Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

JUL 29 2015

The Honorable Jesse H. Roberson
Vice Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Madam Vice Chairman:

Subject: Update on the Progress of Activities to Meet Recommendation 2012-1, Savannah River Site Building 235-F Safety, Implementation Plan (IP) Deliverables 1-3 and 1-4

This letter is to inform you that deliverable 1-3 "Restore cell infrastructure in Plutonium Fuel Form Facility (PuFF) cells 6-9" will be delayed beyond the expected delivery date of July 31, 2015. While actions associated with this deliverable may initiate prior to this date, completion is not expected until October 2015. This delay is due to a change in approach associated with readiness assessments for risk reduction in the facility. As part of our commitment to explore alternatives and efficiencies, Department of Energy (DOE) and the contractor identified an approach to accelerate conduct of the Readiness Assessment (RA) and initiation of deactivation for cells 6-9. The RA associated with deliverable 1-4 "Complete a RA for initiation of deactivation activities in PuFF cells 6 through 9 and implement the Deactivation Basis for Interim Operation (BIO)", due May 31, 2016, was completed on July 10, 2015. This advances the RA 10 months compared to the expected delivery date identified in the IP schedule changes transmitted last year. Upon completion of eight prestart corrective actions resulting from the RA, the BIO will be implemented and infrastructure restoration activities will begin.

With this approach, DOE expects to initiate deactivation/decontamination activities in cells 6-9 as early as October of this year. If deactivation in cells 6-9 demonstrates to DOE that work in cells 1-5 can be conducted safely, there is increased likelihood that the second RA discussed in deliverable 1-8 will not need to be performed.

I will continue to keep you informed on the Department's progress concerning Building 235-F safety, including when the Department has restored infrastructure for cells 6-9 (completing deliverable 1-3).

Sincerely,

for Jack R. Craig
Savannah River Site Manager

NMPD-15-0072

JUL 29 2015

Enclosure:
United States DOE Savannah River
Operations Office RA Report for Building 235-F
Deactivation BIO/Technical Safety
Requirements, Revision 1, and Risk Reduction
Activities

cc w/encl:
Mark Whitney, EM-1
Jim Hutton, EM-40
Todd Lapointe, EM-41
Matthew Moury, EM-40
Joe Olencz, AU-1.1

Enclosure: Letter, SUBJECT: Update on the Progress of Activities to Meet Recommendation 2012-1, Savannah River Site Building 235-F Safety, Implementation Deliverables 1-3 and 1-4, dated

JUL 2 9 2015

U.S. DEPARTMENT OF ENERGY

SAVANNAH RIVER OPERATIONS OFFICE

READINESS ASSESSMENT REPORT

FOR

BUILDING 235-F

DEACTIVATION BIO/TSR REV. 1 AND RISK REDUCTION ACTIVITIES

July 10, 2015

PREPARED BY: _____ **DATE:** 7/10/15
Robert D. Yates, Team Leader

EXECUTIVE SUMMARY

The DOE RA scope verified the implementation of the Building 235-F Deactivation Basis for Interim Operations (BIO) Rev. 1, Technical Safety Requirements (TSR) Rev. 1, and a verification that the Risk Reduction activities associated with Building 235-F Plutonium Fuel Form (PuFF) process cells can be conducted safely. The RA was conducted in accordance with DOE Order 425.1D, "Verification of Readiness to Start up or Restart Nuclear Facilities," DOE-STD-3006-2010, "Planning and Conducting Readiness Reviews," the DOE POA and RA IP.

The DOE RA was initiated on June 16, 2015, and consisted of field evolutions, document reviews, and personnel interviews. The Risk Reduction activities observed were glove replacement, manipulator replacement, cell window draining and removal, and extended tool usage, as required by the POA.

The team identified eight Pre-Start Findings, seven Post-Start Findings, and 12 Opportunities for Improvement for SRNS and one Opportunity for Improvement for DOE-SR. The team observed significant improvement in conservative decision making by contractor management when addressing issues during the assessment. All design documents reviewed to implement the 235-F Risk Reduction scope were of high quality. The Risk Reduction team is proficient in working with TRU materials. The team also demonstrated a high level of attentiveness for the industrial and radiological hazard associated with the risk reduction activities.

The DOE RA team determined all functional areas to be satisfactory when the identified pre-start findings are appropriately resolved.

1.0 INTRODUCTION

1.1 BACKGROUND

Building 235-F was constructed in the 1950s as part of the original Savannah River Plant's weapons materials production and fabrication missions. The facility was used primarily for plutonium and neptunium component production processes within shielded cells and glovebox lines from the late 1950s until the early 1980s. When the last process line was idled in 1983, the facility's last remaining mission was vault storage, surveillance, and repackaging of containerized special nuclear material (SNM). That storage and repackaging mission was terminated in 2006 and all SNM, except for holdup, was removed from the building. The majority of the holdup is in process cells, wing cabinets, and gloveboxes, with small amounts identified in process exhaust ventilation systems.

Building 235-F and support facilities have been maintained in a surveillance and maintenance condition. The Deactivation Basis for Interim Operations (BIO) Rev. 1, provides the safety basis for the initial deactivation of Building 235-F in its current status. It addresses limited deactivation activities, safety Structures, Systems, and Components (SSC), Natural Phenomena Hazard effects, and continued inspection and maintenance of SSCs necessary for satisfactory confinement of radiological material and for protection of workers, the public, and the environment.

Overall Building 235-F deactivation is being addressed in a Deactivation Project Plan. Initial deactivation activities addressed in this BIO are those associated with the removal of radiological Material at Risk (MAR) as holdup in process cells, gloveboxes, and wing cabinets associated with the Plutonium Fuel Form (PuFF) process cells 6 through 9.

Primary safety controls include confinement and filtered ventilation for the process holdup, integrity programs for the building and enclosures, and exhaust ventilation path to ensure that radiological holdup remains confined. New controls have been developed for the PuFF enclosure ventilation alarms, radiological waste processing and container handling, and a puncture/ laceration wound hazard management program.

The bounding holdup inventory in Building 235-F, including uncertainty, used in the accident analysis is 1,588 grams (g) Pu-238 and 287 g Np-237. Based on this quantity of MAR, the building exceeds the HC-2 threshold specified in DOE-STD-1027 (3.6 g of Pu-238) and is thus categorized as a HC-2 non-reactor nuclear facility.

1.2 PURPOSE OF REVIEW

The purpose of the DOE RA was to verify the implementation of the Building 235-F Deactivation Basis for Interim Operations (BIO) Rev. 1, Technical Safety Requirements (TSR) Rev. 1, and a verification that the Risk Reduction activities associated with Building 235-F Plutonium Fuel Form (PuFF) process cells can be conducted safely.

1.3 SCOPE

Selected evolutions were performed to demonstrate safe and disciplined operations, procedure adequacy, equipment operability, and response to abnormal conditions. These field evolutions included risk reduction activities such as cell window removal, manipulator removal/installation, cell glove replacement, use of extended tools, TRU waste handling, and waste packaging and transportation. The field evolutions were primarily conducted in the mockup with demonstrations as close to 'live operation' as possible, understanding that actual 'hot operation' was not authorized.

In addition, F-Area Complex Operations evolutions were observed to verify the implementation of the Deactivation BIO/TSR Rev. 1. Evolutions such as routine rounds, equipment calibrations, TSR required surveillances, and drills were conducted in Building 235-F.

Formal and informal interviews were conducted to determine the level of knowledge of F-Area and Risk Reduction personnel. Additionally, document reviews and facility walk-downs were conducted to determine readiness for safety basis implementation and risk reduction activities.

2.0 READINESS ASSESSMENT EVALUATION

2.1 FA01-Design (2015-SA-2954)

Pre-Start Finding:

The Breathing Air Modification(s) required for Risk Reduction activities is not complete as identified in the Contractor Readiness Assessment.

Post-Start Findings:

The Turnover Package for the modification required by M-DCP-F-11005 could not be found.

Opportunities for Improvement

None

2.2 FA03-Management Systems (2015-SA-2956)

Pre-Start Finding:

None

Post-Start Findings:

None

Opportunities for Improvement:

None

2.3 FA04-Training (2015-SA-2958)

Pre-Start Finding:

None

Post-Start Findings:

1. The F-Area Complex Facility failed to implement an adequate graded systematic approach to training for the 235F Deactivation BIO/TSR implementation.
2. The task list failed to identify two operator tasks:
   a) Performing the Functional Testing of the PuFF Low Differential Pressure Alarm (new equipment with a Surveillance Requirement).
   b) Operating the Remote Monitoring equipment (new safety function with a Surveillance Requirement).

Opportunities for Improvement:

1. F-Area Complex needs a revised Task List and Task-to-Training Matrix.

2. F-Area Complex Shift Operation Managers would benefit from additional as well as continuing training on the TSRs to include scenarios or situational exercises and reviews on the application of the front sections of the TSRs (i.e., DEFINITIONS, 3.0.x and 4.0.x application LCOs).

3. F-Area Complex Facility Management should communicate and institutionalize expectations on when Operations and Engineering Management concurrence is required to enter and exit TSR conditions (i.e., routine vs. off-normal entries).

2.4 FA06-Safety Documentation (2015-SA-2959)

Pre-Start Finding:

235-F operating procedures 235-F-023 and 235-F 3354 failed to implement remote monitoring requirements.

Post-Start Findings:

None

Opportunities for Improvement:

None

2.5 FA10-Maintenance (2015-SA-2960)

Pre-Start Finding:

None

Post-Start Findings:

Reference Procedure W-794036, *Pneumatic and Electronic IPI Calibration*, could not be performed as written and workers failed to stop when it could not be completed.

Opportunities for Improvement:

None

2.6 FA11-Radiation Protection (2015-SA-2961)

Pre-Start Findings:

1. RWP 15-FCA-104, Rev. 1, Task 1 does not specify a suspension guide for removable alpha contamination as required.

2. In some instances, personnel contamination surveys did not meet Radiological Control Organization requirements.

Post-Start Finding

None

Opportunities for Improvement:

None

2.7 FA12-Fire Protection (2015-SA-2962)

Pre-Start Findings:

1. The Fire Department Pre-Fire Plan (2Q2-4-F 235-000F Fire Control Plan Rev. 20) is outdated and contains incorrect information.

2. Form FRM-235-F-215 and Procedure 221-F-51105 do not align with the roles and responsibilities of the fire protection engineer and the fire protection coordinator as stated in the 2Q Fire Protection Manual, Procedure 5.5.

Post-Start Finding:

The current FHA does not adequately describe the proposed activities for Deactivation Phase 1 Activities 1-4. Several planned activities (Section 3.2.2 - Deactivation Activities Fire Analysis) are listed as only being analyzed from a conceptual standpoint based on best available information.

Opportunities for Improvement:

1. The "Modification Fire Hazard Analysis" (F-MFHA-F-00001) for the F Area Complex Building 235-F Deactivation Phase 1 was not suspended in document control.

2. There is no formal 235-F barrier inspection program/procedure to support the FHA/CHAP assumptions.

3. There is no formal combustible loading chart available for consistently assessing what different materials may represent from a fire loading standpoint. Determination of the fire loading that materials represent is based on personnel judgement.

4. Evaluate developing procedures to support the Deactivation Phase 1 activities to support designated transient combustible storage areas, combustible loading limits, etc.

5. The facility should evaluate keeping the transient combustible loading audit on a weekly basis vice every two weeks.

2.8 FA19-Packaging and Transportation (2015-SA-2963)

Pre-Start Finding:

None

Post-Start Findings:

None

Opportunities for Improvement:

None

2.9 FA20-OSHA (2015-SA-2964)

Pre-Start Finding:

None

Post-Start Findings:

During demonstration of the manipulator removal a technician used an unapproved modified tool.

Opportunities for Improvement:

An Automatic Electronic Defibrillator is not available.

2.10 FA22-Conduct of Operations (2015-SA-2965)

Pre-Start Finding:

Risk Reduction personnel were unable to adequately demonstrate draining the cell shield window #8.

Post-Start Findings:

Not all pre-job briefings included a discussion on SAFER, therefore topics such as puncture wound prevention may not be discussed.

Opportunities for Improvement:

1. The work packages for draining Cell Shield Window #8 and Removal of Cell #8 Outer Window Assembly, (Work Order 01378653-01 and Work Order 01378653-02, respectively), should be evaluated for improvement.

2. The 2S drills should be revised to make the scenarios more challenging so personnel are better prepared to handle unexpected conditions. Multiple event drills would accomplish this.

3. Less than adequate performance and opportunities for improvement should be discussed during post-job reviews.

1.11 FA24-Waste Management (2015-SA-2966)

Pre-Start Finding:

The 235-F GCO has not completed all training as required by the Waste Certification Plan.

Post-Start Findings:

None

Opportunities for Improvement:

None

1.12 Federal Oversight (2015-SA-3404)

Pre-Start Finding:

None

Post-Start Findings:

None

Opportunities for Improvement:

DOE-SR, OSQA has a shortage of qualified personnel needed to adequately support line organization oversight of some program areas under its cognizance.

3 LESSONS LEARNED

- Team members generally must be available full time for the entire duration (from start of RA to issuance of the report) of the RA. Exceptions should be approved by the team leader and management. This must be considered when scheduling RAs near national holidays, major conferences, etc.
- There should be a central repository for lessons learned so that team leaders and senior advisors can review them when preparing for an RA.
- Feedback on team member performance should be provided to their supervisor(s) by the team leader.

4 DISSENTING PROFFESSIONAL OPINIONS

There were no dissenting professional opinions.

5 APPENDICES

Appendix I: DOE RA Team Biographies
Appendix II: STAR Assessment Forms

APPENDIX I

DOE RA Team Biographies

R. Dennis Yates
Team Leader
Facility Representative
DOE-SR Nuclear Material Operations Division

Mr. Yates is a Facility Representative for the DOE-SR Nuclear Materials Stabilization Operations Division at the Savannah River Site. Mr. Yates has 34 years of nuclear experience and is a fully qualified DOE Facility Representative. He holds a Bachelor of Science degree in Environmental and Hazardous Materials Management from the University Of Maryland University College. Mr. Yates has been with DOE-SR for approximately 6 years. During his time with DOE-SR he has completed Facility Representative Qualification and participated on the oversight team for the contractors ISMS Phase II verification review. Prior to joining DOE-SR, Mr. Yates spent 15 years working for the Savannah River Site prime contractor as an instructor, drill lead, training manager for F and H Tank Farms, Shift Manager for H-Tank Farm, Training and Procedures Manager for Tritium and a senior ConOps Advisor F and H areas. In these roles he participated in Facility Self Assessments, Management Self Assessments and Operational Readiness Reviews and served as a peer assessor in a Facility Evaluation Board assessment. Mr. Yates served as the lead Conduct of Operations assessor on a FEB assessment at the Idaho Nuclear Technology and Engineering Center project. He also qualified and served as Senior Supervisory Watch for both H-Canyon and HB-Line evaluating operators Conduct of Operations performance. In 1991 Mr. Yates certified as a Senior Reactor Operator at the Sequoyah Nuclear Plant and as a simulator instructor at the Watts Barr Nuclear Plant. From 1978 to 1990 Mr. Yates served in the U. S. Navy as a qualified engineering officer of the watch, engineering watch supervisor, machinery division leading petty officer and prototype instructor on board nuclear powered submarines and at the S8G Navy Nuclear Prototype Training Facility.

Patrick Casey
Senior Advisor

Mr. Casey has over 39 years of operations, operations oversight, and training experience in reactor and non-reactor nuclear facilities, including over 25 years of technical management experience. As a Principal Consultant, he provided DOE oversight assistance for re-packing TRU waste in the SRS F-Canyon which included both drum and waste box repacking. He also assisted DOE in the development of the DOE Technical Standards for Specific Administrative Controls (DOE-STD-1186) and Integrating Safety into Nuclear Design (DOE-STD-1189). As a senior consultant to DOE, he has assisted the Office of River Protection in improving the efficiency of DOE operations and programs. He has also served as senior technical consultant to the Chairperson of the Federal Technical Capability Panel and assisted DOE in the revision of the Federal Technical Capability Program Manual, DOE M, 426.1-1. He assisted in the development and revision of technical qualification program functional area qualification standards for Senior Technical Safety Manager, Safety Software Quality Assurance, Facility Representative, Environmental Compliance, Environmental Restoration, Decontamination and Decommissioning, and Transportation. He has served as the Subject Matter Expert (SME) for Conduct of Operations and for Training and Qualifications on various Operational Readiness Reviews, audits, and assessments at the Savannah River Site.

Mr. Casey's experience in the commercial nuclear industry includes operating experience in the construction and startup of a 900 MWe Pressurized Water Reactor. He also developed and implemented classroom, OJT, and simulator training programs supporting Reactor and Senior Reactor Operator License Training Programs. Additional experience in this area includes auditing commercial Reactor and Senior Reactor Operator license training programs to ensure compliance with Title 10 of the Code of Federal Regulations.

Keith Albertson
Facility Representative
DOE-SR Nuclear Material Operations Division

Mr. Albertson is a DOE-SR Facility Representative in the Nuclear Materials Operation Division (NMOD). Keith has been with DOE-SR since September of 2009. Before joining DOE, Keith was a DOE contract employee with Savannah River Remediation, LLC (SRR) for 12 years. While working with SRR, Keith's work involved regulatory work in the Liquid Waste Engineering Organization where he ensured compliance with the Liquid Waste Authorization Basis, SC Department of Health and Environmental Controls (SCDHEC) permitting and other federal and state regulatory requirements. Keith's other assignments included Liquid Waste Shift Operations Management, as well as, Technical Training, and Procedure Writing. For the five years prior, Keith performed project management duties with a technical consulting firm, and he served nine years in

the US Navy Nuclear Power Program as a submarine reactor operator and a technical instructor.

John C. Barnes
Facility Representative
DOE-SR Nuclear Material Operations Division

Mr. Barnes is a mechanical engineer in the Nuclear Material Operations Division at the Department of Energy (DOE) Savannah River Operations Office (SR). He is a Facility Representative (FR) responsible for oversight of the safe operations of the H-Canyon Facility. Mr. Barnes has previously served as FR for the HB-Line, FB-Line, SRNL, F/H Analytical Lab (F/H Lab), F-Canyon Complex and F-Area Material Storage (FAMS) operated by Savannah River Nuclear Solutions. The primary mission of the H-Canyon Facility is to stabilize uranium and plutonium materials as dictated by DOE mission needs. He has been involved with the restart of the F and H Canyon and the F and H B-Line facilities and has performed duties in support of other DOE ORRs. John has served in an oversight role at SR for more than twenty-five years.

Prior to working for the DOE, John worked as a mechanical/nuclear engineer at the Charleston Naval Shipyard, Charleston, SC for six years. While at Charleston, he provided engineering support for the overhaul and refueling of naval nuclear submarines and the design/fabrication/startup of the nuclear support facilities and key support systems at Trident Refit Facility, Kings Bay, Georgia.

John holds a Bachelor of Science degree in Mechanical Engineering from the University of South Carolina.

William M. Bell
Facility Representative
DOE-SR Nuclear Material Operations Division

Mr. Bell has over forty years of nuclear related experience, including operations, engineering design, and oversight. He is currently assigned as a Facility Representative F/H Laboratory. He has been a qualified Facility Representative with the Department of Energy for twenty-five years. He has provided oversight for K-Reactor restart, H-Tank Farm, FB-Line, 235-F, K-Area Material Storage Facility, and the L-Area Spent Fuel Facility at the Savannah River Site, and the Critical Experiments Facility, TA-55 Plutonium Processing Facility, and Chemical and Metallurgical Research (CMR) Facility at Los Alamos National Laboratory. Several of the facilities involved extensive use of glove boxes and hot cells for processing of Plutonium and other actinides. He has also participated in the Waste Isolation Pilot Plant and SRS 2H Evaporator Operational Readiness Reviews, several readiness assessments and a Type "A" Accident Investigation.

He has over eleven years of design experience related to nuclear piping systems in commercial nuclear power plants. He was the project engineer for the design of a $7.5 million low-level radioactive waste storage building at a commercial nuclear utility. He served as a nuclear qualified officer on board two nuclear submarines.

Mr. Bell holds a Bachelor of Science in Physics from Florida Institute of Technology (1969), and a Master of Science degree in Nuclear Engineering from the University of Florida (1976).

Jeffery Crenshaw
Lead Program Manager
DOE-SR Nuclear Material Programs Division

Mr. Crenshaw has over 24 years of experience with the Department of Energy (DOE) at the Savannah River Site (SRS). Mr. Crenshaw received a B.S. in Chemical Engineering from the University of South Carolina. Currently, he is a Lead Program Manager with the Nuclear Materials Programs Division within the DOE-Savannah River Operations Office. His responsibilities include program management and oversight of the contractors Environment, Safety, Health, Quality Assurance, Safeguards & Security, and Contractor Assurance Programs at the Savannah River National Laboratory. Throughout his years at the SRS, Mr. Crenshaw has over 12 years of experience overseeing and managing Quality Assurance and Contractor Assurance Programs (i.e., Lessons Learned, Assessments, Price-Anderson) of major contractors at the SRS at both the site level and as matrix-support to numerous facilities at SRS. This included the management of the contractors Standards/Requirements Identification Documents and their associated Integrated Safety Management System Description Document.

Roy (Tim) Hancock
H-Canyon NSS / SSO Engineer
DOE-SR Nuclear Material Engineering Division

Mr. Hancock is qualified as an Instrument & Controls (I&C) Engineer, Safety Systems Oversight Engineer (SSO), Nuclear Safety Specialist (NSS) and is currently assigned to the DOE-SR-AMNMS as the H-Canyon NSS / SSO engineer. Previous assignment, Mr. Hancock severed as the Design Authority Lead engineer for the Salt Waste Processing Facility Project at SR. He has more than 27 years in the design and construction of chemical and nuclear facilities. Mr. Hancock currently has six years of DOE-SR contractor oversight experience.
Before joining DOE he worked for twenty years with Bechtel Savannah River Incorporated at the Savannah River Site (SRS) where he served as a Principal Systems Engineer, Project Team Lead, I&C Lead Design Engineer and as a Project Design Authority Engineer.

Mr. Hancock provided systems engineering support to multiple United States Department of Energy (US DOE) entities (i.e. EM, NNSA, NE) and multiple US DOE contractors across the DOE Complex. Primary roles and emphasis was supporting US DOE project documents (i.e. project functional requirements, alternative analysis studies and risk management studies) development in compliance to DOE Order 413.3. As a Project Team Lead, Mr. Hancock managed multi-organizational and multi-disciplined project teams to successfully executed Cost Funded, Capitol Equipment and General Plant project scopes in compliance with US DOE 413.3 and US DOE contractor procedures. Mr. Hancock's duties as an I&C Lead Design Engineer required him to planned and supervised the selection of engineering techniques and procedures and provided technical direction and assigned work to engineers, designers and drafters. He led the development of design documents to meet or exceed design requirements in accordance with nationally recognized codes, regulations, and standards for US DOE Line Item projects. As a Project Design Authority Engineer, Mr. Hancock supported the installation, maintenance and modifications to instruments in multiple Category 2 US DOE nuclear facilities.

Mr. Hancock also served as an Engineman Chief Petty Officer and is now retired. He was the Senior Enlisted Adviser for the US Naval Reserve Center in Columbia, South Carolina. Mr. Hancock also served as the Chief Petty Officer In Charge of NR NPSTU-0813, where he managed the implementation of military training requirements for Sailors new to the US Navy. Mr. Hancock has a Bachelor's Degree in Mechanical Engineering with a minor in History from the University of South Carolina, Columbia.

