	Radioactive material restriction	No PU238 heat source (RTGs) will be permitted in the facility (under the JCO).	11/04	6/05	
TA-8-23	TSR	Conduct of operations	Only operations described in Section 3.2 of the JCO are approved.	11/04	6/05	
TA-8-23	TSR	Fire safety	Facility shall put in place a combustible loading program/procedure that has been approved by a fire protection engineer (FPE).	11/04	6/05	
TA-8-23	N/A (SER)	Fire safety	A 100-foot vegetation control setback will replace the 50-foot setback.	11/04	6/05	
TA-8-23	N/A (SER)	Conduct of operations	Facility must commit to a test and inspection program for the engineered safety features that are identified, particularly active components such as the interlocks.	11/04	6/05	
TA-8-23	N/A (SER)	USQ program	A DOE-approved USQ program must be implemented by the facility as part of the approval for continued operations.	11/04	6/05	
TA-8-23	N/A (SER)	Lightning protection	The lightning protection system will be configured and maintained as a Faraday cage as described in the Sandia report. The following elements are important: <ul style="list-style-type: none"> <li>• The facility should consider either confirming that the seams between floor and the walls and between the ceiling and walls are internally (integrally) bonded or consider externally bonding the seams at least every eight feet around the periphery</li> <li>• All metallic penetrations must be bonded</li> <li>• All internally exposed wiring must be surge</li> </ul>	11/04	6/05	

FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
			<p>protected</p> <ul style="list-style-type: none"> <li>A lightning protection system quality control plan put in place. Part of this plan must include a definition of the boundaries of the Faraday cage.</li> <li>Separation distances must be maintained according to table 11 of the report. If the seams between floor, walls, and ceiling get bonded, then the standoff distances may be revised.</li> </ul>			
TA-8-23	N/A (JCO)	Radioactive material restrictions	Test specimens containing radioactive material in excess of Hazard Category 3 thresholds quantities shall be prohibited when explosive components are present.	11/04	6/05	
TA-8-23	N/A (JCO)	Radioactive material restrictions	A thorough radiation survey of the casing of each radioactive heat source component shall be performed prior to accepting the component to verify its integrity. Components with any indication of leakage of radioactive material will not be accepted.	11/04	6/05	
TA-8-23	N/A (JCO)	Radioactive material restrictions	Excluding encapsulated radioactive heat sources components, test specimens containing radioactive material quantities in excess of HC 3 shall not be stored overnight.	11/04	6/05	
TA-8-23	N/A (JCO)	Criticality safety controls	ESA shall ensure that each nuclear component has been evaluated for criticality safety. Criticality safety controls identified in the evaluation shall be implemented. Test specimen configuration shall be restricted to those that have been evaluated.	11/04	6/05	
TA-8-23	N/A (JCO)	Explosive controls	Personnel occupancy in the building shall be limited to 5 people when any explosive, other than squib(s), actuator(s) or detonator(s) in UNO Hazard Category 1.4 are present. (The FHA specifies a limit of 4 people and that is what is enforced)	11/04	6/05	
TA-8-23	N/A (JCO)	Explosive controls	HE handling shall be performed only by personnel who have been trained and qualified to be HE handlers (per applicable division training plans).	11/04	6/05	
TA-8-23	N/A (JCO)	Explosive controls	HE packaging shall comply with LIR-405-10-01. Receipt inspections shall verify that HE components are properly packaged. Re-packaging of HE component shall comply with the LIR	11/04	6/05	
TA-8-23	N/A (JCO)	Explosive controls	Operations that lift HE components using cranes and hoists shall comply with the requirements of AR 13-2.	11/04	6/05	

FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
			<i>Cranes, Hoists, Lifting Devices, and Rigging.</i> These requirements include provisions for inspecting, testing, maintaining and using cranes, hoists, and rigging			
TA-8-23	N/A (JCO)	Explosive controls	Only qualified crane and hoist operators (per AR 13-2) shall be permitted to perform HE lift operations.	11/04	6/05	
TA-8-23	N/A (JCO)	Explosive controls	Hazard Control Plans shall be developed for handling HE components. The Hazard Control Plans will: <ul style="list-style-type: none"> <li>Identify hazards associated with handling of high explosive components</li> <li>Identify specific operational controls and practices for handling HE components safely</li> <li>Identify training requirements for workers authorized to handle explosive components</li> </ul>	11/04	6/05	
TA-8-23	N/A (JCO)	Explosive controls	Use of radio transmitters, cellular phones, or other radio frequency-generating devices shall be prohibited when a test component is present with a configuration with live detonator(s) in contact with HE	11/04	6/05	
TA-8-23	N/A (JCO)	Explosive controls	Thermal conditioning of HE is prohibited	11/04	6/05	
TA-8-23	N/A (JCO)	X-ray machine safety controls	Only qualified radiography operators shall be authorized to operate X-ray machines. Qualification standards shall comply with LIR 402-700-01.0 and shall be specified in training program plans or procedures.	11/04	6/05	
TA-8-23	N/A (JCO)	X-ray machine safety controls	The keys for operating the X-ray machines shall be controlled such that only authorized radiography operators have access to them. Operators shall remain at the control console when X-rays are being generated and shall remove the key from the console when leaving the console to prevent unauthorized operation	11/04	6/05	
TA-8-23	N/A (JCO)	X-ray machine safety controls	Prior to generating X-rays, operating personnel shall ensure that: <ul style="list-style-type: none"> <li>Access gate is closed to the perimeter of the building (applicable only to the 6-20MeV Scandatronix Microtron)</li> <li>Radiography bay has been swept and no personnel in the bay</li> <li>All doors are under direct control of the operator</li> <li>Personnel are not present in any radiological area outside the building</li> </ul>	11/04	6/05	

FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
TA-8-23	N/A (JCO)	Radiography source safety control	Hazards associated with using portable encapsulated radiography sources shall be evaluated in a Hazard Control Plan and instructions for safely handling and using these sources shall be specified in operating procedures.	11/04	6/05	
TA-8-23	N/A (JCO)	Radiography source safety control	The procedures shall implement applicable Laboratory radiation protection requirements	11/04	6/05	
TA-8-23	N/A (JCO)	Radiography source safety control	Personnel who handle and use these sources shall be trained to the procedures	11/04	6/05	
TA-8-23	N/A (JCO)	Fire safety	A procedure for controlling combustible loading, flammable liquids, and ignition sources shall be developed. The procedure shall be reviewed and approved by a Fire Protection Engineer	11/04	6/05	
TA-8-23	N/A (JCO)	Fire safety	Monthly, the Combustible Loading Procedure shall be completed by the operation personnel	11/04	6/05	
TA-8-23	N/A (JCO)	Fire safety	Quarterly building inspections shall be conducted and documented by a Fire Protection Engineer (or trained designee) to assess the adequacy of compliance with the combustible loading, flammable liquid, and ignition control procedure	11/04	6/05	
TA-8-23	N/A (JCO)	Fire safety	Facility and operating personnel shall be formally trained to the procedure and to minimize combustible loadings during their daily activities	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Laboratory Maintenance Management Program (LIR 230-04-01)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Safe Work Practices (LIR 300-00-01)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Documentation of Safe Work Practices (LIR 300-00-02)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Laboratory Training: A Graded and Systematic Approach to a Qualified Workforce (LIR 300-00-04)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Pressure, Vacuum and Cryogenic Systems (LIR 402-1200-01)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Los Alamos National Laboratory Emergency Management (LIR 403-00-01)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Packaging and Transportation (LIR 405-10-01)	11/04	6/05	

<b>FACILITY</b>	<b>TSR/AC#</b>	<b>TITLE</b>	<b>SPECIFIC CONTROL ELEMENT</b>	<b>4.5 SCHEDULED/ COMPLETE DATE/(Y/N)</b>	<b>4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)</b>	<b>LAST UPDATED MM/DD/YY</b>
TA-8-23	N/A (JCO)	Safety Programs	Electrical Safety (LIR 406-600-01)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Radiation Protection Program (700-series LIRs)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	LANL Fire Protection Program (LIR 910-01)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Explosives (AR 6-6)	11/04	6/05	
TA-8-23	N/A (JCO)	Safety Programs	Cranes, Hoists, Lifting Devices, and Rigging (AR 13-2)	11/04	6/05	

FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
CMR	5.6.1	Radiation Protection Program	<ul style="list-style-type: none"> <li>• Radiation levels SHALL be maintained as low as possible when working above the Hot Cells.</li> <li>• Hot Cell corridor doors SHALL remain closed when a radiation exposure risk is present.</li> <li>• No fuel clads SHALL be allowed in the Hot Cells.</li> <li>• Radioactive materials outside a glovebox or VENTILATED HOOD SHALL be handled to prevent spills using engineered or administrative controls.</li> </ul> <p>These controls include, but are not limited to: the use of transport carts; multiple confinement barriers; non-dispersible containers (no glass containers SHALL be used as the only spill barrier); protective clothing; training; and procedures.</p> <ul style="list-style-type: none"> <li>• IMMEDIATELY prior to the start of each operation conducted in a VENTILATED HOOD, the flow strip at the VENTILATED HOOD opening SHALL be observed to VERIFY that air is flowing into the opening.</li> <li>• IMMEDIATELY prior to the start of each operation conducted in a glovebox, the gloves SHALL be observed to VERIFY that they are protruding into the glovebox and not into the laboratory room.</li> <li>• Controlled areas SHALL be established to prevent exposure to high radiation from ionizing radiation sources in CMR through the use of industry standards, whenever possible.</li> <li>• Interlocks for radiation producing machines/processes SHALL not be bypassed or overridden.</li> </ul> <p>Workplaces SHALL be monitored for airborne contamination and radiation through the use of Continuous Air Monitors, and radiation detectors, as appropriate.</p>	11/04	6/05	
CMR	5.6.3	Fire Protection Program	<ul style="list-style-type: none"> <li>• Establish administrative guidelines for the control of combustibles and ignition sources, including minimization of the introduction of combustibles into VAULTS.</li> <li>• Provide for the establishment of a CONTINUOUS FIRE WATCH, as applicable.</li> <li>• Include requirements to place TRANSIENT COMBUSTIBLES within fire barriers such as</li> </ul>	11/04	6/05	

FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
			<ul style="list-style-type: none"> <li>• metal cabinets, bookshelves, containers, etc.</li> <li>• Include requirements that all MAR be placed in the facility VAULTS, in APPROVED CONTAINERS, or otherwise removed from the facility until all HEPA filters can be replaced following a fire which damages the wing HEPA filters.</li> </ul>			
CMR	5.6.9	HAZARDOUS MATERIAL Protection Program	<ul style="list-style-type: none"> <li>• Management of HAZARDOUS MATERIALS through the use of procedures and training.</li> <li>• Tracking of chemical hazards in CMR by location and process.</li> <li>• Handling, storage, and use of flammable gas and associated equipment SHALL preclude entry into CMR of FLAMMABLE GAS sources that could result in exceeding the LFL if all their contents are released to the applicable glovebox, VENTILATED HOOD, room, or storage cabinet.</li> <li>• Assures that unneeded chemicals that have the potential for explosion, fire, or toxic release are promptly disposed of in accordance with safety requirements. Additionally, the program provides for the following requirements specific to the use of perchloric acid:</li> <li>• Perchloric acid fuming SHALL only be performed in VENTILATED HOODS.</li> <li>• All laboratory exhaust duct work and systems directly connected to the ductwork in Wings 2, 3, 4, 5, and 7, where perchlorates could migrate, SHALL be assumed to have perchlorate residue above the action level, until chemical testing proves otherwise.</li> <li>• All planned activities in Wings 2, 3, 4, 5, and 7, where perchlorate ignition is a potential risk (including welding, burning, grinding, cutting, etc.), SHALL be performed in accordance with CMR-AP-001, Control of Perchlorate-Contaminated Ventilation Systems at CMR, which provides for assessment of perchlorate levels and use of a wetted environment.</li> <li>• Any planned maintenance work on equipment associated with the HVAC that could have been contaminated through diffusion, migration, or transport processes involving perchlorate salts</li> </ul>	11/04	6/05	

