Work scope details:

Title: Modify the 3525 Exhaust Fan Shaft Guard/Motor Covers

Work Scope Summary: - The work involves modifying the shaft guard and motor covers on the K-20 exhaust fan to ensure proper protection and functionality.

Key Work Scope Components: - Modification of shaft guard - Modification of motor covers - Ensuring proper protection - Ensuring functionality of the exhaust fan - Compliance with safety standards

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference link
Missing Exhaust Fan Cover	On August 29, 2022, an employee discovered the exhaust fan cover was missing in restroom trailer MO-2334, potentially exposing employees to hazardous energy. Proper notifications were made.	Ensure all equipment covers are in place and secure to prevent exposure to hazardous energy. Regular inspections and maintenance are crucial.	Link
Exhaust Fan Lubrication Maintenance	Chemical Material Handlers performed annual maintenance on exhaust fans, requiring replacement of lubricant reservoirs. Challenges included accessing the fourth unit due to a flammable storage cabinet.	Plan for equipment accessibility and ensure proper tools and lifts are available to safely perform maintenance tasks.	N/A
Moving HVAC Parts Pose Amputation Risk	Maintenance operations involving HVAC equipment can pose risks due to rotating parts. Hazards like "windmilling" were not recognized in job hazard analyses.	Include hazards of rotating parts in job hazard analyses and ensure workers are adequately trained to recognize and control these hazards.	Link

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference link	SBMS Link
Rotating parts (e.g., shaft, pulley, fan)	No mention of machine guarding for rotating parts	Implement machine guarding and regular inspection protocols	N/A	Link
Missing or improperly secured exhaust fan covers	No specific controls for exhaust fan covers	Implement regular inspection and maintenance schedule for exhaust fans	Link 1, Link 2, Link 3	Link

Chemical exposure from maintenance materials (e.g., lubricants, paint removers)	No specific controls for maintenance chemical exposure	Develop a chemical management plan including safer alternatives and exposure controls	Link 1, Link 2, Link 3	Link
Inadequate training or hazard recognition	No specific mention of training for hazard recognition	Implement comprehensive hazard recognition training programs	Link 1, Link 2, Link 3	Link
Time pressures and high workload	No controls for managing time pressures and workload	Implement workload management strategies and stress reduction programs	Link 1, Link 2, Link 3	Link
Debris in eyes during modification work	No specific controls for eye protection during modification work	Require use of protective eyewear and implement engineering controls to minimize debris	Link 1, Link 2, Link 3	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	Lack of awareness or oversight	Ensure all permits are reviewed and approved before work begins
Precautions, step warnings, Hold Points	Steps not followed or ignored	Increased risk of accidents or injuries	Human error or negligence	Conduct thorough pre-job briefings and enforce adherence to procedures
Personal Protective Equipment (PPE)	PPE not used or inadequate	Worker injury due to exposure to hazards	Lack of PPE availability or improper training	Verify PPE availability and provide training on proper usage
Work instructions for information	Instructions misunderstood or not followed	Incorrect execution of tasks leading to equipment damage or injury	Poor communication or lack of clarity in instructions	Simplify and clarify work instructions; conduct training sessions
ORNL subject area requirements	Non-compliance with safety standards	Legal and safety repercussions	Unawareness of standards or deliberate non-compliance	Regular audits and training on compliance requirements

Discuss group/individual responsibilities	Miscommunication or unclear roles	Inefficient work execution and increased risk of errors	Lack of team coordination or unclear role definitions	Define roles clearly and conduct team coordination meetings
Follow work instructions & safety procedures	Procedures not followed	Increased risk of accidents or equipment malfunction	Human error or lack of training	Implement strict adherence policies and regular training
Availability/location of materials, tools, etc.	Tools/materials not available or misplaced	Delays in work and potential safety hazards	Poor inventory management or planning	Improve inventory management and planning processes
Response if work cannot be performed as planned	Inadequate response to unforeseen issues	Escalation of safety risks or project delays	Lack of contingency planning	Develop and communicate contingency plans for potential issues
Take a minute before: work start & leaving work area	Failure to pause and assess	Increased risk of errors or accidents	Time pressure or oversight	Encourage a culture of mindfulness and safety checks before starting work
Lockout is under personal control	Lockout procedure not followed	Risk of accidental equipment activation	Human error or lack of training	Reinforce lockout/tagout training and procedures
Exposure Assessment	Inaccurate assessment of exposure risks	Worker health risks due to unrecognized hazards	Insufficient data or oversight	Conduct thorough exposure assessments and regular reviews
Welding/Burning/Hot Work Permit	Permit not obtained or incomplete	Fire hazards and safety risks	Lack of awareness or oversight	Ensure all permits are reviewed and approved before work begins
Electrical Equipment and Tools	Equipment not NRTL listed or improperly inspected	Electrical hazards and equipment failure	Lack of inspection or oversight	Ensure all equipment is inspected and approved by qualified personnel