James W. Naylor
Fire Protection Engineer
DOE-SR Technical Services Division

Mr. Naylor is a fire protection engineer providing technical support to DOE-SR's Technical Services Division (TSD) fire protection engineer. Mr. Naylor has 35 years of nuclear fire protection engineering experience and is a registered professional engineer in the fire protection field. He holds a Bachelor of Science degree in Fire Protection and a Master of Science degree in Safety Management, both from the University of New Haven. Mr. Naylor has been under contract with Project Services Group (PSG) for over two years providing technical engineering support on a part time basis to the DOE-SR fire protection engineer. During his time supporting DOE-SR, he has completed numerous reviews of contractor generated fire protection engineering evaluations (EE's), facility Fire Hazard Analysis (FHA) and facility Documented Safety Analysis (DSA) and supporting documentation. Prior to joining DOE-SR, Mr. Naylor worked for the Savannah River Site prime contractor for 22 years as a fire protection engineer. During that timeframe, Mr. Naylor's professional development lead to the assignment of lead fire protection engineer managing the technical field staff supporting the SRS nuclear operations. In this role, he participated in Facility Self Assessments, Facility Evaluation Board (FEB) assessments, DOE-HQ Programmatic Assessments and Operational Readiness Reviews (ORR) as both an assessor and/or as technical support responding to issues. Prior to working at SRS, Mr. Naylor worked for North East Utilities in Connecticut. In this position, he was a Senior Fire Protection Engineer responsible for the oversight of the nuclear fire protection program and technical engineering staff supporting four operating nuclear power plants. As part of this assignment, Mr. Naylor was the co-lead on two nuclear power plant Safe Shutdown Analysis assessments conducted by the Nuclear Regulatory Commission. He was also involved with conducting independent tri-annual fire protection program assessments of other Region One nuclear facilities.

Jack L. Parker
Nuclear Safety Program Manager
DOE SR Office of Safety and Quality Assurance/Technical Support Division

Mr. Parker is currently the Nuclear Safety Program Manager for DOE-SR. He has been working for the Department of Energy for six years. He is qualified per the Technical Qualification Program for both Nuclear Safety Specialist and Radiation Protection. Mr. Parker holds a Ph.D in Nuclear Engineering from the University of New Mexico and a M.S. in Health Physics from Colorado State University in addition to degrees in Physics from the University of Tennessee (M.S.) and Brigham Young University (B.S.). During his time with DOE-SR, he has participated in both Phase I and Phase II ISMS verification reviews of the contractor. Previous experience includes being a Health Physics consultant (Stan A. Huber Consultants, Inc. in New Lenox, Illinois) where principle duties were auditing radioactive material license holders for compliance with state and federal regulations pertaining to radiation safety. This included being a liaison between the licensees and the state and federal regulators, especially in interpreting the regulations. Other duties involved providing health physics support where needed (radiation surveys of area and personnel, decontamination and decommissioning, radiation safety training, emergency response, instrument calibration, sealed source leak tests). He served as Radiation Safety Officer of the company for three years.

Daniel B. Taylor
Lead Startup Engineer
DOE-SR Salt Waste Processing Facility

Mr. Taylor has over twenty years of experience as a Facility Representative at DOE-SR in several facilities including HB and FB-Line (including 235-F), both H and F-Tank Farm, the Savannah River National Laboratory, and the Consolidated Incinerator Facility. Mr. Taylor has participated in an Operational Readiness Reviews for the K-Area Interim Storage Facility and the High Level Waste 3H Evaporator Start-up, and has assisted in Readiness Assessments for the Saltstone Storage Tanks 3 and 5, and Waste New Waste Transfer System. He performed validation of Readiness Assessments for Plutonium and Neptunium Oxidation start-up at HB-Line, and the 3013 Bagless Transfer Operation at FB-Line. Mr. Taylor has been on the start-up team for several ORRs and RAs; the ORR for the Consolidated Incineration Facility, RAs for Tank Farm's 1H and 2H Evaporator restart, for grouting of Tanks 5, 6, 18, and 19, and for the H/F-Tank Farm Control Room Consolidation.

Mr. Taylor has a variety of experience in contamination control operations with the Department as the Chief Environmental Engineer at Ft. Detrick's Biological Defense Program, at the US Army Corps of Engineer's Toxic and Hazardous Material Agency. As an Army Preventive Medicine Officer with the Environmental Hygiene Agency at Aberdeen Proving Grounds, Mr. Taylor performed industrial hygiene and ventilation testing at chemical agent laboratories and incinerators, as well as medical, ammunition, and maintenance facilities.

Mr. Taylor holds Bachelor of Science in Chemical Engineering from Clemson University and a Master of Science in Administration from Central Michigan University.

Tony Robinson
Facility Representative
DOE-SR Nuclear Material Operations Division

Mr. Robinson is currently a DOE Facility Representative (FR) assigned to the Savannah River National Laboratory. Mr. Robinson has over 20 years of nuclear experience at DOE, Department of the Navy (Norfolk Naval Shipyard), Washington Group (Savannah River Site), Bechtel-Jacobs (Portsmouth Gaseous Diffusion Plant), and Shaw Engineering (Mixed Oxide Fuel Fabrication Facility). Mr. Robinson's nuclear related experience includes managing and developing Safety Analysis Reports, Technical Safety Requirements, Hazards Analysis Documents, and Safety Basis Strategies; performing oversight of nuclear operations; assessing safety basis document implementation; designing plutonium glovebox systems; and testing naval reactors. Mr. Robinson was the lead assessor for Operations and Management Systems for the DOE validation of readiness for the Saltstone Facility to commence processing higher organic material and he was the DOE lead assessor for Mechanical and Piping Systems for the DOE design review of ORNL Building 3019A U-233 Down-blending and Disposition Project. Mr. Robinson has participated as a Contractor Team Member on multiple Facility Self-Assessments, Readiness Assessments, and Operational Readiness Reviews. Mr. Robinson holds a Bachelor of Science Degree in Mechanical engineering from the University of Florida and a Masters of Mechanical Engineering from the University of South Carolina.

Marc Woodworth
Criticality Safety Specialist
DOE-SR Nuclear Material Engineering Division

Mr. Woodworth has over 24 years of experience in DOE nuclear facility safety, operations, and maintenance. He is currently a criticality safety specialist for DOE-SR on HB-Line, F/H-Lab and F-Area complex with Safety System Oversight (SSO) responsibility for Nuclear Incident Monitors (NIMs). He was previously the DOE-SR Facility Engineer with SSO responsibilities for the H-Canyon. He was also a criticality safety specialist in L-area, K-Area, and Solid Waste Management Facility (SWMF). He was a former packaging safety and transportation representative for the Nuclear Material Stabilization Project (NMSP). He was also a previously qualified facility representative in K-Area, L-Area, RBOF, M-Area and the D-Area heavy water facility.

APPENDIX II

DOE RA STAR Assessment Forms

Assessment Summary

Assessment No. **2015-SA-002954**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION			
2015-SA-002954 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015 **Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-01 (Design)			**Program Doc No:**
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)	
Assessor/Team Members: 1 Hancock, Roy (L0800) 40 Hrs (10 Fld Hrs) (Submitted: 7/10/2015) 2 Casey, Patrick (B9280) 2 Hrs		**Functional Area:** 01 Design	
Personnel Contacted: None		**Documents Reviewed:** 1 Please see Attachment 1	

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 Implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The assessor focused on one Safety Class (SC) and one Safety Significant (SS) design change packages. M-DCP-F-11005- Modify Nitrogen Backup to IA Supply to E5 fan dampers to Comply with SS Requirements and J-DCP-F-13004 - Bldg. 235-F PuFF Cell Low dP Alarms. These documents were reviewed for adequacy, completeness, and compliance with the SRNS procedures governing the development and implementation of facility modifications. Procedures were revised and / or developed to support implementation of the modifications. The 235-F Deactivation BIO and TSRs were reviewed. Spare Parts setup, preventive maintenance records, surveillances, and updated essential (Technical Baseline) drawings were reviewed. Turnover packages, Operations Acceptance Checklists and Design Change Implementation Forms were reviewed to ensure modifications were complete and accepted by Construction, Design Authority, and Facility Operations.

The readiness assessment (RA) identified one Finding related to E11 procedure compliance.

Noteworthy Practices:
All design documents reviewed by this assessor to implement the 235-F Risk Reduction scope were of high quality.

DOE-SR Assessment Information

Contractor Notification Sent By: Sent Dt:	**External Assessment Contact Info:**
CAS Effectiveness:	**CAS Elements:** Assessment, Management, Lessons Learned, Event Reporting, Measures, Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	UNSAT	Verify Design Change Packages (DCP) were closed per Manual E7, Procedure 2.38, Design Change Package.	Paper - Technical Information Assessed

Results: Per Manual E7, Procedure 2.38, Design Change Package.

DCP M-DCP-F-11005
The Design Authority (DA) is responsible for reviewing, approving, and transmitting form OSR 19-261, Design Change Implementation/Closure Forms (DCIFs) or for electronic closure, approving the amendment closure in SmartPlant.

The DA must electronically close the DCP in SmartPlant. - This DCP was statused as Complete / Closed on 2/12/2015 by the DA organization in SmartPlant.

The DA verifies all impacts that require disposition prior to turnover are complete and ensures all others are tracked in an approved tracking system. The DA ensured all turnover items are being tracked or closed out.

DCP - J-DCP-F-13004
The Design Authority (DA) is responsible for reviewing, approving, and transmitting form OSR 19-261, Design Change Implementation/Closure Forms (DCIFs) or for electronic closure, approving the amendment closure in SmartPlant.

The DA must electronically close the DCP in SmartPlant. - This DCP was statused as Complete/Closed on 1/22/2015 by the DA organization in SmartPlant.

The DA verifies all impacts that require disposition prior to turnover are complete and ensures all others are tracked in an approved tracking system.The DA ensured all turnover items are being tracked or closed out.

The Breathing Air Modifications required for 235-F and Risk Reduction Activities are not complete, therefore this assessor could not review project / operational / maintenance documents to verify operational readiness.

This LOI was not met.

Finding 1	(PRE-START) The Breathing Air Modification(s) required for Risk Reduction activities is not complete as identified in the Contractor Readiness Assessment.	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: The Breathing Air Modifications required for 235-F and Risk Reduction Activities are not complete, therefore this assessor could not review project / operational / maintenance documents to verify operational readiness.	

No OFIs Identified

No.	Grade	Description	Topic
2	SAT	Verify affected Technical Basis / Essential documents have been revised and placed in Document Control.	Paper - Technical Information Assessed

Results: Design Change Package - J-DCP-H-13004's Operational Acceptance Check List (OAC) shows that Essential Drawing (M-M6-F-4207) has been posted to be As Built. The Design Authority Documents Impact Review Check List (DADs) form for J-DCP-F-13004 identifies and requires all Essential Drawings (M-M6-F-4207) to be updated prior to release for Operations. M-M6-F-4207 Rev 7 has been updated and placed in Document Control.

Design Change Package M-DCP-F-11005 - The DADs form for M-DCP-F-11005 does not identify any Essential Drawings. Therefore this assessor concludes no Essential drawings have been updated and placed in Document Control.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	SAT	Ensure the MEL has been updated.	Paper - Technical Information Assessed

Results: Design Change Package - J-DCP-F-13004 Operational Check List shows that all equipment labels have been installed and the Master Equipment List (MEL) has been updated with the new equipment information. This assessor spot checked several CLI's modified by this DCP and the MEL was up to date.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Verify Essential drawings on two (2) DADs reviewed are in Document Control.	Paper - Technical Information Assessed

Results: Design Change Package - M-DCP-F-11005 DADs shows that no Essential drawings are required to be updated and placed into document control.

Design Change Package - J-DCP-F-13004 Design Authority Documents Impact Review Check List (DADs) shows that Essential drawings (M-M6-F-4207), are required to be updated and placed into document control.

The LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic

5	UNSAT	Verify two (2) turnover packages for SS or SC modifications contain documentation that specify the turnover boundaries, and punch list items. The two Modifications selected were J-DCP-F-13004 and M-DCP-F-11005.	Paper - Technical Information Assessed

Results: Turnover Package number 235-F-15-001 was generated to document the turn over of the SS 235-F PuFF Cell dP Alarm modification shown in J-DCP-F-13004, J-DCF-F-01387 and C-DCF-F-01594. This turnover package clearly documents the Turn Over Boundaries and contains the Construction Punchlist Items. All punchlist items were "B" punch list items.

The contractor could not produce the Turnover Package for the modification shown in M-DCP-F-11005. Therefore this assessor can not ensure the turnover boundaries were specified and the Punch list items identified and appropriately resolved.

This LOI was not met.

Finding 1	(POST-START) In 235-F, the Turnover Package for the modification required by M-DCP-F-11005 could not be found.	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: Per the SRNS 5E, Startup and Testing Manual, Procedure 1.0: A turnover process shall be established in accordance with the requirements of E11, Conduct of Project Management Control, Procedure 2.11 Project Baseline Data. To implement the above requirement, the turnover process shall be according to E11, Procedure 2.20 Turnover Process. This establishes the requirements and responsibilities necessary to ensure the safe and orderly transitional control of structures, systems and components (SSCs).	

No OFIs Identified

No.	Grade	Description	Topic
6	SAT	Verify the Final Acceptance Inspections (FAI's) / Functional Tests were completed and documented.	Paper - Technical Information Assessed

Results: The two FAI's performed by the contractor are as follow:

FAI for the modification shown in J-DCP-F-13004 was developed and documented on a Design Change Form Quality Inspection Plans (QIP). Proof of the FAI being performed can be found in Work Order 1141841-01 on the "Implementation / Design Change Form Quality Inspection Plans (QIP).

FAI for the modification shown in M-DCP-F-11005 was developed and documented on a Design Change Form Quality Inspection Plans (QIP). Proof of the FAI being performed can be found in Work Order 01295597-01 on the "Implementation / Design Change Form Quality Inspection Plans (QIP).

The two Functional Tests performed by the contractor are as follows:

J-DCP-F-13004 scope - Functional Test of PuFF Cell Low Differential Pressure Alarm, Procedure number 235-F-3419, Rev 0 was used to perform the functional test. This procedure was executed and the test acceptance criteria was met on 1/28/15.

M-DCP-F-11005 scope - Functional Test of Building 292-2F Nitrogen Backup Support System, Procedure number 235-F-7032, Rev 0 was used to perform the functional test. This procedure was executed and the test acceptance criteria was met on 1/26/15.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
7	SAT	Verify safety related systems (Safety Class (SC) and Safety Significant (SS)) SSCs are identified and boundaries are defined.	Paper - Technical Information Assessed

Results: The contractor generated design change notice (DCN) M-001 in DCP M-DCP-F-11005 to upgrade the 292-2F Nitrogen backup system for the instrument air supply to the E5 fan dampers. Originally this service was installed as a GS system. The Nitrogen backup system was modified to meet SS requirements as described in P-BFA-F-00002, Rev.0. The contractor clearly shows the safety related SSC's and safety system boundaries in DCN M-001.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
8	SAT	Verify (via a representative sample) component Functional Classifications were updated in Asset Suite from the following design change documents. -J-DCF-F-01387 - J-DCP-F-13004 - M-DCP-F-11005	Paper - Technical Information Assessed

		- M-DCF-F-04669	

Results: The sample Component Location Identifiers (CLI) are as follows:

J-DCP-F-13004 - CLI - FP-235000-GBEX-PSL-1215
M-DCP-F-11005 -CLI - FP-235000-IA-V-CK-A
M-DCF-F-04669 -CLI - No "New" CLIs were added or deleted with this DCF
J-DCF-F-01387 - No "New" CLIs were added. Bill of Material sheet changes only.

The functional classifications are represented correctly.

The LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
9	SAT	Verify by field walk down modification J-DCP-F-13004 - Bldg. 235-F PuFF Cell Low dP Alarm, that the installation is in accordance with the Design Change Package (DCP) and all "A" Punch list items identified on the 8Q-51 FAI walk down have been resolved.	Plant - Facility Systems Assessed

Results: Performed walkdown of J-DCP-F-13004 - Bldg. 235-F PuFF Cell Low dP Alarm. The Operations Acceptance Checklist (OAC) for work package 1295597 and turnover package 235-F-15-001 were reviewed. There were no "A" punch list items and the modification was implemented in the field as required per the design documents.

The LOI was met.

No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS

Reference Document	Refers To
Documents Reviewed	OTHER

Assessment Summary

Assessment No. **2015-SA-002956**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION				
2015-SA-002956 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015	**Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-03 (Management Systems)			**Program Doc No:**	
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015	
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)		
Assessor/Team Members: 1 Crenshaw, Jeffrey (B8251) 40 Hrs (30 Fld Hrs) (Submitted: 7/1/2015) 2 Casey, Patrick (B9280) 1 Hrs (1 Fld Hrs)		**Functional Area:** 03 Management Systems		

Personnel Contacted:

None

Documents Reviewed:

1. SRNS-N0000-2015-00066 (Ltr Clark to McGuire, dated 6/11/2015)
2. NMOD-15-0023 (Memo McGuire to Yates, dated 6/15/2015)
3. SRNS-N0000-2015-00052 (Ltr Kokovich to Gilles/Tadlock, dated 4/23/2015)
4. Safety Basis Implementation Plan for 235-F (N-SBIP-F-00020, Revision 1)
5. 2015-CTS-002375
6. SRNS-N3000-2015-00005, Revision 1 (235-F Risk Reduction Management Control Plan)
7. STO-FAREA-2015-01, Revision 0 (Senior Supervisory Watch 235-F Risk Reduction Project)
8. 2015-SA-002890
9. 2015-CTS-006540
10. 2015-CTS-003817
11. 2015-NCR-30-0016
12. CBU-F-2012-0047 NESHAP Evaluation
13. 2015-CTS-003638
14. 2015-CTS-002864
15. 2015-CTS-004236
16. 2015-SA-002126
17. 2015-CTS-003968
18. 2015-LL-0038
19. 2015-LL-0047
20. LABS-LL-2015-00003
21. 2015-SA-002959

Purpose/Scope

The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The following Functional Area 03 (Management Systems) LOIs were reviewed in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. As a result, there were no Findings or Opportunities for Improvement identified.

Noteworthy Practices:
None

DOE-SR Assessment Information

Contractor Notification Sent By: Sent Dt:	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**			
		Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	SAT	Ensure the current Safety Basis Implementation Plan (SBIP) for U-BIO-F-00003 Rev 1 and U-TSR-F-00005 Rev 1 and Memorandum of Understanding (MOUs), SRNS-IM-0210-00017, C-MOU-F-00001 and C-MOA-F-0002, and S-MOA-F-00001 are adequate and implemented.	Paper - Technical Information Assessed

Results: The Safety Basis Implementation Plan (SBIP) for Building 235-F Deactivation Basis of Interim Operation (BIO) and Technical Safety Requirements (TSR) (N-SBIP-F-00020, Revision 1) was issued on 1/26/2015. The SBIP is divided into distinct groups which are outlined as follows: Pre-Implementation Activities (Table I); Implementation Activities (Table II); Final Implementation Activities (Table III); and Post Implementation Activities (Table IV). All Pre-Implementations Activities (Table I) have been completed and supporting documentation was provided. Prior to declaration of readiness for Final Implementation, , all Implementation Activities (Table II) have been completed with the exception of the DOE-approved Authorization Agreement (AA) and closure and tracking of DOE Readiness Assessment findings and opportunities for improvement. As for the Final and Post Implementation Activities (Table III and IV), a number of the activities identified for completion remain open until approval of the AA by DOE. The remaining Final Implementation Activities (Table III) will be performed prior to declaring implementation complete and documented as such in the SBIP. As a prerequisite to initial hot operations, the 235-F Risk Reduction Activities Management Control Plan, Revision 1, SRNS-N3000-2015-00005 will ensure the satisfactory completion of the remaining Final Implementation Activities (Table III) by the 235-F Risk Reduction Project Director before proceeding into hot operations. The Post Implementation Activities (Table IV) will be performed upon completion of the Final Implementation Activities and documented as such in the SBIP.

A current listing of Memorandum of Agreements (MOA)/Memorandum of Understanding (MOU) for the F-Area Complex was reviewed, specifically the 235-F related MOAs/MOUs (i.e., SRNS-IM-0210-00017, C-MOU-F-00001, C-MOA-F-0002, and S-MOA-F-00001). One of the MOAs/MOUs has been canceled and the others were determined not to be directly associated with 235-F Risk Reduction Activities.

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
2	SAT	All organizations necessary for the operation have reported operational readiness by their responsible managers indicating that sufficient qualified support personnel and adequate equipment are available to support the startup/restart.	Paper - Technical Information Assessed

Results: On June 11, 2015, DOE-SR received from Savannah River Nuclear Solutions (letter Clark to McGuire, SRNS-N0000-2015-00066, dated 6/11/2015) requesting the commencement of the DOE Readiness Assessment (RA) for the 235-F Deactivation BIO and TSR Implementation and Risk Reduction Activities. The letter noted the completion of all pre-start corrective actions with the exception of the installation of the 235-F Breathing Air System which is being tracked to completion via STAR Item 2015-CTS-002375. In addition, the letter identified a number of improvement initiatives taken during the time period of issuing the contractor RA final report (4/23/2015) and the letter sent to DOE for the commencement of the DOE RA. The contractor improvement initiatives included conducting shift drills, observing the performance of rounds by facility management, level of knowledge of discussions with 235-F personnel, and continued mock-up activities.

On June 15, 2015, the DOE RA Team Leader received a memorandum from DOE-SR Startup Authorization Authority (NMOD-15-0023, McGuire to Yates, dated 6/15/2015) requesting the commencement of the DOE RA. The memorandum to commence with the DOE RA was based on the closure validation of the contractor RA pre-start corrective actions by DOE-SR line management (STAR 2015-SA-002890) with the exception of the installation of the 235-F Breathing Air System and the improvement initiatives taken by the contractor during the five week period following the contractor RA.

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	SAT	Permits/plans (e.g., RWP, critical lift plans RCRA, Land Application, NPDES, NESHAPS, etc.) required for startup/restart are approved and implemented.	Paper - Technical Information Assessed

Results: From the Environmental Permit perspective, there were no changes required for this phase of 235-F Risk Reduction Activities. SRNS has completed a Rad National Emission Standards for Hazardous Air Pollutants (NESHAP) Evaluation (CBU-F-2012-0047 NESHAP Evaluation) and concluded that this phase of the 235-F Risk Reductions Activities is a Potential Impact Category Level 4 emission source.

Radiological Work Permits were reviewed as part of Functional Area 11 (Radiation Protection).

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Lessons Learned/STAR issues have been evaluated for applicability and where applicable to the Startup/Restart actions have been taken to address the Lessons Learned/STAR issues.	Paper - Technical Information Assessed

Results: In accordance with Manual 1B, Procedure 4.14 and F-Area organizational Lessons Learned guidelines, the F-Area Complex (which includes the 235-F Risk Reduction Project) has implemented an Operating Experience Program that screens and as deemed applicable shares lessons learned and best practices from F-Area Complex facilities, other operating facilities on site, and from external informational sources including the DOE complex/commercial nuclear industry. The F-Area Complex has an individual assigned the responsibility as the Organizational Operating Experience Coordinator (OPEC). This OPEC works closely with the site Operating Experience Program Manager in assuring the transmittal/tracking of site-level lessons learned to F-Area Complex Management for review and further dissemination as evidenced by Lessons Learned Special Information Notice(s) 2015-LL-0047 (STAR item 2015-CTS-003638 and 2015-LL-0038 (STAR 2015-CTS-002864), and LABS-LL-2015-00003 (STAR 2015-CTS-004236).

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	SAT	Verify facility readiness has been validated for 235-F Risk Reduction and the revised BIO and TSR implementation by reviewing the results of the Facility Self Assessment and Readiness Assessment and verifying the assessments were comprehensive, Findings and Opportunities for Improvement (OFIs) were properly categorized, corrective actions adequately addressed the issues, and "A" corrective actions have been completed, and "B" corrective actions were documented in Site Tracking, Analysis, and Reporting (STAR).	Paper - Technical Information Assessed

Results: The 235-F BIO/TSR Implementation and Risk Reduction Activities Facility Self-Assessment (FSA) was completed prior to the commencement of the Contractor Readiness Assessment (CRA). As a result of the FSA, contractor line management identified fifty-three (53) findings and forty-five (45) Opportunities for Improvement (OFI). Currently, there is still one (1) pre-start (Category A) corrective action that remains open (2015-CTS-002375). The remaining open pre-start corrective action is associated with the completion of the WO13798 for installation of the 235-F Breathing Air System. The remaining post-start corrective actions and OFIs are being tracked in STAR.