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			<p>(e.g., valving, duct wash down, purge systems, pumps, gages, etc.) in Wings 2, 3, 4, 5, and 7 must be formally assessed by the facility for perchlorate hazards prior to maintenance or other activities that could result in acute worker injury due to energetic disassembly.</p> <ul style="list-style-type: none"> <li>• A full assessment of the potential locations of perchlorate salt concentrations in ductwork or associated systems in Wings 2, 3, 4, 5, and 7 SHALL be performed prior to any maintenance activities involving the HVAC system. This assessment must include a listing of potentially dangerous areas.</li> <li>• Manual operation of the Duct Wash Down System is not required for perchloric acid fuming operations in VENTILATED HOODS equipped with an OPERABLE Hood Wash Down System (consisting of a fume capture system and an internal wash down system). This is a change to the BIO and is justified by the fact that the Hood Wash Down System will prevent buildup of perchlorate salts downstream of the VENTILATED HOOD.</li> </ul>			
CMR	5.6.11	TRU Waste Storage	<ul style="list-style-type: none"> <li>• Type A containers in good condition SHALL be used to store TRU waste, and a requirement SHALL be established that mandates that full containers have lids that are securely fastened.</li> <li>• Combustible containers (including fiberglass reinforced plywood) SHALL not be used as secondary containment for TRU waste.</li> <li>• Drum storage outside the waste drum storage areas SHALL not exceed 10 drums per wing.</li> <li>• Drum storage areas SHALL not be located near ignition sources.</li> </ul>	11/04	6/05	
CMR	5.6.15	MAR Inventory and Operations Program	<p>The facility SHALL have a program that tracks and controls the inventory of MAR (238Pu eq, 239Pu eq, and other NUCLEAR MATERIALS, as applicable) to within specified limits for each wing, the WAF, Wing 9 Hot Cells, and the facility. Additionally the program SHALL address operations involving the use of plutonium (and other radionuclides, as applicable) through the application of the following requirements as a minimum:</p>	11/04	6/05	



FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
			<ul style="list-style-type: none"> <li>• The use of quantities greater than 100 mg 239Pu eq SHOULD occur in gloveboxes.</li> <li>• Whenever the use of gloveboxes for operations using greater than 100 mg of 239Pu eq is not possible, the material SHALL be handled in accordance with facility procedures that establish sufficient controls to assure the safety of the material and the personnel conducting the operations.</li> <li>• When not in use during the performance of NORMAL OPERATIONS, storage and on-site movement of plutonium SHALL be in accordance with the containerization program.</li> <li>• Plutonium residue in solution or particle form SHALL not be moved or stored in glass containers without secondary containers outside of a VENTILATED HOOD or glovebox.</li> </ul>			
CMR	5.6.16	Toxic Gas Control	<ul style="list-style-type: none"> <li>• No analysis of unknown gases will be conducted in CMR.</li> <li>• A portable mass spectrometer will be used at the field location of unknown gas bottles for determination of the gas species.</li> <li>• The quantities of toxic gases used in the Gas Analysis Laboratory SHALL not exceed 50 cc.</li> <li>• Limited receipt of samples of known toxic gases at CMR for analysis SHALL be in Department of Transportation (DOT)-approved sample containers.</li> <li>• Receipt, storage, and limited use sampling of DOT-approved sample containers containing known toxic gases is limited in the facility to 1 (one) sample bottle of 50 cc maximum, or several smaller bottles with a combined volume of 50 cc maximum.</li> <li>• All required Occupational Safety and Health Administration regulations, applicable Environmental Protection Agency Risk Management Program rules, and state regulations SHALL be followed.</li> <li>• Proposals for future CMR projects using chemicals akin to nerve agent like chemical species will require development and DOE approval of a separate safety analysis and safety</li> </ul>	11/04	6/05	

FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
			controls.			
CMR	5.6.17	Wing 9 Floor Well Storage Program	<ul style="list-style-type: none"> <li>• Prior to storage, each source SHALL be assessed to VERIFY that cooling will not be required. No sources requiring cooling SHALL be stored in a floor hole.</li> <li>• A well plug SHALL be in place when a source is installed in a floor hole except when source movement is required.</li> <li>• Limits on total quantities of material that may be stored SHALL be determined by the no cooling requirement, criticality limits, and the amount of space available in the wells.</li> <li>• Radiation Control (RADCON) and ALARA principles SHALL be used to minimize external dose during movement of sources to and from wells.</li> <li>• Source control is conducted based on guidance contained in applicable DOE Guide G 441.1-13 for use with the applicable Code of Federal Regulations (10 CFR 835).</li> </ul>	11/04	6/05	
CMR	5.6.18	Containerization Program	<p>The CMR Facility SHALL have a program that minimizes the potential for energy source impact on MATERIAL AT RISK (MAR) in a catastrophic event through the use of APPROVED CONTAINERS. The purpose of the containerization program is to produce a methodology of placing NUCLEAR MATERIAL that is not in active use inside of robust containers to protect it from effects of seismic and fire accidents. The program must weigh the competing factors of MAR reduction for seismic events against potential increased MAR dispersion due to pressurized containers in fire scenarios. More specifically, the program must select container technologies, which demonstrate a damage ratio of zero based on evaluation of the following characteristics:</p> <ul style="list-style-type: none"> <li>• Thermal Resistance: The container must possess at least a 2-hour fire resistance rating to withstand the thermal effects of the 2-hour design basis fire and protect internal contents.</li> <li>• Seismic Robustness: The container must demonstrate resistance to the effects of a seismic event (i.e., drop, crush, puncture).</li> <li>• Pressurization: The container must balance the</li> </ul>	11/04	6/05	

