Work scope details:

Title: Sairem GRP 1000 Transmitters Operations

Work Scope Summary: - The work scope involves the operation, service, and maintenance of Sairem Model GRP1000 RF transmitters installed in Building 7625. These transmitters support MPEX and other Fusion R&D projects. The plan includes configuration into a dummy load and Proto-Lite, with revisions required for new configurations. It excludes integrated testing for MPEX.

Key Work Scope Components: - Operation of Sairem GRP1000 Transmitters - Maintenance and routine service of the transmitters - Configuration control and approval for modifications - Coordination with MPEX Area Coordinator and Operations Staff - Compliance with after-hours work approval process

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference link
Loss of Configuration Control during Alarm Troubleshooting	No Release Required work packages (NRR) provide flexibility in resolving field conditions, but they should not modify the design configuration of a facility. Good turnover of information is key to successful conduct of operations. In this event, the exchange of information between a worker and a supervisor was incomplete. Personnel working on systems must ensure that the system condition is well understood at the end of the shift by the Person in Charge (PIC). This includes updating the work package to indicate package status and completing lifted/landed lead sheets.	No Release Required work packages (NRR) provide flexibility in resolving field conditions, but they should not modify the design configuration of a facility. Good turnover of information is key to successful conduct of operations. In this event, the exchange of information between a worker and a supervisor was incomplete. Personnel working on systems must ensure that the system condition is well understood at the end of the shift by the Person in Charge (PIC). This includes updating the work package to indicate package status and completing lifted/landed lead sheets.	Link
Electrical Test Components not identified as "MTL(Master Tester List) Equipment Control".	During preparation for a weapons training class at a Zone 12 South facility, a procedural noncompliance was identified after an employee raised a concern regarding the control of electrical test assembly components. After investigating the concern, engineering personnel confirmed that the components had not been controlled in accordance with procedures. Operations were curtailed and a critique was held.	For a document, and the information contained within, to be used as a source of information for other documents, it is critical that the original information be maintained in an accurate and concise manner. This would preclude misinformation from being passed along to others. It is also good practice for the using organization to validate the information that they are depending upon.	Link

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference link	SBMS Link
High Voltage	Not explicitly listed as a separate hazard	Include specific controls for high voltage, such as detailed Lock/Tag/Verify (LTV) procedures and high voltage PPE requirements	N/A	Link
Non-Ionizing Radiation	Not addressed in current hazards	Implement exposure assessments, signage, and training for non-ionizing radiation hazards	N/A	Link
Loss of Configuration Control	Not addressed in current hazards	Develop a configuration management plan to ensure system safety and integrity	NASA SWEHB	Link
Electrical Test Components not identified as "MTL Equipment Control"	Not addressed in current hazards	Identify and label electrical test components, provide training on electrical hazards, and ensure compliance with electrical safety standards	OSHA Electrical Safety	Link
Electromagnetic Radiation	Not addressed in current hazards	Conduct risk assessments for electromagnetic radiation, implement safe distance protocols, and provide training on EMF risks	Tek Blog on Radiation Hazards	Link
Water Spray and Conductive Substances	Not addressed in current hazards	Assess risks associated with water spray and conductive substances, implement controls to prevent electrical hazards in wet conditions	N/A	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 not followed	Unauthorized or unsafe work conducted	Lack of awareness or negligence	Ensure all personnel are trained on permit requirements and verify permits are obtained and reviewed before work begins
Personal Protective Equipment (PPE)	PPE not used or inadequate	Increased risk of injury	Lack of PPE availability or awareness	Conduct PPE audits and ensure availability and proper training on PPE use
Work instructions and safety procedures	Instructions not followed or misunderstood	Unsafe work practices leading to accidents	Poor communication or training	Regularly review and update work instructions; conduct training sessions
Configuration control	Unauthorized configuration changes	Equipment damage or safety hazards	Lack of coordination or oversight	Implement strict configuration management protocols and require approvals for changes
Pre-job briefings	Briefings not conducted or incomplete	Lack of awareness of hazards and procedures	Time constraints or oversight	Schedule mandatory pre-job briefings and document attendance
Hazard identification and evaluation	New hazards not identified or assessed	Unmitigated risks leading to incidents	Incomplete hazard assessments	Regularly update hazard evaluations and conduct field inspections
Emergency response procedures	Inadequate emergency response	Delayed or ineffective response to incidents	Lack of training or unclear procedures	Conduct emergency drills and ensure clear communication of procedures
Training requirements	Personnel not adequately trained	Increased likelihood of errors or accidents	Incomplete training records or oversight	Maintain up-to-date training records and conduct regular training sessions
Work hand-off/turnover	Poor communication during hand-off	Misunderstandings leading to errors	Lack of standardized procedures	Implement standardized hand-off protocols and ensure clear communication

Documentation review and authorization	Incomplete or incorrect documentation	Unapproved or unsafe work conducted	Oversight or lack of accountability	Implement a robust review and approval process with clear accountability