The 235-F Deactivation BIO/TSR Implementation and Risk Reduction Activities Readiness Assessment Final Report, Revision 0 was issued from the CRA team lead to contractor line management on April 23, 2015. The CRA resulted in the identification of fifty-seven (57) findings that included forty-three (43) pre-start (Category A) corrective actions and thirty-five (35) post-start (Category B) corrective actions. In addition to the findings identified by the CRA team, a total of fifty-three (53) OFIs were identified. The CRA team completed the closure verification of all the pre-start (Category A) corrective actions with the exception of installation of the 235-F Breathing Air System. The corrective actions related to the 235-F Breathing Air System are being tracked to completion via STAR item 2015-CTS-002375. It is worth noting that the CRA identified a number of the FSA pre-start corrective actions that were not effective in addressing the finding(s) and some FSA issues were not correctly assigned as finding(s) versus OFIs. The incorrect assignment of the identified as OFIs has since been corrected.

The DOE-SR line organization (Assistant Manager for Nuclear Material Stabilization) verified the readiness to proceed with the DOE Readiness Assessment (RA) through observations and assessment the CRA for implementation of the 235-F Deactivation BIO/TSR and startup of Risk Reduction activities (see STAR 2015-SA-002890). It was determined that 235-F Risk Reduction personnel showed the ability to safely conduct decontamination activities; however, F-Area Complex personnel did not display sufficient knowledge/ability to successfully implement 235-F Deactivation BIO/TSR. As a result, the DOE RA was delayed for approximately five (5) weeks to allow the contractor time to conduct additional drills, personnel interviews and facility walk-downs. The additional corrective actions taken by the contractor were documented in STAR item 2015-CTS-006540.

The DOE-SR line organization verified the completion of all pre-start (Category A) corrective actions from the CRA. Upon completion, all closure verifications were reviewed by a member of the DOE-SR line management team. All post-start (Category B) correctives actions and OFIs were reviewed to ensure none were categorized incorrectly. DOE-SR identified one finding

where the CRA categorized an issue as an OFI that should have been categorized as a post-start corrective action (see 2015-CTS-003817). The issue was where a First Line Manager had not completed the required F-Area Waste Certification Training. Closure documentation was provided and verified complete by DOE-SR.

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
6	SAT	The Management Control Plan (MCP) has been developed and approved in accordance with Manual 12Q, Procedure RA-2, Conduct of the Readiness Assessment, for use during initial operation, and it documents the operability of the equipment, adequacy of the procedures, proficiency of the operators, and any required data collection activities. The equipment and procedures will be identified in the readiness evidence files. A MCP is required since some processes and potential process pathways cannot be demonstrated prior to receiving startup authorization.	Paper - Technical Information Assessed

Results: A Building 235-F Risk Reduction Management Control Plan (SRNS-N3000-2015-00005, Revision 1, dated 3/26/2015) has been developed and approved by the 235-F Risk Reduction Project Director in accordance with Manual 12Q, Procedure RA-2. The MCP details contractor management's expectations to be met prior to hot operations including the control methods to be utilized in ensuring safe and effective operation of the 235-F Risk Reduction activities with an emphasis on disciplined operations, operator knowledge and performance, and management oversight.

The MCP identifies those prerequisites required to be completed prior to hot operations and the establishment of Senior Supervisory Watch (SSW) coverage for 235-F Risk Reduction activities. The MCP identifies additional prerequisites to be completed prior to releasing specific 235-F Risk Reduction critical activities (i.e., cell window cleaning removal and cleaning, glove cartridge installation, and manipulator removal and installation) to unrestricted hot operations.

Management oversight for 235-F Risk Reduction activities will be supplemented by SSW coverage. There are three (3) individuals who have been designated as qualified to perform SSW coverage for 235-F Risk Reduction activities. SSW coverage will be evaluating safety, radiological worker practices, operator performance, disciplined operations, procedure viability and compliance, equipment operability, personnel knowledge, and response to abnormal conditions. STO-FAREA-2015-01, Revision 0 (Standing Order Senior Supervisory Watch [235-F Risk Reduction Project]) outlines the roles and responsibilities for the SSW when directed by the 235-F Risk Reduction Project Director. The SSW oversight will be in accordance with Manual 2S, Procedure 5.1 and observation results will be documented as Management Field Observations (MFO) in STAR. The MFO results from the SSW in conjunction with management direct observations will be used by the 235-F Risk Reduction Project Director before the critical activities will be released for hot operations.

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
7	SAT	Startup testing has been completed in accordance with Manual 5E, Startup Test, and all pre-start issues have been resolved and turned over to Operations.	Paper - Technical Information Assessed

Results: There was no start-up testing required during this phase of the 235-F Risk Reduction activities.

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
8	SAT	Verify through reasonable sampling that 235-F related nonconforming items (NCRs) in the Site Tracking, Analysis, and Reporting (STAR) database are being properly identified, processed, and closed out.	Paper - Technical Information Assessed

Results: A review of open Nonconformance Reports (NCR) related to 235-F Risk Reduction Activities was performed. There was only one (1) open NCR that was determined to have an impact on 235-F Risk Reduction Activities at the time of the DOE RA. The NCR (2015-NCR-30-0016) was due to a discrepant condition found during the receipt inspection of spare parts for the nitrogen regulator in 292-2F Sand Filter Fan House Support. SRNS Receipt Inspection (Inspection Report 2015-16-RIR-0000194057-000179793) rejected the items based on the spare parts not matching the description in the Purchase Order (0000194057). The nitrogen regulators were received with 7/8 in. MNPT connections and the Purchase Order required a 1 in. MNPT connection. The nitrogen regulators were dispositioned "Use-As-Is" after it was confirmed from the vendor that the 7/8 in. MNPT connection and not 1 in. MNPT connection was correct. This disposition was reviewed and approved by the Cognizant Technical Function, Cognizant Quality Function, and Responsible Management and corrective actions are being tracked to completion.

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
9	SAT	Verify sufficient staffing and resources are allocated to accomplish Risk Reduction.	Plant - Facility Systems Assessed

Results: A review of sufficient staffing levels and resources was performed to ensure the accomplishment of 235-F Risk Reduction Activities. The CRA identified an OFI (STAR 2015-SA-002126) for the need to evaluate additional staffing support for technician and radiation protection inspector positions. Further evaluation (STAR 2015-CTS-003968) was performed by 235-F Risk Reduction Activities management and determined that staffing was adequate. The 235-F Risk Reduction Project Director will continue to regularly monitor staffing levels especially those related to the 235-F Risk Reduction critical activities (i.e., cell window cleaning removal and cleaning, glove cartridge installation, and manipulator removal and installation). The DOE RA team members observed these critical activities through walk-downs and facility mockups and determined the adequacy of staffing levels for those critical activities.

However, there was a finding from the DOE RA team associated with minimum shift crew composition consistency with the Limiting Condition for Operation requirements for monitoring conditions in the facility in Functional Area 06 Safety Documentation (STAR 2015-SA-002959).

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS
None

Assessment Summary

Assessment No. **2015-SA-002958**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION			
2015-SA-002958 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015 **Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-04 (Training)			**Program Doc No:**
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)	
Assessor/Team Members: 1 Albertson, John (B9930) 90 Hrs (80 Fld Hrs) (Submitted: 7/10/2015) 2 Casey, Patrick (B9280) 1 Hrs		**Functional Area:** 04 Training And Qualification	

Personnel Contacted:	Documents Reviewed:
None	1 ALET235F, 235-F SYSTEM ENGINEER QUALIFICATION 2 CFHFASOM, F-AREA COMPLEX SHIFT OPERATIONS MANAGER QUALIFICATION 3 CFACOPSR, F-AREA COMPLEX OPERATOR QUALIFICATION 4 C235FLMQ, 235-F FIRST LINE MANAGER QUALIFICATION 5 LP35RRSP, 235F RISK REDUCTION SUPPORT PERSONNEL TRAINING SUMMARY 6 C235RR00, 235-F RISK REDUCTION TECHNICIAN TRAINING SUMMARY 7 PROGRISK, Rev 4, 235-F Building Risk Reduction Project Training Plan 8 1100 Breathing Air Compressor Operations Task Analysis 9 Handling Waste Task Analysis 10 235F Glove, Sphincter, and Clear Tub Installation and Replacement Task Analysis 11 Manipulator Operations Task Analysis 12 Waste Handling and Bagout Task Analysis 13 F-Area Complex Operations Task List 14 235F Risk reduction Task List 15 F-Area Complex Operations Task to training matrix 16 235F Risk reduction Task to training matrix 17 Individual Training Records for two F-Area Complex SOMs 18 Individual Training Records for five F-Area Complex Operators 19 SRS Manual 4B 20 DOE O 462.2, PERSONNEL SELECTION, TRAINING, QUALIFICATION, CERTIFICATION REQUIREMENTS AND FOR DOE NUCLEAR FACILITIES

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The RA team observed the following evolutions including the pre-job and post-job briefings:
- Waste Shipment of a Simulated TRU Container from the 235F, Room 106 to the Transport
- Glove Change Out in the 703-15F Mockup
- Manipulator Change Out in the 703-15F Mockup with anomalies
- Waste Bag Out in the 703-15F Mockup with anomalies
- Calibration and Functional Testing of the PuFF Low Differential Pressure Switch and Alarm
- Loss of the E-5 Fan 2S Drill
- Puncture Wound Response 2S Drill in 703-15F Mockup

Three Shift Operations Managers, a 235F First Line Manager (FLM), two operators, two E&I technicians, a Risk Reduction FLM, two Risk Reduction Technicians, the Risk Reduction Field Operations Manager, and three 235F Engineers were interviewed. The interviews of Radiological Personnel are addressed in FA-11 assessment.

This Functional Area Assessment identified two (2) POST-START findings and three (3) OFIs.

Noteworthy Practices:
The Risk reduction team is proficient in working with TRU materials. The team also demonstrated a high level of attentiveness for the industrial and radiological hazard associated with the risk reduction activities.

DOE-SR Assessment Information

Contractor Notification Sent By: Sent Dt:	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**			
		Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	UNSAT	Verify the F-Area personnel completed the training associated with 235-F Risk Reduction and Deactivation BIO/TSR and were added to the qualification for Operations, Engineering and Radiological Protection Inspectors. Review the Training Program Plan and Training Summary Matrix for Risk Reduction and verify that training associated with 235-F Risk Reduction and Deactivation BIO/TSR has been completed.	Paper - Technical Information Assessed

Results: The assessor performed a review of the following "draft" qualification cards/standards and training summaries:

ALET235F, 235-F SYSTEM ENGINEER QUALIFICATION
CFHFASOM, F-AREA COMPLEX SHIFT OPERATIONS MANAGER QUALIFICATION
CFACOPSR, F-AREA COMPLEX OPERATOR QUALIFICATION
C235FLMQ, 235-F FIRST LINE MANAGER QUALIFICATION
LP35RRSP, 235F RISK REDUCTION SUPPORT PERSONNEL TRAINING SUMMARY
C235RR00, 235-F RISK REDUCTION TECHNICAN TRAINING SUMMARY

The training required by PROGRISK Rev 4, 235-F Building Risk Reduction Project Training Plan has been met. A review of the TRAIN records documenting completion of LP35RRSP, 235F RISK REDUCTION SUPPORT PERSONNEL TRAINING SUMMARY show that all positions identified in the 235-F Building Risk Reduction Project Training Plan have received the training specified by the plan.

A comparison of training records to the Safety Basis Implementation Plan (SBIP) Attachment 5 training requirements was performed and verified all identified training as complete.

Re-qualification and Deactivation BIO/TSR Examination reviews were conducted for two Shift Operations Manager and five operators. The Deactivation BIO/TSR examination consisted of only one version that was given to all Operations personnel over a two-week period. The exam was acceptable in evaluating operator's knowledge level but had no application level questioning in the exam. There was no indication that the Shift Operations Managers (SOMs) were tested in their roles to apply the new Authorization Basis documents. The examination given to the SOM was the same version given to operators. In addition, the training conducted was not objective based, so therefore examination questions were not based on learning objectives, which is contrary to accepted systematic approach to training practices. DOE O 426.2 states "Examinations must contain a representative sampling of the knowledge and skills identified in and derived from the learning objectives..."

An OFI linked to LOI 7 suggesting enhancements in the Shift Operations Manager training addresses the examination weaknesses for the SOMs.

The failure to identify two operator tasks (LOI 2), the lack of objective-based instruction, and the lack of examination items

based on learning objectives indicates a less than adequate approach to the design of the training associated with a significant safety basis change in a high hazard, high risk facility for an operation that is expected to have a duration of greater than five years. The graded systematic approach to training is less than adequate and is in contradiction to the requirements of DOE O 426.2 and the guidance provided by the SRS Manual 4B. (Post-Start Finding)

This LOI was not met.

Finding 1	(POST-START) The F-Area Complex Facility failed to implement an adequate graded systematic approach to training for the 235F Deactivation BIO/TSR implementation.	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: DOE O 426.2 and the guidance provided by SRS Manual 4B	

No OFIs Identified

No.	Grade	Description	Topic
2	UNSAT	Verify Job/Tasks were analyzed for the Risk Reduction activities and ensure implementation into the training program.	Paper - Technical Information Assessed

Results: The assessor performed a review of the Task Analysis documents for the Breathing Air Compressor, Handling Waste, Glove Replacement, Manipulator Operations, and Waste Handling and Bagout. The risk reduction activity analysis indicates that the guidance provided in SRS 4B Manual, Procedure 3.0, ANALYSIS, DESIGN AND DEVELOPMENT OF TRAINING was followed. A comprehensive comparison of the Risk Reduction procedures to the task analysis as well as observations of these activities indicates that the task analysis was sufficient and that appropriate training was developed from this analysis for Risk Reduction activities. The task to training matrix for Risk reduction was reviewed and determined to be adequate. Various training setting were utilized (i.e., presentation, OJT, JPM, drills, and evaluations) to implement the training. Evaluation of the Risk Reductions personnel's knowledge by interviews and observations of evolutions indicates a high level of understanding and proficiency in the Risk Reduction activities.

A review of the F-Complex Operations task list indicated that the list has not been updated since 2013. The F-Area Complex Operations Task-to-Training Matrix provided to the assessor by the contractor training organization was less than adequate. A review of the F-Complex Operations task list as compared to the new equipment and operations introduced with the Deactivation BIO and TSR identified a failure of the facility to identify the two operator tasks: 1) performing the Functional Testing of the PuFF Low Differential Pressure Alarm (new equipment with SR) and 2) operating of the Remote Monitoring equipment (new safety function with SR). These two new tasks are essential to safe operation of the facility. Observations of the use of the remote monitoring by the operations staff and performance of the PuFF Low Differential Pressure Alarm Function Test indicates sufficient knowledge and understanding by facility personnel with the procedure, surveillance, and equipment. Therefore, this deficiency is categorized as Post Start. (Finding: Post Start)

The LOI was not met.

Finding 1	(POST-START) A review of the F-Complex Operations task list as compared to the new equipment and operations introduced with the Deactivation BIO and TSR identified a failure of the facility to identify two operator tasks: 1) performing the Functional Testing of the PuFF Low Differential Pressure Alarm (new equipment with SR) and 2) operating of the Remote Monitoring equipment (new safety function with SR).	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: SRS 4B Manual, Procedure 3.0, ANALYSIS, DESIGN AND DEVELOPMENT OF TRAINING	
OFI 1	F-Area Complex needs a revised Task List and Task-to-Training Matrix.	Contact: Kohler, Thomas (B9544)

No.	Grade	Description	Topic
3	SAT	Personnel required for the startup/restart performance have completed training on the latest revision of procedures required for activity performance.	Paper - Technical Information Assessed

Results: The assessor performed a review of the qualification records of F-Area Complex Operations and Risk Reduction personnel. The review included the reviews of qualification standards, training summaries, training materials, examinations, required reading, and observation of the procedure performance in the field and mockup facility. The assessor confirmed through interviews and schedules that the F-Complex Facility Manager and 235F Project Director took additional time to implement improvement initiatives following the contractor RA. Each shift conducted 2S drills. Level of knowledge discussions were conducted with F Area operators, SOMs and the 235-F FLM. The 235-F Risk Remediation Team continued to perform mock-up activities including manipulator removal and installation, glove replacement, waste removal, tool usage, drum shipment, window replacement, drills and contamination anomalies were introduced during most of the mock-up evolutions. The conduct of this "soak-time" was evident in the risk reduction demonstrations, drills, and interviews.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Verify personnel are proficient using equipment/procedures, utilize conduct of operations principles, demonstrate sound radiological protection techniques, and understand how to correctly respond to upset conditions.	Paper - Technical Information Assessed

Results: The RA team observed the following evolutions including the pre-job and post-job briefings:

- Waste Shipment of a Simulated TRU Container from the 235F, Room 106 to the Transport
- Glove Change Out in the 703-15F Mockup
- Manipulator Change Out in the 703-15F Mockup with anomalies
- Waste Bag Out in the 703-15F Mockup with anomalies
- Calibration and Functional Testing of the PuFF Low Differential Pressure Switch and Alarm
- Loss of the E-5 Fan 2S Drill
- Puncture Wound Response 2S Drill in 703-15F Mockup

The overall assessment of this LOI is that the Risk Reduction team, radiological control personnel, and F-Area Complex operators demonstrated satisfactory knowledge and proficiency in the use of the procedures, PPE, and equipment. During the observed exercises, anomalies were interjected and the response of personnel was satisfactory. Interviews with the 235F First Line Manager (FLM), F-Area Complex operators, E&I technicians, the Risk Reduction FLM, Risk Reduction Technicians, and the Risk Reduction Field Operations Manager identified no significant deficiencies in knowledge and a high degree of concern for the safe operations of the facility and a healthy awareness for the industrial and radiological hazards associated with the Risk reduction activities.

This LOI was met.

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No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	SAT	Verify required personnel are qualified to meet the TSR minimum staffing requirements for 235-F Deactivation when work is being performed and when the facility is not occupied.	Paper - Technical Information Assessed

Results: The Building 235-F minimum shift crew composition staffing per U-TSR-F-00005, Revision 1, is one SOM, 1 Operator, and 1 RCI. F-Area Complex Operations and Radiological Controls Qualification Status Matrices generated from the AQM on June 3, 2015, indicated that shift crews are staffed with sufficient numbers of qualified personnel as outlined below:

1. Six qualified SOM
2. Nineteen qualified Operators
3. Twenty-two qualified Radiological Control Inspectors

Qualified Staffing is adequate to meet the TSR Minimum Staffing requirements.

A spot check of individual qualification records for five operators and two SOMs was performed and results were documented in LOI 1.

The LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
6	SAT	Verify qualification for minimum staffing requirements for Risk Reduction activities in cells 6 through 9 which include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.	Paper - Technical Information Assessed

Results: The assessor reviewed the qualification matrix for the Risk Reduction staff with the Risk Reduction First Line Manager (FLM) to confirm that the FLM was trained on TRAIN access and had the necessary log in privileges to determine the task qualifications of his assigned technicians. The qualification matrix showed all technicians were qualified on all risk reduction tasks (i.e., glove cartridge installation, manipulator replacement, cell window removal, and outer cell window cleaning.) with the exception of breathing air compressor operations and fork lift operations. The staffing and qualifications are adequate to start Risk Reduction activities in 235F.

This LOI was met.

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No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
7	SAT	Interview two (2) Maintenance, two (2) Radiological Protection Department (RPD), two (2) SOMs, one (1) Risk Reduction FLM, two (2) F-Area Operations FLMs, two (2) Risk Reduction Technicians, two (2) Engineers, to verify level of knowledge relative to the BIO/TSR training.	People - Level of Knowledge Confirmed

Results: Three Shift Operations Managers, a 235F First Line Manager (FLM), two operators, two E&I technicians, a Risk Reduction FLM, two Risk Reduction Technicians, the Risk Reduction Field Operations Manager, and three 235F Engineers were interviewed. The interviews of Radiological Personnel are captured by FA-11, Radiological Controls assessors. Conducts of Operations knowledge deficiencies are included in the FA-22, Conduct of Operations assessment.

During interviews the Risk Reduction team, the F-Complex Operators, and E&I technicians demonstrated a strong understanding of the applicable facility, procedure, and Authorization Basis changes related to the 235F Deactivation BIO/TSR implementation.

Interviews with the 235F engineers determined that the engineers possess adequate knowledge of the 235F Deactivation BIO/TSR. The engineers were comfortable maneuvering within the BIO/TSR. The system/cog engineers demonstrated exceptional knowledge and understanding of the revised Authorization Basis impact on their systems. Two engineers were qualified to perform USQ screens, and one engineer was in training.
During interviews with the Shift Operations Managers (SOMs), overall understanding was acceptable but areas for improvement were identified. SOMs demonstrated some difficulty in the application of the TSRs to scenario-based or situational exercises. Continuing training in the application of the TSR would be beneficial. The application of the front sections of the TSR (i.e., definition, 3.0.x/4.0.x) was acceptable but could be improved. SOMs had conflicting perspectives on when Operations management and engineering management concurrence was required when entering and exiting an LCO condition (i.e., planned vs. off-normal conditions). (OFI)

This LOI was met.

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No Findings Identified

OFI 1	F-Area Complex Shift Operation Managers would benefit from additional as well as continuing training on the TSRs to include scenarios or situational exercises and reviews on the application of the front sections of the TSRs (i.e., DEFINITIONS, 3.0.x and 4.0.x application LCOs).	Contact: Kohler, Thomas (B9544)
OFI 2	F-Area Complex Facility Management should communicate and institutionalize expectations on when Operations and Engineering Management concurrence is required to enter and exit TSR conditions (i.e., routine vs. off-normal entries).	Contact: Kohler, Thomas (B9544)

APPROVALS / REVIEWS	**DISTRIBUTION**
None	None

ATTACHMENTS
None

Assessment Summary

Assessment No. **2015-SA-002959**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION				
2015-SA-002959 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015	**Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-06 (Safety Documentation)			**Program Doc No:**	
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015	
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)		
Assessor/Team Members: 1 Woodworth, Marc (S8347) 80 Hrs (5 Fld Hrs) (Submitted: 7/10/2015) 2 Casey, Patrick (B9280) 5 Hrs		**Functional Area:** 06 Safety Documentation		

Personnel Contacted:

None

Documents Reviewed:

1	Bldg 235-F DOE Safety Evaluation Report for BIO (U-BIO-F-00003 rev1) and TSR (U-TSR-F-00005 rev1)
2	U-BIO-F-00003 revision 1
3	U-TSR-F-00005 revision 1
4	S-CLC-F-00493 revision 3
5	U-TSR-F-00002 revision 3
6	U-BIO-F-00002 revision 3
7	SRNL-L4120-2015-00010
8	SRNL-L4120-2013-00025
9	SRNL-STI-2014-00440 revision 0
10	Remaining Elements to Complete Advanced Characterization of Cells 6-9 and Cells 3-5
11	235-F-1000 revision 1
12	SRNS-H8100-2013-00059 revision 1
13	USQ-V35-2011-00040
14	USQ-V35-2011-00059
15	USQ-V35-2013-00134
16	USQ-V35-2011-00064
17	USQ-V35-2014-00063
18	USQ-V35-2014-00075
19	USQ-V35-2015-00017
20	SRNS-E2300-2015-00001
21	E7 2.05 revision 23
22	F RM-235-F-208 revision 28
23	SRNS-N3000-2015-00017 revision 1
24	WSRC-TR-2003-00573 revision 6
25	2015-SA-002130
26	235-F Deactivation LDD Records 6_8_15
27	M-CGD-F-00475 revision 0
28	Re: Safety Significant Flex Hose Proof Test vs. Design Pressure Basis

29	SRNL-HPL-2015-5244 record No. 18016
30	SRNL-HPL-2015-5248 record No. 18021
31	SRNL-HPL-2015-5249 record No. 18022
32	F-Complex and HMD In-Service Leak Test Data Sheet for Work Package 1402633 Bank 5A Nitrogen Manifold(unsigned by QA)
33	01402633 - 01 REPLACE NITROGEN MANIFOLD 5A, 292-2F unsigned
34	01402632 - 01 REPLACE NITROGEN MANIFOLD 5B, 292-2F unsigned
35	S-EHA-F-00004 revision 6
36	L2-1-EPIP-001 revision 18
37	V-PMP-F-00083 revision 1
38	J-CLC-F-00249 revision 1
39	J-CLC-F-00252 revision 2
40	J-CLC-F-00311 revision 1
41	J-CLC-F-00448 revision 0
42	J-CLC-F-00449 revision 0
43	J-CLC-F-00450 revision 0
44	M-CLC-F-01280 revision 2
45	S-CLC-E-00156 revision 14
46	235-F-WH-030 revision 0
47	235-F-03 revision 11
48	235-F-014 revision 7
49	235-F-015 revision 12
50	235-F-3412 revision 16
51	235-F-3416 revision 37
52	235-F-7000 revision 27
53	235-F-7025 revision 6
54	235-F-7030 revision 9
55	235-F-7032 revision 1
56	235-F-7320 revision 13
57	235-F-PS-009 revision 15

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
A review was conducted on the overall implementation of building 235-F Deactivation Safety Basis requirements. One finding was identified with the lack of a documented implementation strategy for meeting remote monitoring requirements. No OFIs were identified.