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			<p>ability to withstand the effects of seismic events against over-pressurization during fires, which could cause dispersal of contained materials.</p> <ul style="list-style-type: none"> <li>Utility: The container must be able to fit in selected areas of laboratory operating wings while meeting floor-loading criteria, and must provide easy access for storage and retrieval of materials by user groups.</li> </ul> <p>Additionally, the program SHALL provide for the following:</p> <ul style="list-style-type: none"> <li>Proposed container technologies SHALL be submitted to DOE for approval, along with supporting engineering analyses and testing results, as applicable.</li> <li>Container technologies SHALL be approved by DOE-LAAO prior to use.</li> <li>All APPROVED CONTAINERS are considered Design Features and SHALL be treated accordingly.</li> <li>Containers SHALL be used to store MAR, which is not in use, to the maximum extent practicable.</li> </ul>			
TA-55	5.6.1	Radiation Protection Program	<p>The following requirements SHALL apply to RADIOGRAPHY Operations in PF-4:</p> <ul style="list-style-type: none"> <li>All other operations attended by personnel in PF-4 SHALL cease during RADIOGRAPHY operations.</li> <li>All UNATTENDED OPERATIONS in Room 319 and other affected rooms SHALL cease during RADIOGRAPHY.</li> <li>RADIOGRAPHY SHALL be performed during operational off hours only.</li> </ul> <p>NMT SHALL VERIFY that PF-4 has been evacuated of non-essential personnel and SHALL have security VERIFY that the roof has been completely evacuated, with NMT retaining ultimate responsibility. PF-4 SHALL be secured prior to the start and for the duration of RADIOGRAPHY OPERATIONS</p>	11/04	6/05	
TA-55	5.6.3	Fire Protection Program	<p>Room B38 SHALL have a combustible loading limit of &lt; 1.0 lbs/ft<sup>2</sup>.</p> <p>The compensatory actions that would be instituted in the event that two leaks occurred in the main fire loop such that PF-4 would be isolated from the fire water</p>	11/04	6/05	

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			<p>loop include the following:</p> <ul style="list-style-type: none"> <li>• 7 days to restore the system to OPERABLE.</li> <li>• If the system cannot be restored to operable within 7 days, terminate normal operations in PF-4 and stabilize identified MAR within 60 days.</li> <li>• Leaks in the fire loop are located and the system returned to service in accordance with SOP NMT8-FMP-929. NMT-8 Standing Order NMT8-SO-96-011 requires that daily verification of the fire suppression system header pressure is monitored as well as the number of times the jockey pump(s) start in order to maintain system pressure.</li> </ul> <p>Programmatic personnel will be given priority to stabilize and containerize NUCLEAR MATERIAL in each of their assigned areas in PF-4. SOP 592-GEN, Nuclear Material Packaging, is followed at TA-55 for the packaging of NUCLEAR MATERIAL for storage.</p>			
TA-55	5.6.8	Hazardous Material Protection Program	<p>All gas cylinders in PF-4 will have at least two restraints.</p> <ul style="list-style-type: none"> <li>• No UN 1.1 or 1.2 explosives are allowed in PF-4.</li> <li>• Only 350 grams of UN 1.3 propellant are allowed in PF-4. This propellant SHALL be contained in a shell casing and an impact resistant tube until ready for use.</li> <li>• FLAMMABLE GAS cylinders in laboratories SHALL be sized such that the concentration of the gas in the laboratories will be below the LFL if all their contents are released to the laboratory.</li> <li>• Flammable Gas Source(s) SHALL be manually isolated when not in use.</li> </ul>	11/04	6/05	
TA-21, TSFF	N/A	This facility does not have TSR ACs.		11/04	6/05	
TA-53, Actinide Experiments	6.3.3	Fire Prevention Program	Control of transient combustibles and ignition sources.	11/04	6/05	
TA-54, Actinide Experiments	6.3.4	Actinide/HE Restrictions	<p>a) He storage shall be at least 125 ft from actinide storage</p> <p>b) No concurrent handling and transportation of HE and actinides</p> <p>c) HE storage area will be posted</p>	11/04	6/05	
TA-53,	5.5	Administrative Controls on	a) Documented configuration baseline and change	11/04	6/05	

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1L Target		MPF-7 Ventilation System	control procedure b) Surveillance procedures c) Operating procedures d) Use of an equipment readiness checklist e) HEPA filter surveillance procedures			
TA-53, LANSCE Building 53-3, Sector M, Area A East	N/A	This facility does not have any SS ACs. Only design features.		11/04	6/05	
TA-54-38, RANT	5.6.2.1.A	Criticality Safety limits for TRU Waste Containers	Specific FGE <sup>239</sup> Pu limits for 55-gallon drum arrays	11/04	6/05	
TA-54-38, RANT	5.6.2.1.B	Criticality Safety limits for Sealed Sources in Pipe Overpacks	Specific FGE <sup>239</sup> Pu limits for Standard, S100 and S200 pipe overpack configurations	11/04	6/05	
TA-54-38, RANT	5.6.5.1.A	Fire Protection Program	Propane-fueled forklifts are prohibited at the RANT Site.	11/04	6/05	
TA-54-38, RANT	5.6.9.1.A	Hazardous Material & Waste Management Program	Waste Containers not stacked except in approved payload configuration.	11/04	6/05	
TA-54-38, RANT	5.6.9.1.B	Hazardous Material & Waste Management Program	Waste Containers staged and stored in designated container staging areas.	11/04	6/05	
TA-54-38, RANT	5.6.10.1.A	Vehicle Safety Program	Transport vehicle detached from trailer and relocated to external parking area prior to and during TRUPACT II and HalfPACT loading operations.	11/04	6/05	
TA-54, Area G	N/A	N/A	There are no specific ACs for the Area G Site.	11/04	6/05	
TA-54, TWISP		ACs will be incorporated into TA-54, Area G's.		11/04	6/05	
TA-50, WCRRF	N/A (ISTAR)	N/A	The Hazard Analysis for the ITSRs does not identify any AC that rise to the level of Safety Class or Safety Significant controls.	11/04	6/05	
TA-50, RLWTF	5.1 <sup>See Note (1)</sup>	Radioactive Material Inventory Directive Administrative Control (DAC) Requirements	Radioactive materials inventory for the RLWTF shall be controlled per the specified inventory limits.	11/04	6/05	
TA-50, RLWTF	5.2 <sup>See Note (1)</sup>	Decontamination Radiation Protection DAC	1. A contamination control enclosure shall be erected prior to decontamination of externally	11/04	6/05	

