Work scope details:

Title: MPS Full System Checkout

Work Scope Summary: - The work involves conducting a comprehensive system checkout of the MPS, which includes inspecting and verifying the functionality of the entire system. This also encompasses the front end cadged area, particularly when radiation postings necessitate entry under a Radiation Work Permit (RWP).

Key Work Scope Components: - Comprehensive system inspection of MPS - Verification of system functionality - Inspection of the front end cadged area - Compliance with radiation safety protocols - Entry under a Radiation Work Permit (RWP)

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference link
Violation of Radiological Work Permit	Site personnel identified radiological work permit violations after two entries were made to the Transuranic Waste Storage Pad Cover Building by visiting personnel without proper dosimetry. Estimated exposure rates were less than one millirem per hour. Personnel exited the area immediately upon discovery. A Radiological Work Stand down was directed, and a critique was scheduled.	DOE sites shared by multiple contractors can lead to confusion in access controls and dosimetry. Processes must be timely and clear to prevent noncompliance. Training and management improvements are necessary to prevent recurrence.	Link
Radiological Work Permit Violation	An employee improperly entered a posted Radiological Protection Area wearing only a Personal Nuclear Accident Dosimeter instead of the required TLD. The TLDs of accompanying persons were processed to determine exposure. A critique was held.	Importance of timely and clear training for new employees. Management and procedural improvements are necessary to prevent recurrence.	Link
High Radiation Area Postings and Physical Controls Ensure Efficient and Compliant Work	High Radiation Area postings and physical controls need to be adequately considered and communicated during work planning activities to ensure efficient and compliant work performance.	Proper setup and communication of radiation postings and controls are crucial for efficient and compliant work.	Link
Radiation Protection Incident at C2RMF	A worker at the National Centre for Research and Restoration in French Museums suffered a first-degree radiation burn due to a malfunction in the safety control system of a particle accelerator. The event was rated at level 3 on the INES.	Adequate safety control systems and regular maintenance checks are essential to prevent radiation incidents.	Link

Attacks on Iranian Nuclear Facilities	Multiple attacks targeted Iranian nuclear facilities, damaging infrastructure and possibly impacting safety systems. Off-site radiation levels remained unchanged. The incident involved IAEA emergency responses.	Importance of robust security measures and emergency response plans to protect nuclear facilities.	Link

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference link	SBMS Link
Inadequate Radiation Postings and Controls	Current documents do not specify detailed registration or licensing requirements for radiation sources.	Implement detailed registration or licensing protocols for radiation sources and ensure compliance with OSHA guidelines.	OSHA Ionizing Radiation Control	Link
Malfunctioning Safety Control Systems	No mention of protocols for identifying and addressing malfunctioning safety systems.	Develop a protocol for regular inspection and maintenance of safety control systems to prevent malfunctions.	Potential Safety Control Systems	Link
Security Breaches	Lack of specific controls or procedures to prevent unauthorized access or breaches.	Establish comprehensive security protocols, including access controls and monitoring systems to prevent breaches.	Potential Security Breaches	Link
Error Traps (e.g., Time Pressures, Distractive Environment)	No strategies to mitigate human error due to environmental factors or time pressures.	Implement training programs focused on error recognition and management, and adjust work schedules to reduce time pressures.	Error Traps and Precursors	Link
Inadequate Training and Management	Training requirements are not comprehensive for all potential hazards.	Expand training programs to include comprehensive hazard identification and management strategies.	Potential Training and Management	Link

Failure mode analysis:

Current control	Failure mode of the control	Effect of Failure	Cause of Failure	Recommended action
Written permits for the work activity	Permit not obtained or expired	Unauthorized work leading to safety violations	Oversight in permit management	Implement a digital tracking system for permit status and expiration
Precautions, step warnings, Hold Points	Steps not followed or ignored	Increased risk of accidents or system damage	Lack of awareness or training	Conduct regular training sessions and audits to ensure compliance
Personal Protective Equipment (PPE)	PPE not used or inadequate	Exposure to hazardous conditions	Complacency or unavailability of PPE	Ensure PPE availability and enforce strict usage policies
Work instructions for information	Instructions not clear or incomplete	Misinterpretation leading to incorrect execution	Poor documentation or communication	Revise and standardize work instructions with clear guidelines
ORNL subject area requirements	Non-compliance with specific area controls	Regulatory non-compliance and potential fines	Lack of understanding of requirements	Provide detailed training on ORNL subject area requirements
Discuss group/individual responsibilities	Miscommunication of roles	Task overlap or neglect leading to inefficiencies	Undefined roles or responsibilities	Clearly define and communicate roles before work commencement
Follow work instructions & safety procedures	Deviation from procedures	Increased likelihood of errors or accidents	Overconfidence or time pressure	Reinforce the importance of adherence through regular briefings
Availability/location of materials, tools, etc.	Unavailability of necessary tools	Delays and potential safety risks	Poor inventory management	Implement a robust inventory management system
Response if work cannot be performed as planned	Inadequate contingency planning	Project delays and increased costs	Lack of foresight or planning	Develop and communicate contingency plans for common issues
Potential error traps (e.g., time pressures, distractive environment)	Errors due to environmental factors	Reduced work quality and safety	High workload or poor work environment	Implement measures to manage workload and minimize distractions

Stop Work: Observe an unsafe act	Failure to stop unsafe work	Increased risk of accidents	Lack of empowerment or awareness	Empower workers to stop work and report unsafe conditions
Emergency Response: Discuss egress paths	Inadequate emergency response	Increased risk during emergencies	Poor planning or communication	Conduct regular emergency drills and update response plans