Noteworthy Practices:
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DOE-SR Assessment Information

Contractor Notification **Sent By:** **Sent Dt:**	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**	Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	UNSAT	The facility systems and procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis and assumptions included in the safety documentation.	Paper - Technical Information Assessed

		A formal program is defined and implemented to control facility modifications. Authorized modifications within the scope of the Readiness Review have been completed and fully closed, or evaluated and determined not to affect the ability to safely start nuclear operations.	

Results: A walkdown of the 235-F building was conducted with the 235-F First Line Manager and an operations lead. Instrumentation for the E5 fans, nitrogen backup support system, the 4LO interlock, the PuFF low DP alarm, the E1 low vacuum alarm, the roof tunnel low vacuum alarm were consistent with the BIO and TSR discussions.

During the walkdown, facility personnel noted that the 1E5 fan inlet vane pressure controller automatic function was not available due to a recent loss of power event which placed the facility in LCO 3.2.4. The 1E5 fan controller was currently being operated in the manual mode with the 1E5 fan damper set to the expected position for adequate exhaust ventilation flow. Facility personnel discovered that the 1E5 controller backup battery had failed -manufacturer recommended life on the battery is ten years and the battery has been in service for 12 years. The 2E5 fan damper controller battery is also 12 years old but has not yet failed and is set to operate in automatic mode. The facility is taking deliberate actions to exit LCO 3.2.4. Three controllers have been ordered and both the 1E5 and 2E5 controllers are scheduled to be replaced. The facility is also developing a PM for managing controller battery function and replacement in accordance with the manufacturers instructions. NCRs have been written on the1E5 controller (292-2F 1E5 Fan Inlet Vane Pressure Controller, Backup Power Battery Failure, 2015-NCR-30-0026) and the 2E5 controller (292-2F 2E5 Fan Inlet Vane Pressure Controller, Backup Power Battery Life Expectancy Exceeded, 2015-NCR-30-0029).

The D3 damper has been modified to permanently block it open in accordance with the BIO section 2.4.1.4.1. The modification was not visible in the facility since it is over a ceiling tile. However, a picture of the modification was available and based on the picture, it appeared to be permanently screwed into a position with an angle iron into the damper actuating arm.

A formal program is in place to control facility modifications in accordance with the E7 manual and 1Q manual. DCP M-DCP-F-11005 was reviewed which involved modifications to the nitrogen backup support system. The FA01 assessor has reviewed the modification and determined that the turnover acceptance package and the operational acceptance checklist were not available or are not retrievable. Based on the this issue, a finding is being identified in the FA01 functional area with the failure to have the proper documentation in place to support operations acceptance of the facility modification.

J-DCP-F-13004, Bldg. 235-F PuFF Cell Low dP Alarm, was reviewed. This facility modification installed a new 235-F PuFF Cell Low dP Alarm. No issues were identified with the modification package.

The walkdown in 235-F and observation of the PuFF low dP switch calibration and alarm functional test verified that the modifications were performed in accordance with the DCP attributes and the BIO and TSR requirements.

A review of the TSR requirements was performed. A potential disconnect was identified with LCO requirements 3.3.2, 3.3.3, and 3.7.1 and the minimum shift crew composition requirements of section 5.2.2.4. TSR table 5.2.2-1 provides minimum shift crew composition requirements and further elaborates on the requirements in note 4 under the table which provides the following: "When personnel are present in Building 235-F, one SOM or operator shall be continuously stationed in the F-Area control room to monitor the E1 low vacuum and PuFF enclosure low differential pressure alarms if remote monitoring is being used." However, LCO 3.3.2 for the E1 low vacuum alarm and LCO 3.3.3 for the PuFF Enclosure Low Differential Pressure Alarm require these alarms to be operable at all times. Operability for these switches/alarms cannot be established at all times unless these alarms are being monitored. Furthermore, LCO 3.7.1 Shift Operating Base Alarm Monitoring requires that remote monitoring be established when either the E1 Low vacuum alarm or PuFF Enclosure Low Differential Pressure Alarm is operable. After further review, it was determined that the bases section for TSR LCO 3.7.1 discusses the appropriate ties between the remote monitoring requirements and the functionality of the E1 low vacuum alarm and the PuFF low dP alarm. There is no actual disconnect between the LCO requirements as originally thought.

From further review of TSR LCO 3.7.1 requirements and the implementing procedures, an issue has been identified. LCO 3.7.1 specifically provides for remote monitoring of the 235-F building PuFF Low dP alarm and E1 Low Vacuum alarm by a SOM or operator when personnel are in the 235-F facility. A review of procedures and the safety basis did not identify the methodology in place for controlling access to the building to ensure that the SOM or operator were fully aware of when personnel had entered and exited the facility to meet the LCO 3.7.1 requirements. When this issue was discussed with the facility operations leads and management, it was determined that the operations organization is planning on implementing the LCO 3.7.1 requirements by having the remote monitoring station manned unless the building is secured from personnel entering. Operations selected this strategy based on the potential disconnects or communications issues that could occur between the remote monitoring station and the people engaged in 235-F activities. Also, the selected strategy negates the need for reliance on a personnel tracking system for people entering and exiting 235-F. A review of procedure 235-F-023 revision 3, Building 235-F Ventilation Alarm Monitoring and procedure 235-F-3354 revision 2 Building 235-F Entry Control was performed to determine if they appropriately implement the operations implementation strategy (full time remote monitoring regardless of personnel status in 235-F). Based on the review, it was determined that procedures do not appropriately implement the planned strategy. 235-F-023 section two (General Information) has the following statement which counters the planned implementation strategy: "When Building 235-F is occupied and remote monitoring is being performed for E1 Low Vacuum and PuFF Enclosure Low dP alarms, one person trained in response to both alarms shall be continuously stationed in the Building 772-1F Control Room. [235-F AC 5.2.2.4]." In addition, the 235-F 3354 does not link back to the TSR requirement. A finding has been identified with the failure of the procedures to implement remote monitoring requirements.

This criterion was not met.

Finding 1	(PRE-START) In 235-F, operating procedures 235-F-023 and 235-F 3354 failed to implement remote monitoring requirements.	**CAP Required** Contact: Kohler, Thomas (B9544)

	Spec. Reqt.: LCO 3.7.1: Remote monitoring capability of the E1 Low Vacuum and PuFF Enclosure Low Differential Pressure Alarms shall be OPERABLE. The LCO applies when personnel are in building 235-F.	

No OFIs Identified

No.	Grade	Description	Topic
2	SAT	If the startup/restart required changes to the Safety Basis verify that personnel have been trained to the new Safety Basis requirements and controls.	Paper - Technical Information Assessed

Results: Changes were required to the Basis For Interim Operation (BIO) and the Technical Safety Requirements (TSRs). Personnel have been trained to the new Safety Basis requirements and Controls. To satisfy this LOI, the assessor participated in formal interviews with the FA-22 and FA-04 assessors. Those formal interviews were held with a 235-F facility first line manager (FLM), two 772-1F control room operators, and one 772-1F Shift Operations Manager. In addition, informal interviews were conducted with the F-Area Operations Technical Support Manager, the 235-F FLM, the 235-F ventilation system engineer, the F-Area operations manager, the FCC engineering manager, two F-Area E&I Mechanics, and the F-Area E&I lead. In general, all demonstrated knowledge of the safety basis changes commensurate with their jobs. During the formal interview process, the SOM displayed some difficulties in migrating through the TSR when answering questions to hypothetical scenarios. The FA-04 assessor is documenting specific issues with the overall training adequacy. In addition, the FA-04 assessor is also documenting a review of the personnel training records.

This criterion was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	SAT	The startup/restart required USQD process/USQDs to support facility operation. This is required for physical as well as procedural changes.	Paper - Technical Information Assessed

Results: The startup did require USQDs to support operation. A review of the USQ process employed by 235-F was conducted.

235-F facility utilizes admin-info procedure 235-F-1000 Simple Fix List "to provide a pre-authorized limited scope of work involving maintenance activities which can be performed without additional USQ review." A review of the procedure did not identify any potential issues with the level of activities that can be undertaken without the performance of a USQ pre-screen.

SRNS-H8100-2013-00059 revision 0 Engineering "Pre-Screen" Review of Work Packages is a desktop instruction utilized by engineering. The engineering pre-screen "involves reviewing a work package to determine if facility changes (permanent or temporary) occur during the performance of the work package. If facility changes can occur during the performance of the work, the work package will be routed to system engineering for performance of the USQ." No issues were identified from the review of the desktop instruction.

Engineering maintains a list of qualified personnel for performing USQ screenings and USQ evaluations. An example of such a list is documented in SRNS-E2300-2015-00001 Updated Listing of F-Area Unreviewed Safety Question (USQ) Personnel - March 2015. The listing segregates those reviewers that are qualified to perform screenings versus those reviewers qualified to perform evaluations. In addition, the reviewers are segregated by each facility in F-Area. As of March 2015, six engineers were qualified to perform USQ screenings for 235-F and two engineers were qualified to perform USQ evaluations for 235-F.

Seven USQ screenings were reviewed. The screenings involved different aspects of the modifications performed on the nitrogen backup support system and the PuFF Enclosure Low dP Switch and Alarm. None of the USQ screenings led to an evaluation. As a whole, the screening out (for not performing evaluations) of facility modifications is counter to DOE-SR (SR) expectations and the practice of screening out modifications is not commensurate with DOE guide DOE G 424.1-1B Admin Chg 2, Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements. SR has directed the contractor to change USQ procedure 1.05 to require USQ evaluations on modifications. The contractor is meeting the requirements currently outlined in USQ procedure 1.05. No finding or OFIs have been identified.

This criterion is met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Verify that controls to address technical uncertainties have been identified in a plan for those uncertainties, and are implemented, in accordance with the plan.	Paper - Technical Information Assessed

Results: A variety of technical uncertainties have been considered in the development of the deactivation BIO and TSR. While a technical review has not been performed of specific calculations, it was verified that a number of uncertainty calculations have been developed to support the TSR LCO requirements. Uncertainty calculation J-CLC-F-00249 revision 1 was performed for the roof tunnel vacuum gauge which is used to measure roof tunnel vacuum pressure and is relied upon for meeting LCO 3.3.1. Uncertainty calculation J-CLC-F-00252 revision 2 was performed for the ventilation interlock 4LO vacuum pressure switches which are also relied upon for meeting LCO 3.3.1. Uncertainty calculation J-CLC-F-00449 revision 0 was performed for the PuFF Low DP Alarm which is relied upon for meeting LCO 3.3.3. Uncertainty calculation J-CLC-F-00311 was performed for the E5 exhaust fan pressure switches PSL 2981-A and PSL 2981-B which are relied upon for meeting LCO 3.2.4 and provide the automatic start capability of the E5 fans. J-CLC-F-00450 was performed for the 292-2F High-Side nitrogen manifold pressure

gauges PG2995 and PG2996 which are relied upon for meeting LCO 3.2.4. J-CLC-F-00448 was performed for the E1 low vacuum alarm which is relied upon for meeting LCO 3.3.2.

The SRNS RA identified that technical uncertainties were characterized by the SRNS project team for the proposed deactivation activities and those uncertainties are captured in V-PMP-F-00083 Deactivation Project Plan Plutonium Fuel Form Facility Building 235-F Metallurgical Building as project risks. A review of the PMP shows that Appendix J identified sixteen project risks, all of which could be considered as technical uncertainties. Twelve of those project risks are designated as being accepted. Out of the 4 project risks that are designated as requiring a mitigation strategy, PUFF-010 appears to be the one with the highest level of risk. PUFF-010 addresses the characterization of the facility MAR which is stated as having a significant margin of error based on the multiple assays performed over the years. This significant margin of error and the enhanced characterization process provide the basis for the risk being mitigated from high to low.

A proposal for the enhanced characterization activity was provided from SRNL to the Risk Reduction Team on June 3, 2015 and is documented in SRNL-L4120-2015-00010 Technical Task Plan for 2015-2016 Enhanced Characterization of 235-F Cells via Holdup Measurements. The BIO obviously does not contain any information regarding the proposal since the proposal is dated well after the BIO was approved. In addition, the proposal has not resulted in any actual procedures to control the work involved in the characterization.

The NDA activities performed thus far on the PuFF cells and those still to be performed on PuFF cells were discussed with the risk reduction engineering manager and a nuclear measurements staffer who performs the NDA measurements. Characterization to an extent on all cells has been performed. Original characterization studies performed the basis for the Material at Risk numbers in the BIO. Measurement uncertainties as well as additional 75% margins for error were accounted for in the original measurement. The risk reduction team is going on the basis that those uncertainties bound any actual material existing within the cells. Major enhanced characterization work has been performed under cells one through five using instruments (HPGe and LaBr) with more resolution than the instruments (NaI) used to perform the original measurements. Almost the entire cells have been mapped and distribution of the radionuclides have been identified. The latest characterization numbers in cells one through five show a reduction from the original numbers. The most recent measurements for cells 6 thru 9 with an HPGe detector show below detectable on cells 8 and 9; 2.2 g in cell 6 and 0.25 g in cell 7. Prior to initiating intrusive work within cells 6 thru 9, the facility is planning on draining the windows of water shielding and removing most of the glass windows in front of the cells leaving the last panes of glass intact. Again, prior to performing intrusive work in the cells, additional NDA measurements will be performed through the windows. The additional NDA work will be performed using an imaging detector (GeGI) that is supposed render high resolution measurements without having to resort to many measurements to establish MAR distribution. Those additional measurements will be used to validate the currently assumed MAR distribution of 80% on the floor and 20% in HEPAs or on walls or alternatively establish a more refined distribution. It appears the work being planned will further mitigate the technical uncertainties originally identified in the Project Management Plan. Work packages to perform the NDA are currently being developed and were not available for review. The current schedule for completing the cells 6 thru 9 NDA measurements is September (begin August 15, 2015 and assumes 1 week of NDA measurements per cell). Issuance of the final report for enhanced characterization of cells 6 thru 9 is expected about 2 months after completion of the measurements.

Finally, technical uncertainties exist within the TSR. Several of the LCOs (3.3.1, 3.3.2, 3.3.3) allow alternate methods of monitoring conditions when the primary safety-related switches and gauges are unavailable. When queried during an interview about the pedigree of alternative alarms, engineering responded that alternative readings are not required to be performed with instruments having safety-related equipment or have uncertainty calculations performed on them since there is a low risk of having the event. In all of these instances, 30 days is allowed for continued monitoring of conditions and operation of the facility before the primary safety-related instrumentation is restored to an operable state. Other bases include the fact that normal operating conditions are very far from the setpoint. F-Area operations has issued Standing Order STO-FAREA-2015-03 revision 0 235-F Alternate Readings Guidance which provides guidance for alternate readings for LCOs 3.3.1, LCO 3.3.2, and LCO 3.3.3 including the establishment of the specific alternate gauges. All gauges have to be calibrated and maintained within the calibration frequency - the calibration data are maintained within the In-Process Instrumentation (IPI) database. The instruments are not functionally classified to SS nor do they have setpoint uncertainty calculations associated with them.

A review of the TSR methodology manual WSRC-TR-2003-00573 revision 6 was performed. Section 5.3.2.2.4 has the following requirement when establishing actions for equipment that becomes inoperable: "There are basically two types of required actions, either corrective or compensatory. The corrective required action restores the inoperable equipment within the time allowed or places the facility in a Mode where the LCO does not apply and the control is not required. The compensatory required action designates another piece of equipment or control (e.g., alternate equipment or monitoring activity) that can temporarily provide the safety function required by the original inoperable equipment." A review of different facility TSRs was performed including H-Canyon and HB-Line. In addition, discussions were held with NNSA staff at Tritium. Based on the review of other facility TSRs and discussion with the NNSA staff, it was determined that a wide spectrum of approaches is applied to monitoring conditions with alternate monitoring. In some, but not all cases, operations is restricted when alternate monitoring is used. In some, but not all cases, the administrative control section of a facility TSR contains an entire administrative control section on alternate monitoring (e.g., H-Canyon). In the case of H-Canyon, the only requirement for using alternate monitoring is the use of a calibrated instrument. Based on this review, it has been determined that 235-F is not outside the normal ways of doing business at SRS. No findings or OFIs have been identified with this technical uncertainty.

This criterion has been met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	SAT	Verify by document review that the Linking Document Database has captured all Technical Safety Requirement (TSR) Limiting Conditions for	Paper - Technical Information Assessed

		Operations (LCO), Surveillance Requirements (SR), and Specific Administrative Controls (SAC).	

Results: A review of LLD records with associated procedures was performed. It was determined that the LDD has captured TSR LCO requirements, surveillance requirements, and specific administrative controls. Details are provided in the results below.

LDD 235-FD-01

LDD record 235-FD-001 addresses all facility controls associated with LCO 3.2.4 which requires the following: "Both 292-2F ventilation exhaust (E5) fans (F994-500-1 and F994-500-2) shall be OPERABLE. AND The nitrogen backup support system shall be OPERABLE."

Abnormal Operating Procedure (AOP) 235-F-014 revision 7 addresses actions to take when the facility suffers a loss of instrument air. The procedure includes actions to ensure that the Nitrogen Bank A and B system pressure are greater than 600 psig in accordance with the LCO 3.2.4 requirements. The procedure adequately captures the TSR requirements.

AOP 235-F-015 addresses the various facility actions taken to respond to building 235-F ventilation alarms. Section 4.1 (response to 4LO alarm) of the procedure address response to a 4LO interlock which isolates all the facility supply fans and exhaust fans E1 thru E4. A TSR control step in the section of the procedure requires an evaluation of entry into LCO 3.2.4 if either E5 exhaust fan is inoperable and an action step to restore the inoperable fan within 30 days. The procedure adequately captures the TSR requirements.

Use Every Time (UET) procedure 235-F-3412 revision 17 was reviewed. The procedure is used to restore ventilation after activation of interlocks. The procedures involves TSR control steps for both LCO 3.2.4 and LCO 3.3.1. It also has a requirement to verify at least one E5 fan is operating after the 4LO interlock has activated.

LDD 235-FD-0009

This LDD record discusses actions taken when conditions in the facility require entry into LCO 3.3.1. AOP 235-F-015 addresses the various facility actions taken to respond to building 235-F ventilation alarms. The procedure adequately captures TSR requirements.

UET procedure 235-F-3416 revision 3 is a TSR surveillance procedure for functional testing of the 235-F ventilation interlocks. The procedure is used to perform a functional test of the capability of each of the 235-F exhaust tunnel pressure switches 535PS and 535PS1 and associated 4LO interlock (TSR Surveillance requirement SR 4.3.1.3). The procedure adequately captures TSR requirements.

UET procedure 235-F-7000 Operating E5 Exhaust Fans was reviewed. The procedure is used to meet a surveillance requirement and ensures that a functional test is performed on each 292-2F ventilation exhaust (E5) fan. The test is performed to ensure that each fan is capable of starting and maintaining the proper vacuum in the Building 235-F exhaust tunnel. TSR requirements are appropriately captured.

UET procedure 235-F-7025 revision 6 the use of a manual transfer switch to switch between the two main 235-F building MCCs that are used to supply power to lighting panel EPP-1. TSR requirements for ensuring LCO entries and E5 exhaust ventilation fan status are appropriately captured.

UET procedure 235-F-7030 Operating Nitrogen Gas Backup System was reviewed. TSR requirements are appropriately captured in steps involving the valve lineups necessary for cylinder replacement and verification that bank manifold pressures are acceptable.

UET procedure 235-F-7032 revision 1 performs a functional test of Building 292-2F Nitrogen Backup Support System to meet TSR surveillance requirement 4.2.4.5. The procedure adequately captures TSR requirements.

TSR SAC 5.7.2.9.e (TRU waste container vent configuration control), requires TRU waste containers shall have an appropriate vent configuration established on the container prior to
container closure.

This criterion was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
6			

	SAT	Verify by document review that the LDD has captured any DOE Conditions of Approval.	Paper - Technical Information Assessed

Results: A review was performed of the DOE Safety Evaluation Report (SER), dated 10/30/2014) (Building 235-F DOE Safety Evaluation Report for the Basis For Interim Operations, U-BIO-F-00003, Revision 1 and Technical Safety Requirements, U-TSR-F-00005, Revision 1). The SER provided the basis for approval of the 235-F BIO revision 1 and TSR revision 1 for Deactivation of building 235-F. Section 10 of the SER explicitly states that no conditions of approval are associated with the BIO and TSR. Therefore, the LDD was not required to capture any conditions of approval.

This criterion was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
7	SAT	Verify the required safety systems surveillance tests are complete.	Plant - Facility Systems Assessed

Results: A verification was performed that the required safety systems surveillance tests are complete. SRNS-N3000-2015-00017 revision 1 Review of Surveillance Requirements Prior to Implementation of Building 235-F Deactivation - Technical Safety Requirements documents the completed surveillances. This document lists all the surveillance tests completed for the new portions of the deactivation TSR incorporated after the S&M TSRs were implemented. Surveillances which existed under the S&M TSR have been performed on an ongoing basis and were documented to be within the required surveillance frequencies.

A review of the 235-F Surveillance Test Database was performed. Since many of the new surveillances have not been implemented, the database itself is not populated with the completed surveillances discussed in SRNS-N3000-2015-00017 revision 1. The F-Area Operations Technical Support Manager was able to provide evidence of the surveillances discussed in SRNS-N3000-2015-00017 revision 1 as well as continued surveillances (monthly) performed since the document was issued.

A review was performed of surveillance procedures listed in the LDD. Based on that review, the surveillance procedures contain the appropriate TSR control steps for conducting the surveillances.

SRNS-N3000-2015-00017 revision 1 documents a successful completion of a surveillance functional test on the nitrogen backup support system on 01/26/2015. Additionally, justification is provided for not performing a functional test on the system after the manifolds are replaced. The justification states that the replacement manifolds will be functionally tested for flow checking as part of the commercial grade dedication. The installation is complete and has been placed into service. The nitrogen backup support system is not included in the S&M TSR LCO 3.2.4 requirements. Therefore, the installation did not require any surveillance test on the nitrogen backup support system as part of any entry and exiting of LCO 3.2.4 (in fact, entry and exiting of LCO 3.2.4 may not have been necessary at all under the S&M TSR). The deactivation TSR does have surveillance requirements for the nitrogen backup support system under LCO 3.2.4.

Commercial grade dedication package M-CGD-F-00475 was reviewed and discussed with the FCC engineering manager and the system engineer. The CGD states that Post Installation Testing of the manifold replacement was not needed. Engineering was questioned regarding the lack of a PMT and the justification for not performing the surveillance test of the system as a way of ensuring that the system configuration remains valid since the previous successful functional test of the system before the manifold replacement. In response to the questions, they provided additional information showing the leak testing performed on the system after the modification was performed.

In addition, there is also documented evidence that bench testing of the manifold was performed to ensure that the manifold was configured as designed. SRNL also performed leak checking on the manifolds at over twice the operating pressure. In addition, destructive test at 3 times the manifold design pressure was performed on a spare manifold. Those tests met the acceptance requirements.