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		Requirements	<ul style="list-style-type: none"> <li>contaminated items.</li> <li>2. Internally contaminated gloveboxes or other large internally contaminated items shall be closed unless the item is connected to a filtered exhaust system.</li> <li>3. Internally contaminated items shall be connected to a filtered exhaust system with an operable fan.</li> <li>4. Ventilation exhaust systems involved with decontamination operations shall filter flow through a HEPA filter prior to release.</li> <li>5. One CAM shall be operating.</li> </ul>			
TA-50, RLWTF	5.3 <sup>See Note (1)</sup>	Room 60/60A Radiation Protection DAC Requirements	<ul style="list-style-type: none"> <li>1. Sludge shall be maintained in a liquid form and not permitted to dry out prior to being mixed during the cementation process.</li> <li>2. During drumming operations, Room 60/60A shall be maintained at a negative pressure.</li> <li>3. HEPA filters shall be provided in the ventilation systems exhausting Room 60/60A and the drum tumbler enclosure and operationally established in accordance with Lab requirements.</li> <li>4. One CAM shall be provided and functional during Room 60/60A operations.</li> </ul>	11/04	6/05	
TA-50, RLWTF	5.4 <sup>See Note (1)</sup>	Fire Safety DAC Requirements	<ul style="list-style-type: none"> <li>1. Establish specific criteria for acceptable levels of combustible materials and approved ignition sources within 15 days of approval of this ITSR.</li> <li>2. Conduct monthly fire safety inspections using trained personnel.</li> <li>3. Use of flammable or combustible liquids or gases require facility manager or designee approval.</li> <li>4. HOT WORK requires prior facility manager or designee approval.</li> <li>5. Verify that a fire watch has been stationed during HOT WORK activities and for one hour following completion.</li> </ul>	11/04	6/05	
WETF	WETF-TSR-AC-01	WETF Radioactive Material Control Program	<ul style="list-style-type: none"> <li>1. Inventory Limits.</li> <li>2. Control of Movements and Transfers of Radioactive Material.</li> </ul>	11/04	NNSA ORR 4/19/04	
WETF	WETF-TSR-AC-02	WETF Tritium Containerization Program	<ul style="list-style-type: none"> <li>1. Primary containment vessels shall be designed and built to survive a 4-ft drop.</li> <li>2. Secondary containment vessels shall be designed and built to survive a 10-ft drop.</li> </ul>	11/04	NNSA ORR 4/19/04	

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			<ol style="list-style-type: none"> <li>3. Any primary TCV outside Room 124 containing more than 24 grams of tritium SHALL be in a secondary containment vessel or a TGCS, unless a continuously manned RADIOACTIVE MATERIAL transfer is occurring (e.g., placing an experimental unit in a TGCS from a secondary containment vessel).</li> <li>4. Any tritium containment vessel stored inside Room 124 SHALL be in both primary and secondary containment vessels unless the primary containment vessel withstand a 120°C thermal and 10-ft drop mechanical insult.</li> <li>5. Type B shipping containers SHALL be used for all off-site transport of tritium amounts greater than 24 grams tritium.</li> <li>6. Shorting caps (plugs) SHALL be installed on any tritium containment vessel (TCV) with a squib valve when the TCV is not attached to the TGHS.</li> <li>7. High-Quality Long-Term Storage Containers (HQLTS) or equivalent SHALL be used in the environmental chambers (ECs).</li> <li>8. Hydride transport vessel (HTV) valves SHALL be capped when they are transferred within the facility.</li> </ol>			
WETF	WETF-TSR-AC-03	Radiation Protection Administrative Control Program	The Radiation Protection Program shall implement the applicable requirements of the LIR 402-700-01, including those associated with 10 CFR 835, and all sealed sources shall meet ANSI N43.6 requirement.	11/04	NNSA ORR 4/19/04	
WETF	WETF-TSR-AC-05	Fire Protection Program	<ol style="list-style-type: none"> <li>1. Defensible Space</li> <li>2. Restriction on combustible materials throughout WETF</li> <li>3. Operations center door to the corridor shall remain closed when the operations center is unmanned</li> <li>4. Freeze protection for wet-pipe sprinkler system</li> </ol>	11/04	NNSA ORR 4/19/04	
WETF	WETF-TSR-AC-08	WETF Hazardous Material Protection Program	<ol style="list-style-type: none"> <li>1. Implement controls on the amount of hydrogen gas stored in a given area.</li> <li>2. Prohibit flammable gases from being stored in room 124 (except hydrogen isotones in storage to</li> </ol>	11/04	NNSA ORR 4/19/04	

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			<p>support LANL mission.)</p> <ol style="list-style-type: none"> <li>3. Restrict the use of nonradioactive flammable gases in TGCS sections to what is necessary for mission requirements.</li> <li>4. Have less than 4% oxygen concentration in the TGCS sections and TWTS LPR prior to starting tritium operations</li> <li>5. A maximum in the TGHS or other containers in a TGCS section of 1 mole for NTTL GBs and 2 moles for other gloveboxes of pressurized gas per cubic meter of TGCS free volume.</li> <li>6. A maximum of 20 grams of explosive material.</li> </ol>			
WETF	WETF-TSR-AC-09	WETF Tritium Pressure Safety Program	<ol style="list-style-type: none"> <li>1. A documented and clearly identifiable (e.g., posted) maximum allowable working pressure (MAWP) rating.</li> <li>2. TCV's TGCS Sections, TWTS, and TGHS shall be leak-tight tested to less than 10<sup>-3</sup> std cm<sup>3</sup>/s of helium at 1 atmosphere differential pressure at MAWP. Note: Systems with rupture discs are tested at 90% of the rupture disc rating.</li> <li>3. The maximum flow rate for pressurized gases into any TGCS Section is limited to less than or equal to 10 scfm per installed bubbler.</li> <li>4. Overpressure protection devices (e.g., bubblers) for the TGCS shall be rated to prevent an overpressurization above the MAWP.</li> <li>5. An overtemperature protection device shall be rated to prevent an overpressurization or material failure for all heated sections that could result in an overpressurization.</li> <li>6. Overpressure protection devices (e.g., rupture discs) for the TGHS shall be rated to prevent an overpressurization above the MAWP.</li> <li>7. Overpressure protection devices (e.g., rupture discs) for the TWTS shall be rated to prevent an overpressurization above the MAWP.</li> </ol>	11/04	NNSA ORR 4/19/04	
WETF	WETF-TSR-AC-10	WETF On-Site Transportation Program	<ol style="list-style-type: none"> <li>1. Operators are licensed for the vehicles they operate</li> <li>2. Vehicles have an operator in control whenever the engine is running.</li> <li>3. Vehicles will be operated in a safe manner.</li> <li>4. Vehicles will be operated at or below 10 mph.</li> <li>5. Vehicle crash barriers are installed outside of the</li> </ol>	11/04	NNSA ORR 4/19/04	



