

## **Work scope details:**

**Title:** Mock Up COG HEPA Filter Change Out

**Work Scope Summary:** This work plan outlines the procedures for the mock-up and change-out of COG HEPA filters, including the design and fabrication of necessary tools and equipment. It emphasizes safety measures and controls to mitigate risks associated with the tasks.

### **Key Work Scope Components:**

- Mock-up of the COG HEPA filter enclosure and work platforms
- Design and fabrication of tools and equipment for filter change-out
- Development of methods and techniques for changing out COG HEPA filters
- Preparation for the COG HEPA filter change

## **Relevant previous events and lessons learned:**

Event Title	Event Summary	Lessons Learned	Reference Link
HEPA Filter Change Incident	During a routine HEPA filter change, a worker sustained injuries due to improper lifting techniques, resulting in a back injury.	Emphasize proper manual handling techniques and use of lifting aids to prevent injuries.	<a href="#">N/A</a>
Overhead Crane Failure	An overhead crane malfunctioned while lifting heavy equipment, leading to a near-miss incident.	Regular maintenance and inspection of lifting equipment are crucial to ensure safe operation.	<a href="#">N/A</a>
Fall from Height	A worker fell from an unguarded work platform while performing maintenance at height, resulting in serious injuries.	Implement strict fall protection measures and ensure all workers are trained in fall hazard recognition.	<a href="#">N/A</a>
Electrical Shock Incident	An employee received an electrical shock while using a non-GFCI protected tool in a damp environment.	Ensure all electrical tools are GFCI protected and regularly inspected for safety compliance.	<a href="#">N/A</a>
Pinch Point Injury	A worker's finger was caught in a pinch point while handling a HEPA filter.	Provide training on hazard recognition and ensure proper handling techniques are followed.	<a href="#">N/A</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 a mechanical lifting device for filter handling to minimize manual lifting.	<a href="#">N/A</a>	<a href="#">N/A</a>
Fall Hazards	Inadequate mitigation for work at heights	Ensure use of guardrails and personal fall arrest systems for all work above 4 feet.	<a href="#">N/A</a>	<a href="#">N/A</a>
Electrical Hazards	Not adequately addressed	Require all tools to be inspected for GFCI protection and ensure proper grounding.	<a href="#">N/A</a>	<a href="#">N/A</a>
Pinch Points	Not addressed	Conduct a hazard assessment to identify pinch points and provide training on safe handling techniques.	<a href="#">N/A</a>	<a href="#">N/A</a>
Ergonomic Hazards	Not addressed	Implement ergonomic assessments to minimize strain during manual handling tasks.	<a href="#">N/A</a>	<a href="#">N/A</a>
Noise Exposure	Not addressed	Conduct noise assessments and provide hearing protection if levels exceed OSHA standards.	<a href="#">N/A</a>	<a href="#">N/A</a>
Confined Space	Not addressed	Assess the work area for confined space hazards and implement appropriate entry procedures.	<a href="#">N/A</a>	<a href="#">N/A</a>
Communication Barriers	Inadequate mitigation	Establish clear communication protocols and ensure all team members are briefed on tasks and hazards.	<a href="#">N/A</a>	<a href="#">N/A</a>
Time Pressures	Not addressed	Implement a work schedule that allows adequate time for task completion without rushing.	<a href="#">N/A</a>	<a href="#">N/A</a>
Environmental Conditions	Not addressed	Monitor environmental conditions (temperature, ventilation) and provide necessary controls (fans, heaters).	<a href="#">N/A</a>	<a href="#">N/A</a>

## Failure mode analysis:

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Permit System	Permit not obtained or expired	Work may proceed without safety oversight, leading to accidents	Lack of awareness or oversight	Implement a checklist to verify permits before work begins.
PPE Requirements	PPE not used or inadequate	Increased risk of injury from hazards	Poor training or complacency	Conduct regular training sessions and audits to ensure PPE compliance.
Work Instructions	Instructions not followed or unclear	Increased risk of accidents due to improper procedures	Vague guidance or miscommunication	Revise instructions for clarity and conduct pre-job briefings to ensure understanding.
Communication Processes	Ineffective communication	Misunderstandings leading to unsafe practices	Lack of established protocols	Establish clear communication channels and protocols for reporting hazards.
Emergency Response Procedures	Emergency procedures not followed	Delayed response in case of an incident	Lack of training or drills	Conduct regular emergency drills and training sessions for all personnel.
Tool Availability	Tools not available or inadequate	Delays in work and increased risk of using improvised tools	Poor inventory management	Implement a tool tracking system to ensure availability and condition of tools.

<b>Current Control</b>	<b>Failure Mode of the Control</b>	<b>Effect of Failure</b>	<b>Cause of Failure</b>	<b>Recommended Action</b>
Training and Competency	Inadequate training for workers	Increased likelihood of accidents due to lack of knowledge	Insufficient training programs	Develop comprehensive training programs and require competency verification before work.
Inspection Procedures	Equipment not inspected regularly	Increased risk of equipment failure	Lack of scheduling or responsibility	Establish a regular inspection schedule and assign responsibility for compliance.
Work Area Organization	Cluttered work area	Increased risk of trips and falls	Poor housekeeping practices	Implement a housekeeping protocol to maintain a clean and organized work area.
Fatigue Management	Workers fatigued due to long hours	Decreased alertness and increased risk of accidents	Poor scheduling and workload management	Implement a fatigue management program to monitor and manage worker fatigue levels.