Roundsheets were also reviewed. A review of ATTACHMENT 8.1 235-F/292-2F Building Surveillance Rounds item #18 shows a requirement for recording the E1 PLENUM LO VACUUM IND PRESS which is listed as a TSR control ($ sign) step and referenced back to LCO 3.3.2. Another example of this type of TSR control step in the roundsheet is item #190 which requires a recording of the float voltage on the 292-2F diesel starting battery -this is designated as TSR control ($ sign) step referenced back to LCO 3.4.1. A TSR control step ($ sign) referenced back to LCO 3.3.3 also exists for a PuFF low differential pressure condition in item #3 of the roundsheet. From a discussion with the F-Area Operations Manager, round sheet readings are taken on various parameters to monitor conditions and referenced back to the TSR LCO if it supports a TSR requirement.

This criterion was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
8	SAT	Interview two SOMs, 2 Control Room Operators and one Maintenance Technician to verify knowledge of new/revised Limiting Conditions of Operations (LCOs), Surveillance Requirements (SRs), Specific Administrative Controls (SACs) and the bases for them. Required knowledge level is commensurate with position responsibilities.	People - Level of Knowledge Confirmed

Results: An initial meeting was setup to understand the expectations of the E&I group regarding work under the new BIO (U-BIO-F-00003 revision 1) for deactivation. The meeting was setup to gain insight in how E&I does business within F-Area and help prepare this assessor to conduct interviews on the E&I mechanics' knowledge of the latest safety requirements. Instead,

two maintenance mechanics presented themselves at the initial meeting to discuss their use of procedures in the facility and how they interface with the 235-F Shift Operations Manager. During the meeting, they went over the requirements of the generic procedure used for calibrating IPI in the facility (W-794036). They also provided an example of the 48-303 calibration sheet for the 1215 PSL switch (PuFF Cell 9 Differential Pressure). They went over the general requirements for contacting the SOM and having to verify that the facility has entered the correct LCO IAW the calibration data sheet instructions. When queried, they mentioned that they did get some training on safety basis changes but they were unable to specify the elements of the training. This was turned over to the FA04 assessor. Interviews conducted by the FA04 assessor did not result in any findings or opportunities for improvement (OFI) related to lack of training on the safety basis.

A surveillance activity involving calibration and functional testing of the PuFF Low Differential Pressure switch and alarm was observed. The pre-job briefing was held by the maintenance organization involved in the calibration of the switch and the operations organization involved in functional testing of the switch and alarm. The pre-job briefing was adequate for both parts of the work involved. The E&I foreman went over the calibration activity and the operation First Line Manager for 235-F went over the functional test activity. The E&I foreman used a pre-job briefing checklist to conduct the briefing and discussed ensuring that the identification of the parts matched the paperwork, the use of performing IV and SPVs, and ensuring the tools used to perform the calibration were within their calibration frequency. The potential for a Continuous Air Monitor (CAM) alarm was discussed and the evacuation routes to take if the CAM did alarm. The SAFER methodology was used to discuss error likely conditions that could arise during the activity. The Automated Hazards Analysis (AHA) was also discussed. The operations FLM used the actual functional test procedure as the briefing tool and queried his two operators as to their responsibilities while performing the job. The Radiological Control inspector discussed the RWPs to be signed on during the job and the use of swipes to probe for contamination when line breaks are performed. After some confusion, it was determined that personnel observing the work were not required to be signed on during the RWP No issues were identified during the pre-job briefing. No issues were identified during the pre-job briefing.

The performance of the calibration and functional test were observed. The E&I mechanics understood their job requirements and were able to answer questions regarding the connection of the calibrator, air regulator, and the instruments appropriately. The calibrator was determined to be within calibration frequency based on the dates on the calibration sticker. The valves were adequately positioned to isolate the instrument and connect to the M&TE. The switch was identified to be out of calibration and had to be adjusted to complete the calibration activity. Calibration procedure W-794036, Pneumatic and Electronic IPI Calibration is a reference procedure. It was noted during performance of the procedure that step 14.D (for calibration adjustments) of section 5.1 has an error that sends the user back to the wrong step in the procedure. This was brought to the attention of the E&I foreman. The calibration adjustments were observed to be conducted in an acceptable manner. The switch setpoint adjustments were conducted appropriately and the switch was determined to be set at the appropriate alarm setpoint during the recalibration. However, to perform the adjustments in an acceptable manner, the procedure steps could not be followed as written. The calibration datasheets on form 48-303 had to be reviewed and signed off by engineering prior to the performance of functional test since the switch was initially found to be out of calibration. The functional test was performed IAW 235-F-2419 revision 0, Functional Test of PuFF Cell Low Differential Pressure Alarm. The performance of the functional test was adequate. A finding associated with the procedure compliance issue is documented in 2015-SA-002960 (Maintenance Functional Area).

An operations lead observed the performance of the functional test. When queried, he stated that the 12 month frequency for calibration and functional testing of the switch would be restarted based on completion of the activity. However, he also stated that engineering would probably be requesting a recalibration and functional testing of the switch be performed in a couple of months. The switch had been calibrated in April 2015; it was only undergoing this surveillance activity for the DOE Readiness Assessment. Since the switch was found to be out of calibration during this surveillance, it would be a good practice to increase the calibration frequency for the near term to determine if there were any additional unknown issues with the switch.

Formal interviews of the 235-F First Line Manager, two F-Area Complex (FAC) control room operators and an FAC Shift Operations Manager (SOM) were observed. Questions were developed by the FA-22, FA-04, and this assessor prior to the performance of the activity. Additional questions were also posed during the interviews based on the answers being provided by the interviewees. Overall, it was determined that the FLM, and the two control room operators were adequately knowledgeable of the new safety basis requirements. The SOM appeared to be less knowledgeable of the safety basis requirements and displayed some uncertainty in migrating through the technical safety requirements when answering questions regarding hypothetical upset scenarios. The team identified no findings based on the formal interviews. However, the team did identify an OFI with the weakness of the SOM's ability to appropriately migrate through the TSR and display full knowledge of the safety basis requirements.

This criterion was met.

No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS

Reference Document	Refers To
DOE SER	VERIFICATION

Assessment Summary

Assessment No. **2015-SA-002960**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION			
2015-SA-002960 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015 **Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-10 (Maintenance)			**Program Doc No:**
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)	
Assessor/Team Members: 1 Hancock, Roy (L0800) 40 Hrs (10 Fld Hrs) (Submitted: 7/10/2015) 3 Casey, Patrick (B9280) 2 Hrs 4 Woodworth, Marc (S8347) 4 Hrs (4 Fld Hrs)		**Functional Area:** 10 Maintenance	
Personnel Contacted: None		**Documents Reviewed:** 1 Please see Attachment 1	

Purpose/Scope

The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:

This assessment required a reviewed the Master Equipment and Spare Parts Lists to verify the needed critical spares were developed and the Component Location Identifier (CLI) numbers have been entered into Asset Suite, and are active. Also, this assessment checked to ensure the required critical spare parts are on site, or on order. A sampling of the Preventive Maintenance (PM) information was taken and reviewed to ensure the PM requirements have been identified and scheduled in accordance with Manual 1Y, Procedure 5.02, Preventive Maintenance. This assessment also ensured the M&TE required for the calibration and or maintenance of safety components have been identified, verified operational, and calibrated/certified. This assessment observed a surveillance activity involving calibration and functional testing of the PuFF Low Differential Pressure switch and alarm to verify the level of knowledge, procedure compliance and training proficiency.

The assessment identified one finding associated with a procedure compliance issue while calibrating the Puff Low Differential Pressure switch.

Noteworthy Practices:

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DOE-SR Assessment Information

Contractor Notification Sent By: Sent Dt:	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**	Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	SAT	Review the Master Equipment and Spare Parts Lists, to verify critical spares were developed or updated and the Component Location Identifier (CLI) numbers have been entered into Asset Suite and are active.	Paper - Technical Information Assessed

Results: The following Component Location Identifiers were established in Asset Suite to be "Critical Spares":

System - 292-2F Instrument Air Back Up Nitrogen System High Side Pressure Gage
CLI # - FP-292002-IA-X-X-PI-2995 / 2996
Active CLI - Yes

System -292-2F Instrument Air Back Up Nitrogen System Pressure Regulator
CLI# - FP-292002-IA-X-X-PCV-2995 / 2996
Active CLI - Yes

System -292-2F Instrument Air Back Up Nitrogen System Pressure Safety Valve
CLI# - FP-292002-CGS-GBM-N2-PSV-2995 & 2996
Active CLI - Yes

System -292-2F Instrument Air Back Up Nitrogen System Check Valve
CLI# - FP-292002-IA-X-X-V-CK-A / CK-B
Active CLI - Yes

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
2	SAT	Ensure the Preventive maintenance (PM) requirements have been determined and scheduled in accordance with Manual 1Y, Procedure 5.02, Preventive Maintenance. Is all pre-start maintenance work is complete?	Paper - Technical Information Assessed

Results: The PM program establishes methods for determining and controlling Periodic (PE), Predictive (PR), and Planned (PL) maintenance activities and schedule frequencies to structures, systems and components (SSC).

The following PMs have been established for the SSCs and are in accordance with 1Y Manual:

Remove/Install High Pressure Gauge 2996-PG, PM Requirement No. 00072021 01 assigned a frequency of 12 months. Next due date is 11/03/2015 and is statused as "Active"

Remove/Install High Pressure Gauge 2996-PG, PM Requirement No. 00072021 02 assigned a frequency of 12 months. Next due date is 11/03/2015 and is statused as "Active"

Calibrate PuFF Cell 9 Differential Pressure Loop 1215, Work Order No. 1425837 assigned a frequency of 12 months. Next due date in 06/18/16 and is statused as "Active".

12M FUNCTIONAL TEST A TRAIN NITROGEN SYSTEM, PM Requirement No. 000069814 01 assigned a frequency of 12 months. Next due date is 01/28/2016 and is statused as "Active"

12M FUNCTIONAL TEST B TRAIN NITROGEN SYSTEM, PM Requirement No. 00069813 01 assigned a frequency of 12 months. Next due date is 01/28/2016 and is statused as "Active"

All pre-start maintance work is complete for the components presently installed.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	SAT	Has all M&TE required for operation / maintenance been identified, verified operational, and calibrated/certified as applicable.	Paper - Technical Information Assessed

Results: Per a discussion with the M&TE coordinator for the F Area Complex, all M&TE required to support the 235-F Risk Reduction scope is available. No special M&TE is needed at this time to support functional testing or IPI calibrations.

A recent calibration effort of the PuFF Cell 9 Differential Pressure Loop 1215, Work Order No. 1425837 and the M&TE used to perform the calibration was reviewed. This calibration was performed on 06/18/2015. The IPI has been assigned a calibration frequency of 12 months, next due date is 06/18/2016. The M&TE equipment used to perform the calibration has a current "Certificate of Calibration", re-calibration date of 04/23/2015 with a calibration frequency of 6 months, re-calibration required on or before 10/23/2015.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Verify the critical spare parts are on site, or on order.	Paper - Technical Information Assessed

Results: This assessor verified the following critical spares are on site or have been ordered.

System - 292-2F Instrument Air Back Up Nitrogen System High Side Pressure Gage
CLI # - FP-292002-IA-X-X-PI-2995 / 2996
Active CLI - Yes
Material ID No. - I34-124.00

System -292-2F Instrument Air Back Up Nitrogen System Pressure Regulator
CLI# - FP-292002-IA-X-X-PCV-2995 / 2996
Active CLI - Yes
Material ID No. - V90-101.00

System 292-2F Instrument Air Back Up Nitrogen System Pressure Safety Valve
CLI# -FP-292002-CGS-GBM-N2-PSV-2995 & 2996
Active CLI - Yes
Material ID No. - V90-102.00

System 292-2F Instrument Air Back Up Nitrogen System Check Valve
CLI# -FP-292002-IA-X-X-V-CK-A / CK-B
Active CLI - Yes
Material ID No. - V90-35.00

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	UNSAT	Observe one (1) evolution to verify level of knowledge, procedure compliance and training proficiency. This may include, but is not limited to, performance of PM, IPI calibration or TSR surveillance requirement.	Evolution - Performance of Work Assessed

Results: A surveillance activity involving calibration and functional testing of the PuFF Low Differential Pressure switch and alarm was observed. The pre-job briefing was held by the maintenance organization involved in the calibration of the switch and the operations organization involved in functional testing of the switch and alarm. The pre-job briefing was adequate for both parts of the work involved. The E&I foreman went over the calibration activity and the operation First Line Manager for 235-F went over the functional test activity. The E&I foreman used a pre-job briefing checklist to conduct the briefing and discussed ensuring that the identification of the parts matched the paperwork, the use of performing IV and SPVs, and ensuring the tools used to perform the calibration were within their calibration frequency. The potential for a Continuous Air Monitor (CAM) alarm was discussed and the evacuation routes to take if the CAM did alarm. The SAFER methodology was used to discuss error likely conditions that could arise during the activity. The Automated Hazards Analysis (AHA) was also discussed. The operations FLM used the actual functional test procedure as the briefing tool and queries his two operators as to their responsibilities while performing the job. The Radiological Control inspector disused the RWPs to be signed on during the job and the use of swipes to probe for contamination when line breaks are performed. After some confusion, it was determined that personnel observing the work were not required to be signed on during the RWP No issues were identified during the pre-job briefing. No issues were identified during the pre-job briefing.

The performance of the calibration and functional test were observed. The E&I mechanics understood their job requirements and were able to answer questions regarding the connection of the calibrator, air regulator, and the instruments appropriately. The calibrator was determined to be within calibration frequency based on the dates on the calibration sticker. The valves were adequately positioned to isolate the instrument and connect to the M&TE. The switch was identified to be out of calibration and had to be adjusted to complete the calibration activity. Calibration procedure W-794036, Pneumatic and Electronic IPI Calibration is a reference procedure. It was noted during performance of the procedure that step 14.D of section 5.1 has an error that sends the user back to the wrong step in the procedure. (FINDING) This was brought to the attention of the E&I foreman after the calibration was complete. The switch setpoint adjustments were conducted appropriately and the switch was determined to be set at the appropriate alarm setpoint during the recalibration. The calibration datasheets on form 48-303 had to be reviewed and signed off by engineering prior to the performance of functional test since the switch was initially found to be out of calibration. The functional test was performed IAW 235-F-2419 revision 0, Functional Test of PuFF Cell Low Differential Pressure Alarm. The performance of the FUNCTIONAL test was adequate.

This LOI was not met.

Finding 1	(POST-START) In 235-F, Reference Procedure W-794036, Pneumatic and Electronic IPI Calibration, could not be performed as written and workers failed to stop when it could not be completed.	**CAP Required** Contact: Hancock, Roy (L0800)
	Spec. Reqt.: Conduct of Operations interpretation 01-2014, Manual 2S, Procedure 1.3, Step 5.1.5 states the reference procedure should be followed as written.	

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS	
Reference Document	**Refers To**
Documents Reviewed FA-10	OTHER

Assessment Summary

Assessment No. **2015-SA-002961**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

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INITIATION

2015-SA-002961 *(Management Directed)*	Assessment Unit: DOE:NMOD	Facility Assessed: MO:ALFAOP	Schd: 6/30/2015	Status: APPROVED (7/10/2015)

Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-11 (Radiation Protection)

Program Doc No:

Assessment Type:	Activity Type:	Project:	Evaluation Date(s):
Readiness Assessment	FR SSO MFO	DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	6/16/2015 - 6/26/2015

Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)

Assessment Coordinator/Delegate: Harris, Rosemary (C3130)

Assessor/Team Members:

1 Parker, Jack (D8554) 90 Hrs (80 Fld Hrs) (Submitted: 7/10/2015)
2 Barnes, John (B7329) 25 Hrs (20 Fld Hrs)
3 Casey, Patrick (B9280) 2 Hrs

Functional Area:

11 Radiation Protection

Personnel Contacted:

1	Brown, Stanley (W7829)	First Line Manager Radiation Protection
2	Pifer, Terry (L3669)	F-Area Manager Health and Safety
3	Byrd, Charles (O7330)	Risk Reduction Operations Lead
4	Crowder, Thomas (L0009)	Health Physics Services
5	Barr, Sean (W7034)	Radiation Protecion Facility Manager
6	Pender, Michael (B2337)	Radiation Protection Inspector
7	Smith, Lawton (L4634)	Radiation Protection Inspector

Documents Reviewed:

1	RWP 15-FCA-104 Rev 1
2	RWP 15-FCA-105 Rev 0
3	WO 01378653-01 Rev 0 Draining Cell Shield Window #8 per DCP-F-13003, 235-F
4	WO 01378653-02 Rev 0 Removal of Cell #8 OUter Window Assembly
5	SRNS-J6700-2012000329 Evaluation for the Removal of the 235-F Shielding Glass from Cells 6-9
6	SRNS-J6700-2015-0004 Rev 0 Facility Annual Review of Monitoring Systems (FARMS) 235-F
7	SRNS-J6700-2015-00045 Rev 1 235-F Air Migration Study - 2014
8	Procedure 235-F-3644 Rev 1 Puncture/Laceration Wound Hazard Management Program
9	Procedure 235-F-3645 Rev 1 Installing and Removing Manipulators at 235-F PuFF Facility
10	Procedure 235-F-3643 Rev 3 PuFF Facility Glovebox/Cell Glove/Sphincter Replacement and Blind Cartridge Assembly Installation
11	Procedure 235-F-WH-022 Rev 1 TRU/MTRU Waste Transfer
12	Procedure 235-F-WH-030 Rev 1 General Decontamination and Waste Removal in the 235-F PuFF Facility
13	Procedure 5Q1.1 504 Rev 23 Radiological Work Permit
14	Procedure 5Q1.1 505 Rev 25 ALARA Review Procedure
15	SRNS-STI-2012-00504 Rev 0 Building 235-F Goldsim Fate and Transport Model
16	STAR 2015-CTS-003813 FA11--235-F Basis for Interim Operation (BIO)-Deactivation Rev 1, Technical Safety Requirement (TSR)-Deactivation Rev 1 and Risk Reduction Activities Readiness Assessment

	17 Drill N235PWWM DRSC 00101 235-F Risk Reduction Project Puncture Wound Drill
	18 Survey CANY-M-20140618-11 FCA 235-F Routines and Job Coverage
	19 SCD-6 SRS ALARA Manual

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
Through document review, interviews, and observations, the readiness of Risk Reduction activities with regards to radiation protection was assessed. In general the documents and practices were adequate to satisfy the Lines of Inquiry in this assessment. The assessment identified two findings and no opportunities for improvement. The two findings were associated with suspension guides and radiological survey techniques.

Noteworthy Practices:
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DOE-SR Assessment Information

Contractor Notification Sent By: Sent Dt:	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**	Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	UNSAT	Verify by documentation review the Radiological Work Permit (RWPs) for the campaign were approved and implemented.	Paper - Technical Information Assessed

Results: Radiological Work Permits (RWPs) for the risk reduction campaign were approved and available for use. RP managers and RPIs were also interviewed regarding the development and use of RWPs in general and specifically the development and use of those RWPs related to the Risk Reduction activities. The RP managers responsible for generating RWPs walked through the general logic and thought process of writing RWPs and explained how they determine PPE, suspension guides, and the process of assigning the different RWP tasks to the various workers according to their respective responsibilities. The RPIs were knowledgeable about the importance and use of RWPs and knew how to apply the various controls and requirements.

In reviewing the RWPs, 15-FCA-104 Rev 1, Task 1 does not have a suspension guide for removable alpha contamination. This task is associated with the replacement of cell equipment (e.g. manipulators). There are procedural limitations to the amount of removable alpha contamination within the procedure (e.g. 235-F-3645 step 5.1.28.B, "IF greater than 5,000,000 dpm/cm2 alpha is detected, THEN..."). However, Procedure 5Q1.1-504 Radiological Work Permit states that a suspension guide is "An administrative control developed during the radiological work planning process that is used to make radiological decisions regarding airborne radioactivity, contamination levels, and radiation dose rates." Furthermore, the procedure states that "All RWPs shall include suspension guides that void the RWP." (Section 2.1, Definitions and Abbreviations) Procedure 5Q1.1-504 does not allow nor does it provide a mechanism to bypass this requirement. This is a FINDING.

Documents Reviewed:

- RWP 15-FCA-104, Revision 1
- RWP 15-FCA-105, Revision 0
- SRNS Procedure 5Q1.1-504, Revision 23
- SRNS Manual 4B, Procedure 4, Revision 3

Personnel interviewed

- Radiation Protection Managers
- Radiation Protection Inspectors

This LOI was not met.

Finding 1	(PRE-START) In 235-F, RWP 15-FCA-104, Rev 1, Task 1 does not have a suspension guide for removable alpha contamination as required.	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: 5Q1.1-504 Section 2.1	

No OFIs Identified

No.	Grade	Description	Topic

2	SAT	Review dose assessment and verify that recommended ALARA controls, practices, and Personnel Protective Equipment (PPE) have been implemented.	Paper - Technical Information Assessed

Results: Reviewed SRNS-J6700-2012-00329, Revision 1, EVALUATION FOR THE REMOVAL OF THE 235-F SHIELDING GLASS FROM CELLS 6 - 9. This White Paper was developed by SRNS Health Physics Services (HPS) following a request from the 235-F source term reduction project engineering group to evaluate the dose impacts from the proposed activity to drain and remove the outer shielded windows of Cells 6 - 9. Very conservative maximum dose rates were estimated and fount to be well below the suspension guidelines listed in the RWPs; thus external exposure (gamma/beta) will not be an issue during the activities and will have minimal impact to the facility background radiation. The report indicated that Radiological Protection will monitor external dose rates during the removal process of each of the outer window assemblies. The recommended controls (contamination control, monitoring the dose rates and for removable contamination) are implemented in the technical work documents and radiological work permits. From the standpoint of external exposure, no additional PPE or engineered controls are required (e.g. temporary shielding). The PPE associated with these activities is limited to the chance of external contamination and airborne radioactive material. The RWPs for these activities show continuous coverage by RPIs is required. Interviews with RPIs and observations during this evolution confirm that it is common practice to monitor for external dose rates frequently during tasks.

Findings: None
OFI: None

Documents Reviewed:

- SRNS-J6700-2012-00329, Revision 1, EVALUATION FOR THE REMOVAL OF THE 235-F SHIELDING GLASS FROM CELLS 6 - 9
- WO 01378653-01 Draining Cell Shield Window #8 per DCP-F-13003, 235-F
- WO 01378653-02 Removal of Cell #8 OUter Window Assembly

Interviews Conducted:
- Health Physics Services
- Radiation Protection Inspectors

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	SAT	Verify a Facility Radiological Action Team (FRAT) assessment has been performed and that items / controls identified have been implemented.	Paper - Technical Information Assessed

Results: There is no procedural requirement for a FRAT. However, FRATs are to interface with other organizations and coordinate the overall safety in the facility, including radiological controls (SCD-6). The Contractor Readiness Assessment identified that 235-F does not have a FRAT so consequently, a contractor OFI was generated. A corrective action (CA) has been developed to evaluate the need to establish a facility FRAT and if a FRAT is established, then perform a review of the planned risk reduction scope of work. The contractor due date for this CA is 7/30/2015 (STAR 2015-CTS-003813).

Findings: None
OFI: None

Documents Reviewed:

- STAR Assessment No. 2015-SA-002132
- STAR Single Issue Report 2015-CTS-003813
- SRNS SCD-6, SRS ALARA Manual

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Review Facility Annual Review of Monitoring Systems (FARMS) document to ensure impacts were evaluated for air flow and sampling locations and that corrective actions have been taken as appropriate.	Plant - Facility Systems Assessed

Results: Reviewed the 235-F FARMS, and the associated Air Migration Study (AMS) to ensure impacts were evaluated for air flow and sampling locations and that corrective actions have been taken as appropriate. The FARMS indicates that a job-specific air sampling plan would be developed and put into effect prior to the beginning of the risk reduction activities. The plan was issued in August 2013 and is documented in SRNS-J6000-2013-00022, AIR SAMPLING PLAN FOR 235-F RISK REDUCTION ACTIVITIES IN THE PLUTONIUM FUEL FORM FACILITY (PuFF). The AMS identified airflow issues on the first level in facility areas where risk reduction activities will occur. At the time of the initial AMS, one of the supply fans (S1) was out of service. A follow-up AMS after the S1 fan was returned to service showed that the airflow was improved but not to the desired level. The F-Area Safety and Health Manager stated that a two-prong approach was developed for the airflow areas of concern: 1) Airborne Radioactivity Area postings will be utilized in impacted areas for worker protection, and 2) Re-balancing the airflow is

planned before risk reduction activities begin.