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			<p>exterior wall of Room 124.</p> <p>6. Shipping and transportation responsibilities are clearly defined.</p>			
WETF	WETF-TSR-AC-11	Electrical Inspection/Replacement Program	<ol style="list-style-type: none"> <li>1. All electrical features, including electrical power to the gloveboxes, meet the requirement of the NEC. This requirement is met by following LIR 402-600-01, <i>Electrical Safety</i>, which requires that the group ESO conducts electrical review before work or experimentation begins on newly designed or modified equipment or apparatus. These reviews are accomplished using TSE-QP-19, <i>Design Development Procedure</i>. When electrical work is approved, a work ticket is written to schedule the electricians to do the work, and all work done under work tickets are inspected by LANL electrical inspectors.</li> <li>2. Components within the glovebox are UL listed and or have been approved the ESA-TSE ESO. The SAR requirements only call for the components within the gloveboxes to be UL-listed, however, the ESA Division Procedures, ESA-FM-OP-039, <i>Approval of Unlisted Electrical Equipment</i>, calls for all equipment to be inspected not just by UL, but by NRTL, and approved for use by October 1, 2003. WETF is following the requirements of the ESA operating procedure. The FSAR states that "UL-listed components are compatible for use with NEC electrical features," so when a component is NRTL-listed, it is compliant with NEC.</li> <li>3. All experimental apparatus conforms to NFPA 79 (Electrical Standard for Industrial Machinery); in particular, verify that circuit protection is provided such that damaging fault currents are interrupted before the ampacity of any wire exceeded. The NRTL requirements for testing include the requirements of NFPA 79. When equipment is inspected as called out in ESA-FM-OP-029 (as stated above) it is in fact inspected for compliance with NFPA 79.</li> <li>4. To ensure that the ESA-TSE Group ESO is qualified to carry out his duties and responsibilities, he must meet one of the</li> </ol>	11/04	NNSA ORR 4/19/04	

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			<p>following qualifications:</p> <ul style="list-style-type: none"> <li>• Be a qualified electrical worker with a bachelor of science (BS) degree or higher in electrical engineering, or</li> <li>• Equivalent combination of education and relevant experience with registration as a professional engineer in electrical engineering, or</li> <li>• Certification as an electrical inspector by the International Conference of Building Officials (ICBO), or</li> <li>• Certification as an electrical inspector by the International Association of Electrical Inspectors (IAEI).</li> </ul> <p>If the ESA-TSE Group ESO cannot meet one of the above qualifications, then the inspection/ evaluation of unlisted equipment, newly designed or modified electrical equipment, or an assembled apparatus shall be conducted by the LANL Chief ESO and documented in writing for its intended use.</p> <p>Additionally, the ESA-TSE Group ESO shall have a thorough knowledge of the electrical safety requirements contained in the OSHA standards, the NEC, the NESC, DOE orders, and other appropriate standards.</p>			
TA-18	5.4	Procedures		11/04	6/05	
TA-18	5.4.1	Check and seal experiment wells	SS	11/04	6/05	
TA-18	5.4.2	Verify that the sample manipulator is fully withdrawn, if not being used	SS	11/04	6/05	
TA-18	5.4.3	N Division Leader Review and Approval of Experiment Plans for reactivity in excess of \$.50	SS	11/04	6/05	
TA-18	5.4.4	Security Force Procedures for Responding to Intrusion Alarms	SS	11/04	6/05	

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TA-18	5.5	Reviews and Audits		11/04	6/05	
TA-18	5.5.2a	Management Self Assessments	DD	11/04	6/05	
TA-18	5.5.2b	TA-18 Nuclear Safety Committee Review of Experiment Plans	SS	11/04	6/05	
TA-18	5.5.2c	Independent Reviews	DD	11/04	6/05	
TA-18	5.5.3	Audits	DD	11/04	6/05	
TA-18	5.6	Programs		11/04	6/05	
TA-18	5.6.1	Inventory Control Program		11/04	6/05	
TA-18	5.6.1.1	Limit total quantity of material removed from CASA 1 and 2 vaults	DD	11/04	6/05	
TA-18	5.6.1.2	Limit duration of presence of nuclear material outside vaults unless stored in ROBUST CONTAINERS	SS	11/04	6/05	
TA-18	5.6.1.3	Evaluate MAR inventory to ensure that only that necessary to support operations is present	DD	11/04	6/05	
TA-18	5.6.1.4	Verify OSRP material and containers	SS	11/04	6/05	
TA-18	5.6.2	Containerization Program		11/04	6/05	
TA-18	5.6.2.1	Use ROBUST CONTAINERS for ceramic or powder plutonium stored in CASAs 1 & 2 vaults	SC	11/04	6/05	
TA-18	5.6.2.2	Liquid, gaseous, ceramic & powder plutonium shall be containerized	DD	11/04	6/05	
TA-18	5.6.2.3	Limit amount of liquid, powder or gaseous MAR in	DD	11/04	6/05	

