Work scope details:

Title: Monthly Emergency Generator Surveillance for Building 1503

Work Scope Summary: - The work involves conducting a monthly surveillance of the emergency generator located in Building 1503 to ensure its operational readiness and reliability.

Key Work Scope Components: - Conducting a thorough inspection of Emergency Generator 80-1503. - Testing the generator's functionality and performance. - Documenting the condition and any issues found during the surveillance. - Ensuring compliance with safety and operational standards. - Reporting findings and recommending any necessary maintenance or repairs.

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Failed Monthly Back-up Generator Surveillance Test at Building 200	On November 23, 2010, at Building 200, FMS-Building Maintenance (BM) attempted and failed to start the back-up generator that supplies backup electrical power to the 200 MAMB Nuclear Facility. An error message communicating Low Frequency was present. The foreman cleared the error and successfully started the generator. The incident is under investigation.	The system functioned as designed with GDE04 initiating upon failure of GDE07. The voltage regulator was replaced, but the issue was unresolved, requiring vendor expertise for troubleshooting.	Link
Potential Exposure to Hazardous Energy during Building-511 Roll-up Door Maintenance Activities	On September 7, 2023, during maintenance on a roll-up door at Building 511, a subcontractor worked under the raised door without formal Lockout/Tagout (LOTO) procedures. A safety pause was initiated but work resumed after confirming the energy source was under the threshold. Mechanical hazards were not addressed.	Reliance on safety devices without considering mechanical hazards can lead to unsafe conditions. LOTO should be performed to address all potential hazards.	Link
Det-Tronics Trouble Signal and Power Outage at Pantex Plant	On September 19, 2023, a power outage in Zone 12 was reported with a Det-Tronics alarm. A failed butt splice caused a breaker to trip, leading to an unplanned electrical outage and cancellation of operations.	Identifying and addressing infrastructure vulnerabilities is crucial to prevent unplanned outages. Regular maintenance and inspections can help mitigate such risks.	https://doeopexshare.doe.gov/lesson/39500

Lockout/Tagout Violation at Nevada National Security Site	On September 12, 2023, an electrician hung their tag on the wrong location per the Lockout/Tagout (LOTO) procedure, leading to potential exposure to energized components. No injuries occurred, but work was stopped for investigation.	Proper adherence to LOTO procedures is critical to ensure safety. Regular training and verification of LOTO practices are essential to prevent similar incidents.	https://doeopexshare.doe.gov/lesson/39500
Nuclear Plant Emergency Diesel Generator Unavailability	On October 6, 2025, a nuclear plant's 'C' emergency diesel generator became unavailable due to the loss of cooling water during maintenance activities, triggering an automatic reactor trip. Operators stabilized the plant with no reported health or safety impact.	The incident highlights the importance of ensuring the availability of critical systems during maintenance activities. It also underscores the need for thorough checks and vendor expertise in troubleshooting and repair.	https://www.nrc.gov/reading-rm/doc-collections/event-status/e
Cobalt Magnet 2025: Radiological Emergency Simulation	In March 2025, over 70 agencies participated in "Cobalt Magnet 2025," a large-scale radiological emergency simulation involving nuclear power plant accidents and emergency response drills in Michigan and neighboring regions.	The drill highlighted the importance of operational readiness checks, generator operation, and emergency inspections. Regular drills and simulations are crucial for preparedness.	https://www.clickondetroit.com/detroit/news/simulation-drill-nuclear-power-

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference link	SBMS Link
Mechanical hazards	Not addressed	Ensure guards are in place, functional safety interlocking devices, warning signs, and safe work practices.	N/A	Link
Exposure to hazardous energy	Not addressed	Implement a comprehensive hazardous energy control program, including lockout/tagout (LOTO) procedures.	Link	Link

Generator malfunction	Not addressed	Conduct regular inspections and maintenance, provide training on safe operation, and ensure safety devices are not bypassed.	Link	Link
Electrical outage	Not addressed	Develop emergency preparedness plans, including backup power solutions and safety measures during outages.	Link	Link
LOTO violation	Not addressed	Establish and enforce strict lockout/tagout procedures to control hazardous energy during maintenance.	Link	Link
Cooling system failure	Not addressed	Implement preventive maintenance and safety protocols for cooling systems to prevent failures.	Link	Link
Error traps (e.g., time pressures, distractive environment)	Not addressed	Identify and mitigate error traps through training, workload management, and environmental controls.	Link	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 incomplete	Unauthorized work leading to safety hazards	Miscommunication or oversight in permit process	Implement a checklist to ensure all permits are obtained and verified before work begins
Precautions, step warnings, Hold Points	Steps not followed or warnings ignored	Increased risk of accidents or equipment damage	Lack of attention or understanding of procedures	Conduct a pre-job briefing to emphasize critical steps and warnings
Personal Protective Equipment (PPE)	PPE not used or inadequate	Increased risk of injury to personnel	Lack of PPE availability or awareness	Ensure PPE availability and conduct training on its importance and proper use

Work instructions for information	Instructions not followed or misunderstood	Ineffective or unsafe work execution	Poor communication or unclear instructions	Simplify and clarify instructions; provide training sessions
ORNL subject area requirements	Non-compliance with hazard controls	Legal and safety violations	Lack of awareness or understanding of requirements	Regular audits and training on compliance requirements
Group/individual responsibilities	Responsibilities not clearly defined	Confusion and potential safety risks	Poor communication or lack of role clarity	Clearly define and communicate roles and responsibilities before work begins
Availability/location of materials, tools, etc.	Tools/materials not available or misplaced	Delays and potential safety hazards	Poor planning or inventory management	Implement an inventory management system and pre-checks
Response if work cannot be performed as planned	Inadequate response to unforeseen issues	Escalation of issues leading to safety risks	Lack of contingency planning	Develop and communicate a contingency plan for unexpected scenarios
Potential error traps	Error traps not identified or mitigated	Increased likelihood of errors	Lack of awareness or experience	Conduct error-trap analysis and training to identify and mitigate potential traps
Stop Work for unsafe conditions	Failure to stop work when unsafe	Continued unsafe conditions leading to accidents	Pressure to complete work or lack of empowerment	Empower workers to stop work and provide training on recognizing unsafe conditions
Emergency Response	Inadequate emergency response plan	Increased severity of incidents	Lack of planning or training	Develop and regularly test emergency response plans