Findings: None
OFI: None

Documents Reviewed:
- SRNS Procedure 5Q1.2 - 132, Revision 13,
- SRNS Procedure 5Q1.2 - 458, Revision 15
- SRNS Procedure 5Q1.2 - 459, Revision 5
- SRNS-J6700-2015-00045, Revision 1, 235-F AIR MIGRATION STUDY - 2014
- SRNS-J6000-2015-00004, Revision 0, 235-F FACILITY ANNUAL REVIEW OF MONITORING SYSTEMS (FARMS)
- SRNS-J6000-2013-00022, Revision 1, AIR SAMPLING PLAN FOR 235-F RISK REDUCTION ACTIVITIES IN THE PLUTONIUM FUEL FORM FACILITY (PuFF)
- SRNS-P1000-2009-00011, Revision 0, RADIOLOGICAL ENTRY PLAN FOR D&D ACTIVITIES FOR 235-F MAR REDUCTION
- SRNL-STI-2012-00504, Revision 0, BUILDING 235-F GOLDSIM FATE AND TRANSPORT MODEL

Interviews Conducted:
- Health Physics Services
- F-Area Safety and Health Manager
- 235-F Radiation Protection First Line Manager
- Radiation Protection Inspectors

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	SAT	Interview two RCI and one RP FLM to verify an acceptable level of knowledge with respect to the process and training received.	People - Level of Knowledge Confirmed

Results: Interviewed two RPIs and one RP FLM utilizing the following line of questioning as appropriate:
- Formal and informal training received for the Risk Reduction Project.
- General knowledge of the Air Sampling Plan and the Air Migration Study.
- What does the statement on the RWP "and other activities and additional low risk activities approved by both the RP FLM and LWG FLM from authorized TWDs (procedures, AHAs & work packages) approved by RPD FLM and LWG FLM" mean to you?
- Previous experience working in 235-F and/or with Transuranic material.
- The greatest concern regarding the Risk Reduction Activities.

All personnel interviewed demonstrated an excellent level of knowledge that supports beginning the risk reduction work scope. Each interviewee has multiple years in working with TRU and plutonium.

Findings: None
OFI: None

Documents Reviewed: None

Interviews Conducted:
- Radiological Protection Inspectors
- Radiological Protection First Line Manager

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
6	UNSAT	Verify through observation of the evolutions, that RadCon can perform the required activities per procedures and personnel are practicing ALARA.	Evolution - Performance of Work Assessed

Results: The following evolutions were observed for the purpose of verifying proper RadCon and ALARA techniques and practices:
- 16 June Waste Shipment
- 17 June Window Removal Walkdown
- 22 June Glove Changeout
- 23 June Manipulator Replacement
- 24 June Waste Bagout

One of the evolutions (window removal), involved going into the Shift Operating Base at 235-F and walking through the procedure for draining the water from the shielded windows. The radiological control steps of the procedure were covered during the walk-through, but were not demonstrated. (This was identified as a finding in 2015-SA-2965, Conducts of Operations Functional Area)

The results of radiological surveys previously taken during regular facility rounds were reviewed and no issues were identified.

Some of the evolutions observed included off-normal scenarios (e.g., breach of containment, spread of contamination to include high airborne activity and worker injury (puncture wound)). The radiation protection personnel followed the procedures as written, which includes the provision to provide continuous coverage and perform additional surveys during the evolution per the judgement of the inspector. There were some isolated cases where the RPI did not follow proper techniques in conducting surveys (e.g., too rapid movement of the probe over an area, too great of a distance between the probe and the surface). As the week progressed, the practices improved to the point where surveys and practices were appropriate. However, this was identified as an Opportunity for Improvement in the Facility Self Assessment and the Contractor Readiness Assessment. Also, this observation has previously been noted by DOE. The recurring nature of the issue gives indication that previous corrective actions have been ineffective.

Failure to perform radiological surveys per Manual 5Q1.2, Procedure 133A is identified as Finding.

OFI: None

Documents Reviewed:
- 235-F-WH-022, Revision 1, TRU/MTRU WASTE TRANSFER
- WO 01378653-01, Revision 0, DRAINING CELL SHIELD WINDOW #8 PER DCP-F-13003, 235F
- WO 01378653-02, Revision 0, REMOVAL OF CELL #8 OUTER WINDOW ASSEMBLY
- 235-F-3643, Revision 3, PUFF FACILITY GLOVEBOX/CELL GLOVE/SPHINCTER REPLACEMENT AND BLIND CARTRIDGE ASSEMBLY INSTALLATION
- 235-F-3645, Revision 1, INSTALLING AND REMOVING MANIPULATORS AT 235-F PUFF FACILITY
- 235-F-WH-030, Revision1, GENERAL DECONTAMINATION AND WASTE REMOVAL IN THE 235-F PUFF FACILITY
- Survey CANY-M-20150618-11, FCA 2353-F ROUTINES AND JOB COVERAGE

Interviews Conducted: None

This LOI was not met.

Finding 1	(PRE-START) In 235-F, in some instances, personnel contamination surveys did not meet Radiological Control Organization requirements.	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: 5Q Chapter 3 3.338 and Appendix 3D	

No OFIs Identified

No.	Grade	Description	Topic
7	SAT	Verify radiological hazards discussed in pre-job briefing.	Evolution - Performance of Work Assessed

Results: Pre-job briefings were observed for the following evolutions:
- 16 June Waste Shipment
- 17 June Window Removal Walkdown
- 22 June Glove Changeout
- 23 June Manipulator Replacement
- 24 June Waste Bagout

In each briefing, the hazards were discussed. The appropriate RWP tasks were covered. In addition, during the briefings radiological action steps in the procedures were reviewed. Radiation protection personnel and operators were queried on expectations regarding radiological conditions, PPE to use, dosimetry, suspension guidelines, etc.

Finding: None
OFI: None

Documents Reviewed:
- 235-F-WH-022, Revision 1, TRU/MTRU WASTE TRANSFER
- WO 01378653-01, Revision 0, DRAINING CELL SHIELD WINDOW #8 PER DCP-F-13003, 235F
- WO 01378653-02, Revision 0, REMOVAL OF CELL #8 OUTER WINDOW ASSEMBLY
- 235-F-3643, Revision 3, PUFF FACILITY GLOVEBOX/CELL GLOVE/SPHINCTER REPLACEMENT AND BLIND CARTRIDGE ASSEMBLY INSTALLATION
- 235-F-3645, Revision 1, INSTALLING AND REMOVING MANIPULATORS AT 235-F PUFF FACILITY
- 235-F-WH-030, Revision 1, GENERAL DECONTAMINATION AND WASTE REMOVAL IN THE 235-F PUFF FACILITY

Interviews Conducted: None

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
8	SAT	Verify proper Personnel Protective Equipment (PPE) is being worn according to Radiological Work Permit (RWP) requirements.	Evolution - Performed of Work Assessed

Results: The following evolutions were observed that involved the use of PPE:
- 16 June Waste Shipment
- 17 June Window Removal Walkdown

- 22 June Glove Changeout
- 23 June Manipulator Replacement
- 24 June Waste Bagout

In each pre-job briefing, the appropriate PPE to use for each RWP task employed was discussed and reviewed with the operators and radiation protection personnel. During some of the evolutions, it was verified that the proper PPE was being donned (e.g., number and types of gloves, coveralls, shoe covers), and that it was donned and doffed appropriately.

Finding: None
OFI: None

Documents Reviewed:
- RWP 15-FCA-104, Revision 1
- RWP 15-FCA-105, Revision 0

Interviews Conducted: None

This LOI was met.

No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS
None

Assessment Summary

Assessment No. **2015-SA-002962**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

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INITIATION			
2015-SA-002962 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015 **Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-12 (Fire Protection)			**Program Doc No:**
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)	
Assessor/Team Members: 1 Naylor, James (L4062) 48 Hrs (4 Fld Hrs) (Submitted: 7/10/2015) 2 Casey, Patrick (B9280) 6 Hrs		**Functional Area:** 12 Fire Protection	

Personnel Contacted:

1	Apida, James (A6822)	F-Area Fire Protection Engineer
2	Key, Timothy (Y9882)	FAC Fire Protection Corrdinator
3	Harris, James (G9137)	DOE Fire Protection Engineer
4	Morton, Glenn (B8324)	NNSA Fire Protection Engineer
5	Barnes, Amanda (A7768)	F Area Operations
6	Pierucci, Dino (O8162)	Manager Fire Protection Engineer
7	Shull, Thomas (W8405)	F Area Operations

Documents Reviewed:

1	Fire Hazard Analysis for Building 235-F including Support Buildings (F-FHA-F-00034) rev 3
2	Building 235-F Designated Transient Combustible Posting (FRM-235-F-215, rev 0)
3	Buildng 235-F Transient Combustible Inspection (235-F-SF-018, Rev. 5)
4	F-Area Complex Fire Protection Program Plan (221-F-51120,Rev 16)
5	F-Area Complex Controls and Limits of Combustibles (221-F-51105, Rev 15)
6	Building 235-F Compressed Gas Cylinder Control (235-F-3355,rev 0)
7	F-Area Complex Fire Alarm Response (221-F-90501, Rev 5)
8	Fire Scenarios for 235-F (F-TRT-F-00004, Rev 1)
9	Building 235-F Fire Protection Program (U-FSMP-F-00010, rev 0)
10	Building 235-F Transient Combustible Control Program Description (F-TRT-F-00011 Rev 4)
11	235-F Hazardous Material and Chemical Control Program Description Document S-TRT-F-00003 rev 3)
12	Enclosure Integrity Evaluation (235-F-3302, Rev 1)
13	General Decontamination & Waste Removal in the 235-F PUFF Facility (235-F-WH-030, Rev 1)
14	Manual 2Q2-4F, Facility 235-F, 235-000F Fire Control Preplan
15	SRNS F-Area Fire Protection Compliance Matrix (F-ESR-F-00196, Revision 0,)
16	Building 235-F BIO - Deactivation (U-BIO-F-00003, Rev. 1,)
17	CHA for Building 235-F - Deactivation Phase 1A (S-CHA-F-00016, Rev. 4,)

	18 Building 235-F TSR - Deactivation (U-BIO-F-00003, Rev. 1)
	19 Manual 2Q, Procedure 2.14, Rev. 2, FHA Document Administration
	20 Qualified FPE Memorandum (SRNS-E1300-2015-00002)
	21 Star 2015-SA-001625, FSA FA-12
	22 235-F Emergency Lighting Inspection Checklist (FRM-FB-243)
	23 Exit Sign Inspection & test record June 2015
	24 STAR-2015 -CTS-003969
	25 STAR-2015-CTS-003990
	26 STAR-2015-CTS-003991
	27 STAR-2015-CTS-003970
	28 STAR-2015-CTS-003971
	29 STAR-2015-CTS-003972
	30 STAR-2015-CTS-003973
	31 STAR-2015-CTS-003975
	32 STAR-2015-CTS-003980
	33 STAR-2015-CTS-003992
	34 STAR-2015-CTS-003993
	35 STAR-2015-CTS-003994
	36 STAR-2015-CTS-003995
	37 STAR-2015-CTS-003985
	38 STAR-2015-CTS-003986
	39 STAR-2015-CTS-003987
	40 STAR-2015-CTS-003996
	41 STAR-2015-CTS-003997
	42 Technical safety Requirements Building 235-F Deactivation (U-TSR-F-00005 rev1)
	43 Transient Combustible Permit FRM-235-F-209
	44 Controls and Limits of Transient Combustibles in HB Line (221-HB-6903)
	45 Building 235-F Designated Transient Combustible Posting (FRM-235-F-215)
	46 SRNS F Area Fire Protection Compliance Matrix (F-ESR-F-00196 rev1)
	47 Modification Fire Hazard Analysis for F Area Complex Building 235-F Deactivation Phase 1 (F-MFHA-F-00001 rev 0)

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The focus of this assessment was on Functional Area -12 Fire Protection and the 235-F facility's readiness to support the start-up and operation of the 235-F Deactivation Activities 1-4. Facility procedures, 235-F Fire Hazard Analysis and supporting documentation were reviewed. Interviews and facility inspections were also conducted to support this assessment. As a result of this assessment, the level of fire protection readiness to support 235-F Deactivation Phase #1 is satisfactory. This assessment resulted in 3 Findings and 5 OFI's identified.

Noteworthy Practices:
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DOE-SR Assessment Information

Contractor Notification **Sent By:** **Sent Dt:**	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**	Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs			
No.	**Grade**	**Description**	**Topic**
1	UNSAT	Verify a Fire Hazard Analyses (FHA) prepared in accordance with Manual 2Q, Procedure 2.14. Review the FHA to ensure the proposed activities have been identified and analyzed in the FHA. Verify the approved FHA reflects the current conditions of the facility. Verify the FHA has been reviewed and approved by a Qualified Fire Protection Engineer, Current FHA is approved and in DCR.	Paper - Technical Information Assessed
Results: The 235-F Fire Hazard Analyses (FHA) (F-FHA-F-00034, Rev. 3) has been verified as addressing the key requirements of the SRNS Fire Protection Program Manual 2Q, Procedure 2.14 - "Fire Hazard Analysis Document Administration". This document superseded F-MFHA-F-00001, Modification Fire Hazard Analysis for the F Area Complex Building 235-F Deactivation Phase 1. The Deactivation Phase One information provided in the FHA is based on conceptual best available information. This information does not adequately describe the planned work activities of the Deactivation Phase1. This issue is listed as Finding #1. The Modification Fire Hazard Analysis, F-MFHA-F-00001, for the F-Area Complex Building 235-F Deactivation Phase 1 was not suspended in document control . This issue is listed as OFI #1 SRNS Readiness Assessment Issues related to the FHA (F-FHA-F-00034, Rev. 3) are being addressed in Star Record 2015-SA-002133. The approved FHA (F-FHA-F-00034, Rev. 3) is in Document Control and has been reviewed and approved by a Qualified Fire Protection Engineer.		
Finding 1		(POST-START) In 235-F, the current FHA does not adequately describe the proposed activities for Deactivation Phase 1 Activities 1-4. Several planned activities (Section 3.2.2 - Deactivation Activities Fire Analysis) are listed as only being analyzed from a conceptual standpoint based on best available information. Spec. Reqt.: Manual 2Q, Fire Protection Program Manual, Procedure 2.14.	**CAP Required** Contact: Kohler, Thomas (B9544)
OFI 1		In 235-F, the "Modification Fire Hazard Analysis" (F-MFHA-F-00001) for the F Area Complex Building 235-F Deactivation Phase 1 was not suspended in document control.	Contact: Kohler, Thomas (B9544)
No.	**Grade**	**Description**	**Topic**
2	UNSAT	Review the Safety Basis (SB) documents (CHA, BIO, and TSR) for the proposed activities and ensure the FHA aligns with these documents as required by Manuals SCD-11 and 2Q, Procedure 2.14. Verify via document review and facility walk downs that postulated fire scenarios are current. Review and verify appropriate fire protection controls (passive, active engineered and administrative) have been defined, developed, and ready for implementation.	Paper - Technical Information Assessed
Results: A review of the 235-F BIO (U-BIO-F-00003 Rev. 1), CHAP (S-CHA-F-00016 Rev.4) and the TSR (U-TSR-F-00005 Rev. 1) has been conducted. The 235-F Fire scenarios (F-TRT-F-00004 rev 1) were reviewed . These fire scenarios are used both by the DSA and FHA documents. The CHA process credited several barriers (refer to attachments C&D of fire scenario document) as minimizing propagation of postulated fires. There is no formal barrier inspection program and/or procedure to support this assumption. (OFI) From a field inspection of these CHA barriers, they (the barriers) appear to be in good condition at this time. However, minor repairs are necessary and are in the planning stages at the time of this review. Note - A 235-F DRAFT barrier Inspection procedures was provided the next day of this walkdown. The current Transient Combustible Permit program (FRM-235-F-209) which monitors combustible loading entering the facility is limited in it's effectiveness. There is no formal combustible loading chart available for consistently assessing what different materials may represent from a fire loading standpoint. Determination of the fire loading that materials represent is based on personnel judgement. (OFI) Fire Department Pre-Fire Plan (2Q2-4-F 235-000F Fire Control Plan Rev. 20) is outdated and contains incorrect information. (Finding)		
Finding 1		(PRE-START) In 235-F, the Fire Department Pre-Fire Plan (2Q2-4-F 235-000F Fire Control Plan Rev. 20) is outdated and contains incorrect information. Spec. Reqt.: Manual 2Q, Fire Protection Program , Procedure 2, Site Fire Protection Policy Management & Administration, Section 4.10.	**CAP Required** Contact: Kohler, Thomas (B9544)
OFI 1		In 235-F, there is no formal 235-F barrier inspection program/procedure to support the FHA/CHAP assumptions.	Contact: Kohler, Thomas (B9544)
OFI 2		In 235-F, there is no formal combustible loading chart available for consistently assessing what different materials may represent from a fire loading standpoint. Determination of the fire loading that materials represent is based on personnel judgement.	Contact: Kohler, Thomas (B9544)

No.	Grade	Description	Topic
3	UNSAT	Review the specific elements of the Fire Protection Program delineated in the TSR and verify the facility fire protection TSR requirements are well defined and are incorporated into approved implementing procedures.	Paper - Technical Information Assessed

Results: Building 235-F Fire Protection Program (U-FSMP-F-00010 Rev. 0) was developed as a matrix to support the implementation of the Building 235-F Deactivation TSR's (U-TSR-F-00005). The fire protection program procedures support the implementation of the fire protection related TSR requirements.

The roles and responsibilities of the fire protection engineer and the fire protection coordinator do not align in Form FRM-235-F-215 and procedure 211-F-51105 with the requirements as stated in 2Q Fire Protection Manual Procedure 5.5. (Finding)

Finding 1	(PRE-START) In 235-F, Form FRM-235-F-215 and Procedure 221-F-51105 do not align with the roles and responsibilities of the fire protection engineer and the fire protection coordinator as stated in the 2Q Fire Protection Manual, Procedure 5.5 .	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: 2Q Manual Procedure 5.5 section 5.4 Procedure 235-F-SF-016	

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Verify transient combustible procedures implementing the requirements of the facility Fire Protection Program Plan align with the proposed activities have been approved by a Qualified Fire Protection Engineer and are ready for use.	Paper - Technical Information Assessed

Results: 235-F transient combustible procedures have been approved by a Qualified Fire Protection Engineer. Draft procedures to support the Deactivation Phase 1 activities have not been developed to support designated transient storage areas, combustible loading limits,etc. (OFI)

Form FRM-235-F-215 and Procedure 221-F-51105 do not align with the roles and responsibilities of the fire protection engineer and the fire protection coordinator as stated in the 2Q Fire Protection Manual, Procedure 5.5 and Procedure 235-F-SF-016. (This is listed as a Finding in LOI 3)

The current transient combustible loading audit is performed weekly in 235-F. The facility is proposing to extend that to two weeks with the approval of the new BIO/TSR. With the approval of the new BIO/TSR the activity level in 235-F will significantly increase along with the allowable combustible loading. The facility should consider performing the transient combustible loading audit on the same frequency as currently being performed (i.e., weekly). (OFI)

No Findings Identified

OFI 1	In 235-F, evaluate developing procedures to support the Deactivation Phase 1 activities to support designated transient combustible storage areas, combustible loading limits, etc.	Contact: Kohler, Thomas (B9544)
OFI 2	In 235-F, the facility should evaluate keeping the transient combustible loading audit on a weekly basis vice every two weeks.	Contact: Kohler, Thomas (B9544)

No.	Grade	Description	Topic
5	SAT	Review the facility Compliance Matrix to verify if any engineering evaluations (i.e. equivalency, exemptions, variances, code standard evaluations) that are required to support proposed activities are current and have been approved by DOE.	Paper - Technical Information Assessed

Results: The 235-F fire protection compliance matrix has been reviewed. There are three items that are related to the 235-F facility. No outstanding issues were noted. There is no impact on the new scope of work planned by the Deactivation Phase 1 Project - Tasks 1-4.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
6	SAT	Walk down Building 235-F considering the areas supporting the proposed activities to review compliance with NFPA 101 (Life Safety Code). Verify emergency egress is provided, marked, and appropriately illuminated from the planned work areas. Verify the Life Safety Analysis in the FHA reflects the current field configuration.	Plant - Facility Systems Assessed

Results: A walkdown inspection of the emergency exit lighting and exit signs installed along the exit passageways in the 235-F Facility was conducted. These life safety features have been installed and are being maintained in accordance with the SRNS fire protection program, available NFPA codes and 235-F procedures.

The current design will provide personnel with a safe means of exiting the facility. The FHA does address the exit signs and emergency light issues.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
7	UNSAT	Walk down Building 235-F considering the proposed activities to verify that Transient Combustible Control program is ready for implementation. Review the Transient Combustible Controls Procedure to ensure ease of implementation. By an inspection, verify designated storage areas and limits are posting and easily identified. Control of transient combustibles by workers is well defined and ease to understands and implement.. Verify that the qualified fire protection engineer and fire protection coordinator roles and responsibilities are well defined in the transient combustible implementing procedures.	Plant - Facility Systems Assessed

Results: The current 235-F facility transient combustible program has been designed for a S&M facility. Current procedures do not provide any guidance with regards to determining the various values for commonly encountered combustible materials that will be used in the deactivation mode (i.e., full laundry bag at step off pad, roll of clear plastic sheeting, plastic air suit, air hoses,etc. (Procedure 235-F-SF-018 & FRM-235-F-209). (This OFI is captured in LOI 2)

235-F Designated Transient Combustible locations have not been established by the fire protection engineer. (Procedure 221-F-51105 & 235-F-SF-018) (This OFI is captured in LOI 4)

No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS
None

Assessment Summary

Assessment No. 2015-SA-002963

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION				
2015-SA-002963 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015	**Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-19 (Packaging and Transportation)			**Program Doc No:**	
Assessment Type: Operational Awareness	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015	
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)		
Assessor/Team Members: 1 Bell, William (B7644) 8 Hrs (3 Fld Hrs) (Submitted: 7/10/2015) 2 Casey, Patrick (B9280) 1 Hrs		**Functional Area:** 19 Packaging And Transportation		

Personnel Contacted:	Documents Reviewed:
None	1 Q-RWM-F-00001, Rev. 3, 235-F Radioactive Waste Management Basis
	2 Q-RWM-F-00005, Rev. 0, F-Area Operations Low Level, TRU, RCRA Hazardous Waste, and Mixed Radioactive Waste Certification Plan
	3 Q-RWM-F-00006, Rev. 1, 235-F Risk Reduction Low Level, TRU, and Mixed Radioactive Waste Certification Plan
	4 S-OSA-G-00003; Rev. 15, Onsite Safety Assessment for Transport of Solid/Liquid TRU Packagings
	5 S-OSA-G-00025, Rev. 6, Onsite Safety Assessment of Select SRS Packagings
	6 Manual 1S, SRS Radioactive Waste Requirements, Chapter 5, Rev. 1, Low Level Waste
	7 S-SBL-C-00004, Rev. 8, Radioactive Packaging Approval Log (2015)
	8 235-F-WH-020, Rev. 1, Waste Management Areas
	9 235-F-WH-022, Rev. 1, TRU/MTRU Waste Transfer
	10 235-F-WH-030, Rev. 1, General Decontamination and Waste Removal in the 235-F PUFF Facility
	11 SOP 221-F-55025, Rev. 33, Handling Green-is-Clean (GIC) Solid Low Level Waste (LLW) and Hazardous/Mixed Waste in F-Area Operations Facilities
	12 U-FSMP-F-00009, Rev. 0, 235-F Waste Management Program Description Document
	13 N235RRCH LPLN 00001 00, 235-F Risk Reduction Container Handling Lesson Plan.
	14 N235RRCH JPMZ 00001 00, 235-F Risk Reduction Container Handling Job Performance Measure
	15 Training Records for Risk Reduction Personnel

Purpose/Scope

The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements -

Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The Radioactive Waste Management Basis, Waste Certification Plans, On-Site Safety Assessments, Radioactive Waste Packaging Log, waste handling procedures, and training records were reviewed. No findings or OFIs were identified.