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		each container				
TA-18	5.6.2.4	Packaging shall be verified to be compatible with packaged material	DD	11/04	6/05	
TA-18	5.6.3	<b>Nuclear Criticality Safety Program</b>		11/04	6/05	
TA-18	5.6.3.1	Operations with $k_{eff} \geq 0.95$ requires experiment and test plans approved by management and TA-18 Nuclear Criticality Safety Committee	SS	11/04	6/05	
TA-18	5.6.3.2	Criticality safety organization review and concurrence of all activities involving nuclear materials with criticality potential other than CA operations	SS	11/04	6/05	
TA-18	5.6.3.3	Hazard Control Plans shall be used for all hazardous activities including criticality demonstration and RTO construction	DD	11/04	6/05	
TA-18	5.6.3.4	Safe storage configurations and criticality safety limits shall be established and strictly followed	DD	11/04	6/05	
TA-18	5.6.3.5	Use of a special set of controls is required while performing maintenance activities on fueled CA.	SS	11/04	6/05	
TA-18	5.6.4.A	<b>Radiation Protection Program</b>		11/04	6/05	
TA-18	5.6.4.A.1	Access shall be controlled during CA operations	DD	11/04	6/05	
TA-18	5.6.4.A.2	Preoperational sweeps shall be conducted prior to CA operations	SS	11/04	6/05	

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TA-18	5.6.4.A.3	Restrictions on post-operation re-entry to remote control laboratory	SS	11/04	6/05	
TA-18	5.6.4.A.4	Workers handling dispersible MAR shall wear Personal Protective Equipment (PPE) as determined by an RCT	DD	11/04	6/05	
TA-18	5.6.4.A.5	Continuous Air Monitors (CAM) shall be used during respirable MAR operations and for reentry following high power operations (>10 <sup>16</sup> fissions)	DD	11/04	6/05	
TA-18	5.6.4.A.6	Audible and visual warnings of pending critical assembly machine operation	SS	11/04	6/05	
TA-18	5.6.4.A.7	Pajarito Road closure and Exclusion Area radiological posting	SS	11/04	6/05	
TA-18	5.6.4.A.8	Access controls for radiation generating machine operations in Buildings 127 and 227	DD	11/04	6/05	
TA-18	5.6.4.A.9	Use of qualified operators for radiography equipment	DD	11/04	6/05	
TA-18	5.6.4.A.10	Interlocks for high power radiation generating machine operations in Building 127 & 227	SS	11/04	6/05	
TA-18	5.6.4.B	<b>In-Service Inspection and Maintenance Program</b>	DD	11/04	6/05	
TA-18	5.6.5	<b>Configuration Management and Change Control Program</b>	DD	11/04	6/05	
TA-18	5.6.6	<b>Conduct of Operations Program</b>		11/04	6/05	

FACILITY	TSR/AC#	TITLE	SPECIFIC CONTROL ELEMENT	4.5 SCHEDULED/ COMPLETE DATE/(Y/N)	4.6.2 SCHEDULED/ COMPLETE DATE/(Y/N)	LAST UPDATED MM/DD/YY
TA-18	5.6.6.1	Confirm SHEBA solution level measurement	SS	11/04	6/05	
TA-18	5.6.6.2	Restrictions on crane and forklift operations	SS	11/04	6/05	
TA-18	5.6.6.3	Limitations on forklift usage inside Bldg. 127 if significant quantities of nuclear materials are present	DD	11/04	6/05	
TA-18	5.6.6.4	Two-person rule	SS	11/04	6/05	
TA-18	5.6.7	<b>Fire Protection Program</b>		11/04	6/05	
TA-18	5.6.7.1	Limit combustible material inside CASAs, vaults and Buildings 127 & 227	SS	11/04	6/05	
TA-18	5.6.7.2	Radiative heat exclusion boundary control program	SS	11/04	6/05	
TA-18	5.6.7.3	Control of combustible materials outside CASAs	DD	11/04	6/05	
TA-18	5.6.7.4	Hydraulic oil leak spray shields	SC	11/04	6/05	
TA-18	5.6.7.5	Prevent fuel truck refueling operations near CASAs, Hillside Vault or other facilities containing > 1 g PuE MAR	DD	11/04	6/05	
TA-18	5.6.8	<b>Onsite (TA-18) Transportation Control Program</b>		11/04	6/05	
TA-18	5.6.8.1	ROBUST CONTAINERS for transportation of dispersible nuclear materials	SC	11/04	6/05	
TA-18	5.6.8.C	Use of tie-down equipment and straps for vehicle transport of SNM	DD	11/04	6/05	
TA-18	5.6.9	<b>Quality Assurance Program</b>		11/04	6/05	

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TA-18	5.6.9.1	Software QA/V&V in accordance with NQA-1 subpart 2.7	DD	11/04	6/05	
TA-18	5.6.10	Unreviewed Safety Question (USQ) Program	DD	11/04	6/05	
TA-18	5.6.11	Training and Qualification Program		11/04	6/05	
TA-18	5.6.11.1	Criticality safety training	SS	11/04	6/05	
TA-18	5.6.11.2	RTO construction training	DD	11/04	6/05	
TA-18	5.6.11.3	Training on critical assembly machine operation warning system	SS	11/04	6/05	
TA-18	5.6.11.4	Worker training on process-specific hazards	DD	11/04	6/05	
TA-18	5.6.11.5	Critical assembly worker training	DD	11/04	6/05	
TA-18	5.6.11.6	Fissionable material handler training	DD	11/04	6/05	
TA-18	5.6.11.7	UF <sub>6</sub> operations training	DD	11/04	6/05	
TA-18	5.6.12	Emergency Management Program	DD	11/04	6/05	
TA-18	5.6.13	Occurrence Reporting System	DD	11/04	6/05	
TA-18	5.6.14	Operating Records System	DD	11/04	6/05	
Transportation	A.5.6.4	Transportation Program	<ol style="list-style-type: none"> <li>1. NUCLEAR MATERIALS SHALL be transported only for government purposes in a qualified GOV driven by a qualified GOVERNMENT EMPLOYEE. Note: This control is a "directive language AC" and does not fall under the provisions regarding program intent and invalidation of the DSA summary as described in Section A.5.3.4, AC VIOLATION. Moreover, any noncompliance with this AC results in immediate TSR VIOLATION.</li> <li>2. The appropriate TP and controls SHALL be</li> </ol>	11/04	6/05	

