

Work scope details:

Title: Replacement of Motor Controls for K-9 and K-7 Office Area Supply and Charging Area Supply

Work Scope Summary: This work plan involves the replacement and upgrade of motor control components and wiring for the K-9 and K-7 office area supply and charging area supply systems. The existing components, which have exceeded their operational lifespan, will be replaced with modern, approved parts to ensure reliable operation and compliance with safety standards.

Key Work Scope Components:

- Perform Complex Lock/Tag/Verify (L/T/V) for MCC #2 and Simple L/T/V for MCC #1.
- Remove existing MCC buckets and rebuild them with listed components.
- Install new MCC bucket control components and wiring.
- Conduct functional testing on pump motors and ventilation fan interlocks.
- Ensure compliance with ORNL, NFPA-70, and NFPA-70E requirements.

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Electrical Fire Incident at MCC	An electrical fire occurred in a motor control center due to faulty wiring and lack of proper maintenance.	Regular inspections and timely replacement of aging components can prevent electrical fires.	N/A
Equipment Malfunction During Maintenance	A maintenance technician was injured when a motor unexpectedly activated during maintenance due to improper lockout/tagout procedures.	Strict adherence to lockout/tagout protocols is crucial to ensure worker safety during maintenance.	N/A
Lead Exposure Incident	Workers were exposed to lead dust while removing old electrical components without proper PPE.	Implementing a comprehensive PPE program and training on lead exposure risks is essential.	N/A
Asbestos Contamination Event	During maintenance, asbestos-containing materials were disturbed, leading to contamination.	Proper identification and management of asbestos materials are critical before starting work.	N/A
Radiological Safety Breach	A radiological safety breach occurred when workers failed to follow radiological work permit protocols.	Ensuring all personnel are trained and aware of radiological safety procedures is vital.	N/A

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Electrical Shock	Not addressed	Implement additional training on electrical safety and ensure PPE is worn at all times.	N/A	N/A
Asbestos Exposure	Inadequate identification of potential asbestos in old MCC buckets	Conduct a thorough asbestos survey before work begins.	N/A	N/A
Lead Exposure	Not addressed	Ensure lead awareness training is provided and proper PPE is utilized.	N/A	N/A
Confined Space Entry	Not addressed	Assess if any work requires confined space entry and provide appropriate training and permits.	N/A	N/A
Noise Exposure	Inadequate noise assessment	Conduct a noise assessment and provide hearing protection as necessary.	N/A	N/A
Tool Safety	Not addressed	Ensure all tools are inspected before use and that proper training on tool safety is provided.	N/A	N/A
Work Area Hazards	Not addressed	Conduct a pre-job hazard assessment to identify and mitigate work area hazards.	N/A	N/A
Communication Failures	Not addressed	Establish clear communication protocols among team members during the work process.	N/A	N/A

Failure mode analysis:

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Lockout/Tagout Procedures	Permit not obtained or expired	Potential for accidental energization leading to injury	Lack of oversight in permit management	Implement a tracking system for permits to ensure they are current.
PPE Requirements	PPE not used or inadequate	Increased risk of exposure to hazardous materials	Lack of enforcement of PPE policies	Conduct regular audits to ensure compliance with PPE requirements.
Work Instructions	Vague or incomplete instructions	Increased likelihood of errors during work	Poor communication of work scope	Revise work instructions to include detailed steps and safety precautions.
Training and Competency	Inadequate training on new equipment	Increased risk of accidents due to unfamiliarity	Insufficient training programs	Develop and implement a comprehensive training program for all relevant personnel.
Emergency Response Procedures	Lack of clarity in emergency procedures	Delayed response to incidents	Poor communication of emergency protocols	Conduct regular drills and training sessions to reinforce emergency procedures.
Tool Availability	Tools not available or inadequate	Increased downtime and potential for using unsafe tools	Poor inventory management	Establish a tool inventory system to ensure availability and condition of tools.
Communication Processes	Ineffective communication among team members	Increased risk of misunderstandings and errors	Lack of structured communication protocols	Implement regular team meetings to discuss work progress and address concerns.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Hazard Assessment	Incomplete hazard assessments prior to work	Unidentified hazards leading to incidents	Rushed planning processes	Require a thorough hazard assessment to be completed and reviewed before work begins.

This risk assessment report provides a comprehensive overview of potential hazards and necessary mitigations related to the work plan for replacing motor controls in the K-9 and K-7 office areas. The recommendations aim to enhance safety and compliance with relevant regulations and standards.