Noteworthy Practices:
None.

DOE-SR Assessment Information

Contractor Notification Sent By: Sent Dt:	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**			
		Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	SAT	Procedures are in place to ensure that packages and containers used for transportation of wastes both within and outside the facility are appropriate for the contents being shipped.	Paper - Technical Information Assessed

Results: Procedure 235-F-WH-030, General Decontamination and Waste Removal In The 235-F PuFF Facility, Rev. 2, specifies that DOT 7A Type A drums (55 gallon only) or Standard Waste Boxes (SWBs) are to be used. Both types of containers are listed in the RPAL. Procedure 235-F-WH-030 also specifies the appropriate closure instructions and requires them to be readily available. The containers are appropriate for the anticipated contents.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
2	SAT	OSA requirements have been incorporated into procedures.	Paper - Technical Information Assessed

Results: The Radioactive Packaging Approval Log (RPAL) requires compliance with either Onsite Safety Assessment S-OSA-G-00003; Onsite Safety Assessment for Transport of Solid/Liquid TRU Packagings, or S-OSA-G-00025, Onsite Safety Assessment of Select SRS Packagings, for F-Area Operations.

The 235-F Waste Certification Plans (Q-RWM-F-00005 and Q-RWM-F-00006) reference Onsite Safety Assessments S-OSA-G-00003 and S-OSA-G-00025.

The applicable OSA for risk reduction activities was S-OSA-G-00025 OSA Controls and Programmatic Attributes for TRU Waste Container Transfers is listed in Section 4.0 of the OSA. The controls listed were compared to procedures 235-F-WH-022 and 235-F-WH-030 to ensure the applicable OSA controls were included in the procedures. All applicable controls were included in one or both of the procedures.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	SAT	Training records are maintained for all Packaging and Transportation personnel.	Paper - Technical Information Assessed

Results: Training records for all personnel are maintained in the site computerized database, TRAIN or the Automated Qualification Matrix (AQM).

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	235-F personnel involved in Packaging and Transportation are given initial and recurrent training (on-the-job, in-house, and/or off-site) as appropriate.	Paper - Technical Information Assessed

Results: Training records for selected risk reduction personnel were reviewed and all personnel involved in Packaging and Transportation activities have received training in accordance with the 235-F Waste Certification Plan.

OSA Packaging and Transportation requirements are included in the 235-F waste handling procedures, 235-F-WH-022 and 235-F-WH-030. Specific requirements associated with loading and closure of DOT 7A Drums and Standard Waste Boxes were included the training course N235RRCH, which includes a classroom portion and a job performance measure. N235RRCH addresses OSA requirements for container loading and closure.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	SAT	Training is accomplished by personnel who meet established administrative qualifications as trainers.	Paper - Technical Information Assessed

Results: The 235-F Waste Certification Plan (Q-RWM-F-00006), requires Waste Generator Workers to complete NSAGWCOP, Facility Specific Training, which is computer based training (CBT).
The Waste Certification Plan also requires Waste Operators to complete the following courses:

NSAGWCOP, Facility Specific Training (CBT)
N235RRCH, Container Handling (CR/JP)
QREP1000, Site RCRA (CBT)
SE010530, Facility Specific RCRA Training (CBT)

All of the courses are CBT with the exception of N235RRCH which has a classroom portion and a Job Performance Measure. The classroom training and JPM were conducted by a qualified trainer/OJT evaluator.

This LOI was met.

No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS
None

Assessment Summary

Assessment No. **2015-SA-002964**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION				
2015-SA-002964 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015	**Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-20 (OSHA)			**Program Doc No:**	
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015	
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)		
Assessor/Team Members: 1 Taylor, Daniel (B7516) 48 Hrs (15 Fld Hrs) (Submitted: 7/10/2015) 2 Robinson, Anthony (R5569) 4 Hrs (2 Fld Hrs) 3 Casey, Patrick (B9280) 2 Hrs (2 Fld Hrs)		**Functional Area:** 20 Occupational Safety And Health		

Personnel Contacted:	Documents Reviewed:
None	1 Procedure 235-F-3644, Puncture/Laceration wound Hazard Management Program
	2 SDD-2015-00002, 235-F Risk Reduction Tooling List
	3 Manual 1Y, Procedure 8.20, Work Control Procedure
	4 SCD-15, Work Planning Guide
	5 235-F-WH-0022, TRU/MTRU Waste Drum Transfer Procedure
	6 Draining Cell Shield Window #8 PER DCP-F-13003
	7 10 CFR 851.20, Management Responsibility and worker rights and responsibilities.
	8 235-F-3645, Installing and Removing Manipulators at 235-F PuFF Facility
	9 235-F/292-2F Building Surveillance Round Sheet, FRM-235-F-208
	10 PuFF Facility Glovebox/Cell Glove/Sphincter Replacement and Blind Cartridge Assembly Installation, 235-F-3643
	11 General Decontamination and Waste Removal in the 235-F puFF Facility, 235-F-WH-030
	12 Work Order No. 01378653-01, Draining Cell Shield Window #8 per CDP-F-13003, 235F, Rev. 0
	13 Work Order No. 01378653-02, Removal of Cell #8 Outer Window Assembly, Rev. 0

Purpose/Scope

The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:

This assessment contains one finding and one opportunity for improvement. The finding relates to the approval and observed use of sharps in the glovebox area. The opportunities for improvement for the availability of Automatic Electronic Defibrillators

in the building.

Noteworthy Practices:
None Identified.

DOE-SR Assessment Information

Contractor Notification Sent By: Sent Dt:	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**			
		Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	UNSAT	Review the Puncture/Laceration Wound Hazard Management Program/procedure to ensure the requirements in AC 5.7.2.17 are implemented.	Paper - Technical Information Assessed

Results: DOE reviewed Procedure 235-F-3644, Puncture/Laceration Wound Hazard Management Program and SDD-2015-00002, 235-F Risk Reduction Tooling List, which implements the requirements of Adminstrative Control 5.7.2.17.

During the manipulator removal mock-up an unapproved tool was obtained from a nearby shop by a worker and used to secure the manipulator to the forks of a lift. The tool was a modified pair of grip pliers with the factory swivel pads removed. The remaining gripping surface was ground to a point creating a sharp. The use of the unapproved tool was not challenged by supervision.

As second item observed was an approved screwdriver, but it had been disposed of in a (simulated) rad waste bag. The screwdriver had not been taped to minimize its puncturing ability through the bag or a handler.

The introduction of an unapproved sharp tool during the simulated operations and the improper disposal of a sharp constitutes a Finding.

Finding 1	(POST-START) In 235-F, during demonstration of the manipulator removal a technician used an unapproved modified tool.	**CAP Required** Contact: Kohler, Thomas (B9544)
	Spec. Reqt.: Spec. Reqt.: Manual 8Q, Procedure 117, Hand and Portable Power Tools requires any tool that is modified to have the modification approved by the manufacturer and evaluated per 8Q, Procedure 51, Final Acceptance Inspection of New, Altered, or Dispositioned Facilities or Equipment.	

No OFIs Identified

No.	Grade	Description	Topic
2	SAT	A job hazard analysis has been completed for the startup/restart and necessary controls implemented in accordance with Manual 1Y, Procedure 8.20, Work Control Procedure, and SCD-15, Work Planning Guide.	Paper - Technical Information Assessed

Results: Job Hazard Analyses have been completed for each task in the process and controls have been implemented for the hazards of the work. DOE reviewed 20 Assisted Hazard Analyses for the work to be conducted in 235-F which adequately identified the hazards associated with each task.

As the number and regularity of workers in the building increases, the contractor should consider the need for Automatic Electronic Defibulator (AED) due to the remote location of the building. Personnel interviewed were CPR/AED trained, but there is no AED in the building. Due to the remote location 235-F management should evaluate the need for an AED in the building.
This is an OFI

No Findings Identified

OFI 1		In 235-F, an Automatic Electronic Defibrillator is not available.	Contact: Kohler, Thomas (B9544)

No.	Grade	Description	Topic
3	SAT	Personal protective equipment (PPE) required for this startup/restart is clearly defined, available in acceptable condition and sufficient quantity to support operations. Personnel are properly trained and use PPE correctly.	Paper - Technical Information Assessed

Results: Personnel were noted to adequately use PPE during the evolutions observed. Required PPE was covered at the pre-job briefings. Minimal PPE was observed in use at 235-F during a drill and a simulated waste shipment. Adequate supplies of PPE were available and no workers attempted to work without appropriate PPE. Supplies of PPE have not historically been a problem in any F-Area facilities.

During the glove replacement operation, the craft personnel operating the air compressor was knowledgeable of the alarms associated with the compressor and able and ready to send and receive communication to the supervisor of the work. The work supervisor was also able to communicate with the compressor operator.

This LOI is met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Verify the Final Acceptance Inspections (FAI) were completed as required for the tools that are identified in the six (6) 235-F Risk Reduction Technical Work Documents.	Plant - Facility Systems Assessed

Results: DOE verified that the Final Acceptance Inspection was documented for all the tools in SDD-2015-00002, 235-F Risk Reduction Tooling List, that were used in the observed evolutions referenced above.

This LOI is met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	SAT	Verify through observations of the pre-job and evolution that personnel are properly implementing the safety requirement steps in procedure.	Evolution - Performance of Work Assessed

Results: DOE observed the mock-ups and demonstrations for the Risk Reduction activities. All procedures included applicable safety requirements and all safety steps were executed correctly and the procedures included the applicable safety requirements.

During manipulator repairs two mechanics worked in tandem on two different stair ladder systems which, while they were angled toward each other, also required the workers to turn sideways on the platform. As the ladders were potentially too close to the equipment, the workers placed their feet precariously close to the edge of the unguarded platform edge. Additionally, both workers were wearing plastic suits with a hose that created a tripping hazard as workers exited the stairs backwards while their visibility for the hose was limited. Better positioning of the stair ladders, both distance and angle, and positioning of the air hoses out of the travel path could reduce the likelihood of a worker falling. A spotter and/or chain rail could further prevent or mitigate a fall.

This is an Opportunity for Improvement.

No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS

Reference Document	Refers To
SDD-2015-00002, Risk Reduction Tool List	INITIATION

Assessment Summary

Assessment No. **2015-SA-002965**

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION			
2015-SA-002965 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015 **Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-22 (Conduct of Operations)			**Program Doc No:**
Assessment Type: Readiness Assessment	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/26/2015
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)	
Assessor/Team Members: 1 Robinson, Anthony (R5569) 68 Hrs (16 Fld Hrs) (Submitted: 7/10/2015) 2 Barnes, John (B7329) 36 Hrs (16 Fld Hrs) 3 Taylor, Daniel (B7516) 24 Hrs (8 Fld Hrs) 4 Albertson, John (B9930) 64 Hrs (20 Fld Hrs) 5 Casey, Patrick (B9280) 8 Hrs (2 Fld Hrs)		**Functional Area:** 22 Conduct Of Operations	
Personnel Contacted: None		**Documents Reviewed:** 1 U-TSR-F-00005, Rev. 1, Building 235-F Technical Safety Requirements 2 U-BIO-F-00003, Rev. 1, BASIS FOR INTERIM OPERATION FOR BUILDING 235-F 3 235-F-WH-022, Rev. 1, TRU/MTRU Waste Transfer 4 Work Order No. 01378653-01, Draining Cell Shield Window #8 per DCP-F-13003, 235F 5 Work Order No. 01378653-02,Removal of Cell #8 Outer Window Assembly 6 NSAGDR77 Analytical Lab Drill Program, E5 Fan Failure 7 235-F-3644, Rev. 1, Puncture/Laceration Wound Hazard Management Program 8 235-F-3643, Rev. 3, PUFF Facility Glovebox/Cell Glove/Sphincter Replacement and Blind Cartridge Assembly Installation 9 235-F-WH-030, Rev. 1, General Decontamination and Waste Removal in the 235-F PUFF Facility 10 235-F-3645, Rev. 1, Installing and Removing Manipulators at 235-F PUFF Facility 11 NSAGDR77, Analytical Lab Project Drill Program E5 Fan Failure 12 N235PWWM DRSC 0001 01, 235-F Risk reduction Project Puncture Wound Drill 13 FRM-235-F-208, Revs. 27 and 28 14 F2161045.DRSC000101, Rev.1, External Event Impacting 235-F	

	15 F2161121.DSRC000101, Rev. 1, Full Facility Fire F2161073.DRSC000100, Rev. 0, External Event Impacting 235-F (Gas Cylinder Truck) 16 V35-1400, R0, Building 235-F Entry Control 17 V35-1247, R0, 235-F/292-2F Building Surveillance Round Sheet 18 V35-1157, R1, D&R Cell Window #8 19 V35-1156, R1, 235-F Risk Reduction Mock-up Activities 20 V35-1310, R2, General Decontamination and Waste Removal from PuFF Cells 21 V35-1322, R1, Preparation and Loading of TRU Waste Containers Produced in Building 235-F 22 V35-1276, R3, Install and Replace Manipulators in Building 235-F PuFF Facility 23 V35-1257, R3, Replacing Cell Gloves/Sphincters/Blind Cartridges and Clear Tubes

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 Implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The assessment of the Conduct of Operations and implementation of the 235-F Basis of Interim Operations for risk reduction consisted of observing field evolutions and conducting document reviews. Two findings were identified 1) the inability of the contractor to adequately demonstrate draining cell shield window #8 and 2) not all pre-job briefs discussed SAFER. Three opportunities for improvement were identified related to post job briefings, procedures, and drills.

Noteworthy Practices:
None identified.

DOE-SR Assessment Information

Contractor Notification **Sent By:** **Sent Dt:**	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**	Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	SAT	Procedures and work instructions for the start/restart are approved and can be performed as written. The procedures incorporate the controls from the safety basis, criticality safety analyses, and assisted hazards analysis, as required. When multiple procedures are required, it is clear how they interface with each other. Safeguards and security requirements have been incorporated in the procedures/work instructions as required.	Paper - Technical Information Assessed

Results: Reviewed a sampling of procedures and work instructions:

- 235-F-WH-022, TRU/MTRU Waste Transfer
- 235-F-3645, Installing and Removing Manipulators at 235-F PUFF Facility
- 235-F-WH-030, General Decontamination and Waste Removal in the 235-F PUFF Facility
- 235-F-3643, Rev. 3, PUFF Facility Glovebox/Cell Glove/Sphincter Replacement and Blind Cartridge Assembly Installation
- Work Order 01378653-01, Draining Cell Shield Window #8 per DCP-F-13003, 235F
- Work Order 01378653-02, Removal of Cell #8 Outer Window Assembly

The work instructions for cell draining (Work Order 01378653-01) need improvement, for example:

- A picture of the actual equipment and its arrangement should be included in the work package.
- Step 3.1 should contain specific rather than generic information (e.g., if permits are required, the specific permits should be

listed with specific permit requirements, what tools are required, etc.).
- The note at the bottom of page 3 should precede the step 3.8.
- All shield water isolation valves should be closed prior to draining the window in case the window #8 isolation valves leak by (you could potentially drain other cell windows).
- Step 3.6, this should be planned ahead of time so that the method and location of securing the manipulators is known and discussed in the pre-job brief.
- Step 3.8.c states to ensure the collection container is shimmed at one end. There is the potential to have 1200 pounds of water in the container. It may be safer to leave the container flat then when pumping out tilting only if necessary to get the last of the water out of the container.
- Step 4.5 cannot be completed since step 4.4 removed the plug and installed the temporary drain valve and nylobraid hose.
- Step 4.4 is not clear how the temporary drain valve, hose, leak collection rig, and pump will be assembled (arrangement drawing).
- Step 4.9 states to use a small pump to transfer liquid then gives examples of specific pumps. Is a specific pump required to ensure you don't have a positive displacement pump or pump with a certain flowrate?
- Step 4.12 is worded such that the drums must be banded. The step should be reworded so that banding is only required if transfer of the drums is required (If should be at the beginning of the step).
- The disposition of the water should be known before the window is drained and should be discussed in the pre-job brief.

The work instructions for window removal (Work Order 01378653-02) need improvement, for example:

- Several steps contain multiple actions.

- During the mock-up, the risk reduction operator was observed using his foot to steady the floor crane. The procedure should have a note that instructs the operator to use the installed wheel locks.

This LOI was met.

No Findings Identified

OFI 1	In 235-F, the work packages for draining Cell Shield Window #8 and Removal of Cell #8 Outer Window Assembly, (Work Order 01378653-01 and Work Order 01378653-02, respectively), need improvement, for example: Draining Cell #8 - A picture of the actual equipment and it's arrangement should be included in the work package. - All shield water isolation valves should be closed prior to draining the window in case the window #8 isolation valves leak by. - Step 3.6, this should be planned ahead of time so that the method and location of securing the manipulators is known and discussed in the pre-job brief. - Using the reader/worker method, step 4.5 cannot be completed since step 4.4 removed the plug and installed the temporary drain valve and nylobraid hose. - Step 4.12 is worded such that the drums must be banded. The step should be reworded so that banding is only required if transfer of the drums is required (If should be at the beginning of the step). The disposition of the water should be known before the window is drained and should be discussed in the pre-job brief. Removing Cell #8 Outer Window - Several steps contain multiple actions. - During the mock-up, the risk reduction operator was observed using his foot to steady the floor crane. The procedure should have a note that instructs the operator to use the installed wheel locks.	Contact: Kohler, Thomas (B9544)

No.	Grade	Description	Topic
2	SAT	Verify by reviewing a sampling of procedures that Specific Administrative Control (SAC) and Limiting Condition for Operation (LCO) requirements have been implemented in accordance with Procedure PS-TS-AP-4005, "Procedural Document Structure".	Paper - Technical Information Assessed

Results: The following procedures were reviewed and the SACs and LCO requirements were implemented in accordance with Procedure PS-TS-AP-4005, Procedural Document Structure.

- 235-F-WH-022, TRU/MTRU Waste Transfer
- 235-F-3645, Installing and Removing Manipulators at 235-F PUFF Facility
- 235-F-WH-030, General Decontamination and Waste Removal in the 235-F PUFF Facility
- 235-F-3643, Rev. 3, PUFF Facility Glovebox/Cell Glove/Sphincter Replacement and Blind Cartridge Assembly Installation

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	SAT	There is a well-established drill program with scenarios that address all events in the DSA that credit the Emergency Preparedness Program.	Paper - Technical Information Assessed

Results: The 235-F Deactivation BIO identifies the Emergency Response Program as a mitigative feature for facility fire events and loss of confinement events. The facility has three fire drill scenarios that adequately address the fire events identified in the BIO. The BIO identifies several loss of confinement events that credit the low E1 vacuum alarm and PUFF low differential alarm to prompts notification to workers to evacuate the facility. There is a drill scenario (E5 Fan Failure) that causes activation of the E1 low vacuum alarm and a PUFF low differential alarm that initiates an evacuation of 235-F. This drill scenario that was demonstrated during the DOE RA with no findings (see LOI 10). The BIO identifies one direct exposure event (puncture wound) and it credits the puncture wound/laceration hazard management program. The facility has a puncture wound drill scenario that was demonstrated during the DOE RA with no findings (see LOI 10). This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	SAT	Sufficient numbers of drills have been performed in the facility to demonstrate proficiency in responding to abnormal events.	Paper - Technical Information Assessed

Results: Reviewed 2S drill list provided by the F-Area drill coordinator. From 1/21/15 to 6/9/15, 14 2S drills that support 235-F risk reduction activities have been completed and one emergency preparedness drill (Full Facility Fire, F2161121.DRSC000101, Rev.1). A sufficient number of drills were conducted and the two drills that were observed during the RA had no findings identified (see LOI 10). The 2S drills should be revised to make the scenarios more challenging so personnel are better prepared to handle unexpected conditions. Multiple event drills would accomplish this. This LOI is met.

No Findings Identified

OFI 1	In 235-F, the 2S drills should be revised to make the scenarios more challenging so personnel are better prepared to handle unexpected conditions. Multiple event drills would accomplish this.	Contact: Kohler, Thomas (B9544)

No.	Grade	Description	Topic
5	SAT	Verify by field walk-down the Status Boards and Turnover Checklists are accurate and includes 235-F operations. (2S 4.1, 5.5)	Plant - Facility Systems Assessed

Results: The facility does have electronic status boards. They use a computer program that tracks the status of vital equipment to 772-F, 221-F, and 235-F. The new 235-F vital equipment (Nitrogen Backup System, E1 Low Vacuum, and PuFF Cell Low DP) were added to the computer status program and included on the turnover checklist (F-Complex morning report). This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
6	SAT	Review the Watchbill to verify the new operation, activity, or facility is included as required per the BIO/TSR. (2S 4.3)	Plant - Facility Systems Assessed

Results: Reviewed the F-Area Complex Watchbill. The TSR Minimum Staffing section implements the TSR minimum staffing requirements (5.2.2.b). This LOI is met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
7	SAT	Observe shift turnover and verify the new operation, activity, or facility is covered. (2S 4.1)	Plant - Facility Systems Assessed

Results: Observed shift briefings. The briefings are conducted at 0630 hours each morning in Building 772-F main conference room. The briefing is led by the 772-F Shift Operations Manager and the meeting is attended by the shift operations manager, support organization managers (maintenance, health physics, Electrical and Instrumentation, Quality Assurance, Engineering, construction, work control), and first line managers. The briefings are started with safety topics then each area (235-F, 772-F, F-Canyon, Radcon) provided a status of their area (equipment out of service, limiting condition of operations that have been entered, and safety issues/conditions). The work that was completed since the last shift briefing and the shift priorities were discussed. This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
8	SAT	Perform field observation of at least two (2) facility rounds with surveillance requirements. Verify adequate understanding of system / requirements to recognize and respond to abnormal conditions. (2S 5.4)	Evolution - Peformance of Work Assessed

Results: Performed 235-F rounds per procedure FRM-235-F-208, "235-F/292-2F Building Surveillance Round Sheet." The operator was familiar with the facility and was able to state physical modifications, new Specific Administrative Controls, and

equipment functional classification changes that were made to support risk reduction activities. The operator demonstrated that he knew what to do when safety related and non-safety related readings were found to be out of the acceptable range and how to differentiate between safety related and non-safety related roundsheet items. The operator demonstrated good radiological control frisking technique upon exiting radiological buffer areas.

Finding (this is outside the scope of the RA and was turned over to the DOE F-Area facility representatives) :

- In building 235-1F (Refrigeration Building No. 1), a test rig and auxiliary lighting obstructed the travel path to the safety shower. Manual 8Q, Employee Safety Manual, paragraph 5.1.7 requires Travel paths to safety shower/eyewash equipment must be maintained free of obstructions that could prevent immediate use of the equipment. This was corrected on the spot.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
9	SAT	Verify through observation of the procedure, the adequacy, technical content, components identified in the operating procedures match the labels in the field and that Operations and support groups can perform required activities. (2S 1.3, 5.11)	Evolution - Peformance of Work Assessed

Results: Reviewed the following procedures:
- 235-F-WH-022, TRU/MTRU Waste Transfer
- 235-F-3645, Installing and Removing Manipulators at 235-F PUFF Facility
- 235-F-WH-030, General Decontamination and Waste Removal in the 235-F PUFF Facility
- 235-F-3643, Rev. 3, PUFF Facility Glovebox/Cell Glove/Sphincter Replacement and Blind Cartridge Assembly Installation

The technical content of the procedures was adequate, components identified in the operating procedures match the labels in the field and Operations and support groups can perform the required activities. See LOI #1 for procedural opportunities for improvement.
This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
10	SAT	Verify through observation of two (2) 2S drills and exercises that Operations and support groups can perform required activities per procedures. (2S 3.3)	Evolution - Peformance of Work Assessed

Results: Observed the following 2S drills:

E5 Fan Failure (NSAGDR77)

Attended the drill controllers briefing for an E5 Fan Failure. The controller briefing covered the drill goals, facility initial conditions, prerequisites, initiating event description, performance criteria, expected response, abort limits, and termination criteria. It was discussed that all personnel would participate in the drill with the exception of the shift operations base (SOB) operator who is required by the TSR to remain to monitor the E1 low vacuum alarm. Rather than exempting the SOB operator from the drill, the controller should have quized him on the proper response to the alarm (which is to evacuate) after the BIO has been approved. The subcontractor responsible for maintenance on the chiller was also exempted from the drill. The main safety concern while conducting the drill was heat stress. Heat stress (outside temperature was in the upper 90's F) was discussed in the briefing and water was located in the outside locations where personnel would be located during the drill (rally point and 235-F vicinity).

