Work scope details:

Title: Modification of the 3525 Exhaust Fan Shaft Guard/Motor Covers

Work Scope Summary: This work involves modifying the shaft guard and motor covers on the K-20 exhaust fan located in Building 3525. The task includes the removal of existing guards, installation of new guards, and ensuring proper fit and safety compliance during the process.

Key Work Scope Components:

• Removal of existing shaft guards and motor covers

• Fabrication of new guards at the fabrication shop

• Installation of new guards on the K-20 exhaust fan

• Lockout/Tagout procedures for deenergizing the fan

• Use of power tools for grinding and cutting

• Compliance with safety and health regulations

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Exhaust Fan Guard Failure	An exhaust fan guard failed during operation, resulting in debris being ejected into the work area.	Ensure guards are securely installed and regularly inspected for integrity.	N/A
Electrical Shock Incident	A worker received an electrical shock while performing maintenance on a fan without proper lockout procedures.	Strict adherence to lockout/tagout procedures is critical to prevent electrical hazards.	N/A
Lead Paint Removal Exposure	Workers were exposed to lead dust during the removal of lead-based paint without adequate respiratory protection.	Implement proper PPE and ventilation controls when working with hazardous materials.	N/A
Noise-Induced Hearing Loss	A worker suffered hearing loss due to prolonged exposure to high noise levels from grinding operations.	Use hearing protection and monitor noise levels during operations.	N/A
Tool Malfunction Incident	A power tool malfunctioned during use, causing an injury to the operator.	Regular maintenance and inspection of tools are essential to ensure safe operation.	N/A

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Manual Material Handling	Not addressed	Implement team lifting for loads over 50 lbs and provide lifting aids.	N/A	N/A
Noise Exposure	Inadequate hearing protection specified	Require hearing protection with NRR of 28 dB or higher and implement a hearing conservation program.	N/A	N/A
Lead Exposure	Inadequate PPE specified	Require use of respirators and gloves specifically rated for lead exposure.	N/A	N/A
Electrical Hazards	Not addressed	Ensure all electrical tools are NRTL listed and conduct a risk assessment for electrical work.	N/A	N/A
Pinch Points	Not addressed	Conduct a risk assessment for pinch points and provide training on safe practices.	N/A	N/A
Chemical Exposure	Inadequate exposure assessment	Conduct a quantitative exposure assessment for chemical paint strippers used.	N/A	N/A
Ergonomic Hazards	Not addressed	Provide ergonomic training and tools to reduce strain during manual tasks.	N/A	N/A
Working at Heights	Not addressed	Implement fall protection measures if working at heights is required during guard installation.	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 of equipment	Lack of communication or oversight	Ensure all permits are verified and documented before work begins.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
PPE Requirements	PPE not used or inadequate	Increased risk of exposure to hazardous materials	Lack of enforcement or training	Conduct regular training sessions and audits to ensure compliance with PPE requirements.
Work Instructions	Instructions not followed or unclear	Increased risk of accidents or injuries	Vague guidance or insufficient training	Revise work instructions for clarity and conduct pre-job briefings to reinforce understanding.
Communication Processes	Poor communication among team members	Increased risk of errors or accidents	Lack of established communication protocols	Implement a communication plan that includes regular check-ins and updates during the task.
Emergency Response Procedures	Inadequate emergency response plan	Delayed response to incidents	Lack of training or drills	Conduct regular emergency response drills and review procedures with all team members.
Tool Availability	Tools not available or malfunctioning	Delays in work and increased frustration	Poor inventory management	Maintain an inventory of tools and schedule regular maintenance checks to ensure availability.
Training and Competency Verification	Workers not adequately trained	Increased risk of accidents due to lack of knowledge	Inadequate training programs	Develop comprehensive training programs and require competency assessments before task assignment.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Ventilation Controls	Inadequate ventilation during chemical use	Increased exposure to hazardous fumes	Failure to monitor air quality	Install air monitoring systems and ensure adequate ventilation is in place before starting work.