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			<p>selected and implemented before performance of a transfer commensurate with the type/DOE-STD 1027 hazard category for the quantity of NUCLEAR MATERIALS to be transferred (e.g., Hazard Category 2 PARTICULATE quantities must have a full road closure before transfer).  Note: This control is a "directive language AC" and does not fall under the provisions regarding program intent and invalidation of the DSA summary as described in Section A.5.3.4, TSR VIOLATION. Moreover, any noncompliance with this AC results in immediate TSR VIOLATION (e.g., a transfer is performed using a TP and controls for Hazard Category 3 quantities of NUCLEAR MATERIALS when Hazard Category 2 quantities of PARTICULATE NUCLEAR MATERIALS exist).</p> <p>3. Enclosed transport vehicles SHALL be used whenever possible. When the size/ configuration of the packaging does not permit the use of an enclosed vehicle, alternate measures to contain potential releases during accident conditions will be employed (e.g., use of a tarp secured over and around the package).</p> <p>4. A vehicle inspection and maintenance program that meets the requirements of the FMCSRs SHALL be employed to maintain transport vehicles. This program ensures that vehicle safety features, such as brakes, horns, and lights, are in good working order before transport activities occur.</p> <p>5. Weather, road, and traffic conditions SHALL be assessed before transport activities occur to ensure that transport activities occur during conditions that promote safety. Assessments will evaluate weather, road, and traffic conditions against established criteria to ensure that transportation activities do not take place during the following types of conditions: heavy traffic, heavy rain fall, low visibility/low light, slippery road surfaces/heavy snow or ice accumulation, high winds, etc.</p> <p>6. Combustible loading SHALL be maintained AT.ARA in the transport vehicle. Moreover.</p>			



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			<p>combustible materials allowed in the transport vehicle would be limited to those associated with the transported items (e.g., packaging materials, tie-downs, and tarps).</p> <p>7. A vehicular accident prevention strategy that includes the use of ROLLING WORK ZONES and ROAD CLOSURES, as appropriate, SHALL be implemented for transport activities. The following specific controls are applicable to the vehicular accident prevention strategy.</p> <p>7.1 The speed of the transport vehicle and convoy is limited to speeds based on an evaluation against established criteria that balances the minimization of kinetic energy that would be imparted to a package in an accident with meeting programmatic needs/mission requirements.</p> <p>7.2 Safety escort vehicles SHALL be posted to the front and the rear of the transport vehicle. These vehicles will maintain an appropriate distance from the transport vehicle and possess appropriate warning/notification devices (e.g., signs and flashing lights).</p> <p>7.3 Traffic control plans are used to ensure that traffic control points are identified and that adequate numbers of personnel/vehicles to block or redirect traffic are deployed to these locations. Traffic control points are established at intersections along the transport route, as well as at entrance points such as side roads and parking lots.</p> <p>7.4 Transport vehicle operators SHALL be properly trained and qualified to operate the specific types of vehicles that they drive. Training and qualification SHALL include a CDL with a HAZMAT certification.</p> <p>7.5 A Trip Commander SHALL be assigned the responsibility for coordinating the NUCLEAR MATERIALS transfer, conducting pretransfer briefings, and ensuring that necessary controls and requirements are established and maintained.</p> <p>7.6 Public notifications of ROLLING WORK ZONES and ROAD CLOSURES SHALL be</p>			

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			<p>made before the transfer.</p> <p>7.7 Notifications of EMOs of ROLLING WORK ZONES and ROAD CLOSURES SHALL be made before the transfer.</p> <p>7.8 Sweeps of the transfer route SHALL be conducted to ensure that the Trip Commander is kept current on the status of road and traffic conditions.</p> <p>7.9 Real-time communications SHALL be established between the Trip Commander and entities involved in the transfer (e.g., EMOs and convoy vehicles).</p> <p>7.10 Transport plans SHALL be developed to document necessary requirements/controls for a transfer to take place (e.g., tie-down configuration, packaging selection, limits on dispersible material quantities, material quantity limits for criticality, and use of road closures).</p> <p>7.11 A staffing plan SHALL be implemented that addresses fitness for duty in the scheduling and assignment of drivers for transportation activities.</p>			
Transportation	A.5.16	Packaging Evaluation Program	<p>A procedure SHALL exist to conduct evaluations of packaging configurations against the functional performance criteria provided in the DESIGN FEATURES section for primary containment and outer packaging. This program will evaluate packaging with respect to structural strength/impact, thermal resistance, and leak-tightness considerations. For DOE STD 3013 cans and Type A/Type B containers, these criteria are automatically met by virtue of established pedigree. For packagings that are not of this type, the evaluation will be performed against the criteria using the following types of sources as applicable: design/construction drawings and descriptions, destructive/nondestructive test and evaluation data, quality assurance documentation, etc. This program will also include a process for determining if a package meets the performance criteria to be considered a DOT EQUIVALENT PACKAGE.</p>	11/04	6/05	

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Transportation	A.5.17	Transfer Evaluation Program	A program shall be implemented that analyzes the characteristics of a nuclear material transfer activity against the results of the safety assessment (barrier analysis). This program will apply a systems approach in reviewing all aspects of the proposed transfer activity, including elements such as material type, quantity, and form, proposed shipping packages and containers, criticality safety, and vehicles and loading constraints. From this evaluation, an appropriate set of barriers and associated TSR controls that provide an acceptable level of risk will be selected. The TSR controls, which will include all or most of the controls listed under section a.5.6.4, Transportation, and possibly additional controls for material limits in support of public risk reduction or criticality safety, are then incorporated in a Transport Plan. This TP serves as the guiding operational procedure for completing the nuclear material transfer in a safe manner.	11/04	6/05	

Notes:

(1) The RLWTF ITSRs and associated DACs were not derived directly from the approved AB. Due to the lack of a comprehensive hazard analysis and accident analysis in the approved RLWTF AB, a conservative approach was taken in developing the ITSRs. Therefore, since the DACs specified above are not directly traceable to the AB hazard/accident analysis, their treatment under DNFSB Recommendation 2002-3 is indeterminate. They have been included here to be conservative.

(2) LANSCE: There are no TSRs/ACs for Area A East.