Prior to commencement but after the PA announcement that the drill was about to commence, an infrastructure services (IS) truck entered the area. The controller met the IS personnnel and told them that if they did not want to be a part of the drill that they should leave. This is contrary to the instructions from the drill coordinator.

Personnel were evacuated to a safe location upwind of 235-F, all personnel were accounted for, and all personnel were observed evacuating expeditiously and in a safe manner. The SOM evacuated personnel to an ad-hoc rally point contrary to what had been discussed at the controllers briefing. The ad-hoc rally point was acceptable since it was upwind of 235-F and there was no release.

Once accountability was taken, the rally point coordinator relocated personnel to an air conditioned building. A drill de-briefing was conducted where the controllers and drill players discussed what went well and areas for improvement. The main area identified for improvement was communications (3-way communications/repeatbacks). The controllers passed the facility based on the objectives being met.

235-F Risk Reduction Project Puncture Wound (N235PWWM DSRC 0001 01)

Attended the drill controllers briefing for the puncture wound drill. The controller briefing covered the drill goals, facility initial conditions, prerequisites, initiating event description, performance criteria, expected response, abort limits, and termination criteria. When removing the wounded operator's hood, the RCT was observed using potentially contaminated gloves inside the hood potentially contaminating the operator. The controller caught the mistake and gave the indication that the operator was

contaminated. The RCT properly handled the potential contamination. The drill de-briefing was conducted where the controllers and drill players (the fire department personnel did not attend) discussed what went well and areas for improvement. The fire department personnel did not attent the de-brief.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
11	UNSAT	Observe pre-job briefing, mockup and post job to verify operations personnel demonstrate discipline of operations, adequate knowledge of new operation, activity, or facility. (2S 2.1)	Evolution - Peformance of Work Assessed

Results: Observed the following mock-up operations (including pre- and post-job briefings):

1) TRU/MTRU Waste transfer from 235-F (procedure 235-F-WH-022, TRU/MTRU Waste Transfer)

During the pre-job briefing, the FLM engaged all workers, questioning each on requirements and responsibilities of the job. Good use of the reverse brief technique was noted. The conduct of operations observed and post job review were adequate. The pre-job briefing could have been improved by discussing the Puncture/Laceration Wound Hazard Management Program and discussing critical and irreversibe steps.

2) Window Work Package Walkthrough (Work Order 01378653-01, Draining Cell Shield Window #8 per DCP-F-13003, 235F and Work Order 01378653-02, Removal of Cell #8 Outer Window Assembly

The scheduled activity was a walkthrough of draining cell window #8 and a mock-up of removing the outer window assembly. During the pre-job briefing, the FLM engaged all workers, questioning each on requirements and responsibilities of the job. Good use of the reverse brief technique was noted. The pre-job briefing could have been improved by discussing critical and irreversibe steps.

The walkthough of Draining Cell Shield Window #8 was conducted without the equipment that will be required to perform the job and the reader worker method was not used to demonstrate readiness to perform the task. Thus, the DOE RA team was unable to determine contractor readiness to perform window draining (pre-start finding).

The Risk Reduction Operations Lead (RROL) was not familiar with the leak collection rig or the specifics of the rig that will be used to drain the water and pumped from the 300 gallon trough to the drum. At a later time, the equipment (temporary drain valve, collection rig, tubing, pump, and trough) that will used to drain the water from Shield Window #8 was walked down with the RROL. The equipment was consistent with the description in the work instructions with the exception of the pump which is 3/4 HP but is described as 1/2 HP in the work instructions which is acceptable (the work instructions give examples of what types of equipment may be used rather that making it prescriptive). The RROL stated that a wedge would be placed under the trough (galvanized metal purchased from tractor supply) to ensure that the pump is able to pump out all of the water. The trough bottom may not be able to support 125 gallons of water (over 1000 lbs) when not supported by the floor. The wedge should not be placed under the trough until the pump loses suction which will substantially reduce the weight supported by the bottom of the trough.

The conduct of operations were adequate however the operator responsible for the lift cart used his foot as a brake rather than using the installed wheel locks.

The post job review was adequate; however, the contractor should have discussed that the operator responsible for the lift cart should have used the installed wheel locks rather than his foot as a brake to steady the cart when the window was placed on the cart.

3) Manipulator Removal (procedure 235-F-3645, Installing and Removing Manipulators at 235-F PUFF Facility)

During the pre-job briefing, the FLM engaged all workers, questioning each on requirements and responsibilities of the job. Good use of the reverse brief technique was noted. The pre-job briefing could have been improved by discussing critical and irreversibe steps. The conduct of operations were adequate. Post-job briefings could be improved by ensuring that good and bad observations are discussed so job performance can be improved. DOE made observations (items below) that the contractor did not discuss during the post-job review.
- RCI survey techniques were noted on occasion not meeting procedural expectations (i.e. distance from surface monitored and the frisking rate exceeded requirements). In some cases, when assessing dose, pause time was not adequate for proper instrument response (i.e. pause as short as several seconds was noted).
- LTA hose/cord management was noted. Personnel, on several occasions stumbled on hoses. Also, a power cord was contacted with equipment setting the stage for damage (e.g. the Ballymore Ladder was rolled up to and on the power cord of the HEPA vacuum cleaner).
- 2nd layer of containment installed on the manipulator was not vented, presenting potential for damage due to bulky nature of the arrangement (i.e. a lot of air remained in the bag).
- One worker stood on one foot to reach and hand an item to another worker vice taking one step toward the other worker.
- Tape technique used on the Respirex suit resulted in a pull that undermined the integrity of at least the suit's outer zipper and possibly the inner zipper. In the case of 3 of 4 workers, the tape was pulled away from the suit at the curve of the neck.
- Workers were noted using a crescent wrench on a manipulator mechanical fastener when a box wrench better suited for the job could have been used. Use of the crescent wrench could possibly damage the flats on the nut being removed.
- An unprotected screw driver was placed into a waste bag during the manipulator removal job. The unprotected screw driver

presented a threat of puncture to the waste bag.

4) Waste Bagout (procedure 235-F-WH-030, General Decontamination and Waste Removal in the 235-F PUFF Facility)

During the pre-job briefing, the FLM engaged all workers, questioning each on requirements and responsibilities of the job. Good use of the reverse brief technique was noted. The pre-job briefing could have been improved by discussing critical and irreversibe steps. The conduct operations were adequate. Post-job briefings could be improved by ensuring that good and bad observations are discussed so job performance can be improved. DOE made observations (items below) that the contractor did not discuss during the post-job review.

- RCI survey techniques were noted on occasion not meeting procedural expectations (i.e. distance from surface monitored and the frisking rate exceeded requirements). In some cases, when assessing dose, pause time was not adequate for proper instrument response (i.e. pause as short as several seconds was noted).
- Improperly oriented glove bag (i.e. the glove bag used for manipulator removal was installed with the right hand glove on the left side and the left hand glove on the right side).
- Several sharp surfaces were noted on the glove bag assembly used to change out a glove box glove. Specifically, the tops of each of the four pieces of the tube used to support the glove bag had sharp edges presenting a cut hazard.

This LOI was not met.

Finding 1	(PRE-START) In 235-F, the contractor was unable to adequately demonstrate draining cell shield window #8. Spec. Reqt.: Manual 12Q, ACH-1, Achieving Operational Readiness, Section 5.3 "A mock-up of operations should be performed when possible, where props are used and the equipment is actually operated according to the procedure."	**CAP Required** Contact: Kohler, Thomas (B9544)
Finding 2	(POST-START) In 235-F, not all pre-job briefings included a discussion on SAFER therefore topics such as puncture wound prevention may not be discussed. Spec. Reqt.: Manual 2S, Procedure 2.1, Communications, Section 5.8, Conducting Briefings on Planned Evolutions, requires SAFER to be discussed in all formal and informal pre-job briefings.	**CAP Required** Contact: Robinson, Anthony (R5569)
OFI 2	In 235-F, less than adequate performance and opportunities for improvement should be discussed during post-job reviews, for example: - RCI survey techniques were noted on occasion not meeting procedural expectations (i.e., distance from surface monitored and the frisking rate exceeded requirements). In some cases, when assessing dose, pause time was not adequate for proper instrument response (i.e. pause as short as several seconds was noted). - LTA hose/cord management. Personnel, on several occasions stumbled on hoses. Also, a power cord was contacted with equipment setting the stage for damage (e.g. the Ballymore Ladder was rolled up to and on the power cord of the HEPA vacuum cleaner). - Improperly oriented glove bag (i.e. the glove bag used for manipulator removal was installed with the right hand glove on the left side and the left hand glove on the right side). - Tape technique used on the Respirex suit resulted in a "pull" that undermined the integrity of at least the suit's outer zipper and possibly the inner zipper. In the case of 3 of 4 workers, the tape was pulled away from the suit at the curve of the neck.	Contact: Kohler, Thomas (B9544)

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS
None

Assessment Summary

Assessment No. 2015-SA-002966

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION				
2015-SA-002966 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** MO:ALFAOP	**Schd:** 6/30/2015	**Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-24 (Waste Management)			**Program Doc No:**	
Assessment Type: Operational Awareness	**Activity Type:** FR SSO MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)	**Evaluation Date(s):** 6/16/2015 - 6/25/2015	
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)		
Assessor/Team Members: 1 Bell, William (B7644) 10 Hrs (2 Fld Hrs) (Submitted: 7/10/2015) 2 Casey, Patrick (B9280) 1 Hrs		**Functional Area:** 24 Solid Waste Management		

Personnel Contacted:

None

Documents Reviewed:

1. Q-RWM-F-00001, Rev. 3, 235-F Radioactive Waste Management Basis
2. Q-RWM-F-00005, Rev. 0, F-Area Operations Low Level, TRU, RCRA Hazardous Waste, and Mixed Radioactive Waste Certification Plan.
3. Q-RWM-F-00006, Rev. 1, 235-F Risk Reduction Low Level, TRU, and Mixed Radioactive Waste Certification Plan
4. S-OSA-G-00003; Rev. 15, Onsite Safety Assessment for Transport of Solid/Liquid TRU Packagings
5. S-OSA-G-00025, Rev. 6, Onsite Safety Assessment of Select SRS Packagings
6. Manual 1S, SRS Radioactive Waste Requirements, Chapter 5, Rev. 1, Low Level Waste
7. S-SBL-C-00004, Rev. 8, Radioactive Packaging Approval Log (2015)
8. 235-F-WH-020, Rev. 1, Waste Management Areas
9. 235-F-WH-022, Rev. 1, TRU/MTRU Waste Transfer
10. 235-F-WH-030, Rev. 1, General Decontamination and Waste Removal in the 235-F PUFF Facility
11. SOP 221-F-55025, Rev. 33, Handling Green-is-Clean (GIC) Solid Low Level Waste (LLW) and Hazardous/Mixed Waste in F-Area Operations Facilities
12. U-FSMP-F-00009, Rev. 0, 235-F Waste Management Program Description Document
13. L2-1-30017, Rev. 3, Nondestructive Assay with Portable Gamma Detector
14. L16.1 ADS-2420, Rev. 8, High ¿Purity Germanium Detector Gamma Pulse Height Analysis
15. Memo SRNL-L4120-2015-00010, June 3, 2015.
16. DNFSB Recommendation 2007-1, Safety Related In Situ Nondestructive Assay of

	Radioactive Materials

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The Radioactive Waste Management Basis, Waste Certification Plans, On-Site Shipping Agreements, waste handling procedures, and training records were reviewed. One finding associated with incomplete GCO training was identified.

Noteworthy Practices:
None.

DOE-SR Assessment Information

Contractor Notification **Sent By:** **Sent Dt:**	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**	Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1	Sat	There is a Radioactive Waste Management Basis (RWMB) developed for each facility/activity engaged in the generation, packaging, treatment, storage, transportation and disposal of radioactive and mixed waste. The RWMB shall reference or define conditions related to radioactive waste management under which the facility, operations, or activity may be conducted.	Paper - Technical Information Assessed

Results: The facility does have an approved RWMB, Q-RWM-F-00001, Rev. 3.

The RWMB was approved by DOE on March 23, 2015. The approval states that the RWMB complies with DOE O 435.1, Radioactive Waste Management, by referencing the appropriate plans, procedures and requirements under which the facility must be operated.

The RWMB references the Waste Certification Plans (Q-RWM-F-0005 and Q-RWM-0006) which define the conditions uner which the facility operations or activities may operate with respect to radioactive waste.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
2	Sat	The facility has an approved waste certification plan that addresses waste generated by the activity described in the RA scope.	Paper - Technical Information Assessed

Results: The RWMB lists two waste certification plans for 235-F. Q-RWM-00005, Rev. 0, F-Area Operations Low Level, TRU, RCRA Hazardous Waste and Mixed Radioactive Waste Certification Plan, is for routine S&M activities not associated with Risk Reduction. Q-RWM-F-00006, Rev. 1, November 2014, 235-F Risk Reduction Low Level, TRU, and Mixed Radioactive Waste Certification Plan is for Risk Reduction activities only.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
3	Sat	Training and qualification requirements for personnel generating and handling waste have been defined.	Paper - Technical Information Assessed

Results: Training requirements for personnel generating and handling waste are defined in the waste certification plans.

Q-RWM-00005, Rev. 0, F-Area Operations Low Level, TRU, RCRA Hazardous Waste and Mixed Radioactive Waste Certification Plan, Section 3.0, defines the training and qualification requirements for F-Area operations surveillance and maintenance waste generator workers, waste operators, the GCO, and the CTF/ECA.

Q-RWM-F-00006, Rev. 1, November 2014, 235-F Risk Reduction Low Level, TRU, and Mixed Radioactive Waste Certification Plan, Section 3.0, defines the training and qualification requirements for risk reduction waste generator workers, waste operators, the GCO, and the CTF/ECA.

Both waste certification plans require training records to be maintained in accordance with Manual 4B.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
4	Sat	Procedures are in place to ensure that packages and containers containing waste meet the requirements of the RWMB and the Waste Certification Plan.	Plant - Facility Systems Assessed

Results: The 235-F RWMB requires all waste generated by 235-F to comply within the bounds outlined in the 235-F Waste Certification Program Plan and Manual 1S, Waste Acceptance Criteria.

The 235-F Waste Certification Plan (Q-RWM-F-00006) defines one low-level waste stream, and one TRU/MTRU waste stream. Both of these waste streams are controlled in accordance with procedures SOP-F-55025 (LLW), 235-F-WH-021 (LLW, TRU/MTRU) and 235-F-WH-030 (LLW, TRU/MTRU). Waste from other areas of the facility not related to risk reduction activities is managed under a separate waste certification plan and procedures which are outside the scope of this RA.

A sampling of the requirements of the 235-F Risk Reduction Waste Certification Plan was checked against the applicable procedures to ensure they were addressed. No deficiencies were identified.

This LOI was met.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
5	Unsat	All personnel associated with generating and handling waste have completed the required training.	Paper - Technical Information Assessed

Results: There were no changes to the Radioactive and Hazardous Waste Management Program in the 235-F Risk Reduction BIO that would affect the training for F-Area Operations personnel involved in generating or handling waste generated during normal surveillance and maintenance activities. Training for those personnel is outside the scope of this RA.

The 235-F Risk Reduction Low Level, TRU, and Mixed Radioactive Waste Certification Plan (Q-RWM-F-00006) requires waste generators/workers and operators to complete the following courses:

NSAGWCOP, F-Area Waste Certification Training;
N235RRCH, Container Handling;
QREP1000, Site RCRA CBT;
SE010530 F-Area F/H Lab RCRA Training.

The GCO is required to complete the site GCO qualification standard and F-Area facility specific qualification standards. The CTF/ECA is required to complete the site CTF/ECA Training.

Training records for all operations personnel associated with performing risk reduction activities were reviewed. All operators have completed the required training.

The GCO has completed all required training with the exception of N235RRCH.

The CTF/ECA has completed the required training.

This LOI was not met.

Finding 1	(PRE-START) The 235-F GCO has not completed all training required by the Waste Certification Plan. Specifically, he has not completed course N235RRCH, 235-F Risk Reduction Container Handling.	**CAP Required** Contact: Bell, William (B7644)
	Spec. Reqt.: Q-RWM-F-00006, Rev. 1, 235-F Risk Reduction Low Level, TRU, and Mixed Radioactive Waste Certification Plan, requires the GCO to complete the F-Area facility specific qualification standards which includes N235RRCH.	

No OFIs Identified

No.	Grade	Description	Topic
6	Sat	Is there an approved plan and/or procedures for performing hold-up measurements with improved accuracy for use in determining the effectiveness of the risk reduction activities? Does the approved plan or procedures reflect consensus standards?	Paper - Technical Information Assessed

Results: SRNL-L4120-2015-00010 documents the plan for performing "enhanced" characterization of the hot cells at 235-F. The plan states that scans using high purity Germanium (HPGe) detectors and Germanium Gamma Ray Imagers (GeGI) to take additional readings through partially disassembled windows and/or glove ports. MCNP models will be used to quantify the Pu-238 data from the GeGI. Extended count times will be used to improve the accuracy of the measurements.

Procedures L2-1-30017, "Nondestructive Assay with Portable Gamma Detector," and L16.1 ADS-2420, "High Purity Germanium Detector Gamma Pulse Height Analysis" Procedures provide guidance on performing the measurements. Procedures reflect the

recommendations contained in ASTM C1455-14, Standard Test Method for Nondestructive Assay of special Nuclear Material Holdup Using Gamma-Ray Spectroscopic Methods.

Additionally, DNFSB Recommendation 2007-1 "Safety Related In Situ Nondestructive Assay of Radioactive Materials," contained several recommendations associated with the performance of hold-up measurements, including the following:
Establishing qualification and training standards;
Application of standard protocols and methodologies; and
Standardization of correction factors for common situations.
The DNFSB recommendation was closed on March 19, 2013.

This LOI was met.

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No Findings Identified

No OFIs Identified

APPROVALS / REVIEWS	DISTRIBUTION
None	None

ATTACHMENTS

Reference Document	Refers To
SRNL-L4120-2015-00010	INITIATION

Assessment Summary

Assessment No. 2015-SA-003404

DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.) Project

☐ Show applicable STAR Actions

INITIATION				
2015-SA-003404 *(Management Directed)*	**Assessment Unit:** DOE:NMOD	**Facility Assessed:** DOE:TSD	**Schd:** 6/30/2015	**Status:** APPROVED (7/10/2015)
Title: DOE Readiness assessment for 235-F (BIO/TSR Rev. 1 and Risk Reduction Activities) - FA-03, DOE				**Program Doc No:**
Assessment Type: Readiness Assessment	**Activity Type:** ☐ FR ☐ SSO ☐ MFO	**Project:** DOE RA for 235-F (BIO/TSR R1 & Risk Reduct. Act.)		**Evaluation Date(s):** 6/16/2015 - 6/26/2015
Functional Area Mgr/Approver: Yates, Robert (L5183) (Approved: 7/10/2015)		**Assessment Coordinator/Delegate:** Harris, Rosemary (C3130)		
Assessor/Team Members: 1 Crenshaw, Jeffrey (B8251) 10 Hrs (8 Fld Hrs) (Submitted: 7/10/2015) 2 Casey, Patrick (B9280) 2 Hrs (1 Fld Hrs)		**Functional Area:** 03 Management Systems		

Personnel Contacted:	Documents Reviewed:
None	1 OSQA CY2015 Annual Assessment Plan (12/4/2014) 2 DOE-SR Dashboard Performance Indicator (April 2015) 3 DOE-SR Annual Workforce Staffing Analysis (12/31/2014) 4 EM-42 Federal Oversight Assessment Report (DRAFT, June 2015)

Purpose/Scope
The DOE Readiness Assessment (RA) will be conducted to validate personnel knowledge, procedures, equipment and disciplined operations in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. The Risk Reduction activities to be conducted in cells six through nine include characterization, glove cartridge installation, manipulator replacement, cell window removal and outer cell window cleaning.

Assessment Results:
The following Functional Area 03 (Management Systems) LOIs were reviewed in support of the 235-F Basis for Interim Operation - Deactivation Rev. 1, Technical Safety Requirements - Deactivation Rev. 1 implementation and Risk Reduction activities in Building 235-F Plutonium Fuel Form (PuFF) process cells six through nine. As a result, there were no Findings and one (1) Opportunity for Improvement identified.

Noteworthy Practices:
None

DOE-SR Assessment Information	
Contractor Notification **Sent By:** **Sent Dt:**	**External Assessment Contact Info:**

CAS Effectiveness:	**CAS Elements:**			
		Assessment	Management	Lessons Learned
		Event Reporting	Measures	Worker Feedback

Criterion / LOIs

No.	Grade	Description	Topic
1		DOE Office of Safety and Quality Assurance (OSQA) management systems for oversight of facility operations are adequate. Formal assessment plans have been developed and implemented.	Paper - Technical Information Assessed

Results: The Office of Safety and Quality Assurance (OSQA) management systems for oversight are in accordance with SRM

226.1.1E, Integrated Performance Assurance Manual. The SRM details the overall oversight process for both DOE-SR line and program organizations in the evaluation of contractor operations, programs, and activities. While the oversight process is adequate, DOE-SR has self-identified the need for the overall improvement in the process. DOE-SR has established an Enhanced Safety Oversight team, which is currently developing corrective actions to improve overall safety oversight across DOE-SR.

The OSQA has developed and approved a CY2015 Annual Assessment Plan (dated 12/4/2014) for the program areas (e.g. quality assurance, radiation protection, occupational safety, industrial hygiene) under its cognizance. Based on review of the latest version of the DOE-SR Dashboard Performance Indicators Report (April 2015), OSQA has completed thirty-six of forty-seven (77%) of the scheduled oversight activities required by their approved CY2015 Annual Assessment Plan.

Based on this review, the LOI is determined to be satisfactory.

No Findings Identified

No OFIs Identified

No.	Grade	Description	Topic
2		Sufficient numbers of OSQA qualified personnel have been assigned to perform oversight functions. Oversight personnel are qualified to the appropriate standards (Radiation Protection, Training, etc.).	Paper - Technical Information Assessed

Results: OSQA has the responsibility for the oversight of a number of the contractor programs (e.g. quality assurance, radiation protection, occupational safety, contractor training) through the use of qualified personnel. Based a review of the DOE-SR Annual Workforce Analysis and Staffing Plan Report (12/31/2014), there were a number of program areas where OSQA was in need of additional FTEs. Those program areas include quality assurance, radiation protection, fire protection, technical training, and occupational safety. In addition, the issue of shortages in key oversight positions at DOE-SR was noted as an observation in the recent EM-42 Federal Oversight Assessment Report (DRAFT). OSQA has made significant progress toward hiring FTEs and posting positions to fill the program areas of need. However, there remains a void in the number of qualified personnel needed to support the line organizations oversight of some of the program areas due to the time-period (approximately 18 months) required to complete training & qualifications.

Based on this review, the LOI is determined to be satisfactory with one OFI.

No Findings Identified

OFI 1	For DOE-SR, OSQA has a shortage of qualified personnel needed to adequately support line organization oversight of some of the program areas under its cognizant.	Contact: Nicholson, Dannie (L3476)

APPROVALS / REVIEWS	**DISTRIBUTION**
None	None

ATTACHMENTS
None