Work scope details:

Title: BL1B Ladder Modification

Work Scope Summary: The work involves cutting off approximately 1.5 to 2 inches from the bottom of the detector entry ladder located in Building 8700, BL1B. This modification is necessary to ensure proper functionality and safety of the ladder for future use.

Key Work Scope Components:

• Cutting and modifying the existing ladder structure

• Filing off any burrs to ensure smooth edges

• Use of tools such as saws and files

• Consultation with Radiation Control Technicians (RCTs) prior to work commencement

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Ladder Collapse Incident	A ladder collapsed during maintenance work, resulting in injuries to the worker.	Ensure proper inspection and maintenance of ladders before use. Implement training on ladder safety and weight limits.	OSHA Ladder Safety
Equipment Failure During Cutting	A cutting tool malfunctioned, causing a worker to sustain a laceration.	Regular maintenance and inspection of tools are essential. Workers should be trained on proper tool usage and safety protocols.	Tool Safety Guidelines
Noise-Induced Hearing Loss Case	Several workers experienced hearing loss due to prolonged exposure to high noise levels during maintenance activities.	Implement mandatory hearing protection and conduct regular noise assessments in work areas.	Hearing Conservation Program
Overhead Work Injury	A worker was injured when a tool fell from above during overhead work.	Establish clear communication and safety zones below overhead work areas. Use tool lanyards to secure tools.	Preventing Falls
Inadequate PPE Usage	A worker was injured due to not wearing required personal protective equipment (PPE) while performing maintenance tasks.	Enforce strict PPE compliance and provide training on the importance of PPE in preventing injuries.	PPE Standards

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Ladder Stability	Not addressed	Conduct a pre-use inspection of the ladder to ensure stability and integrity.	[N/A]	[N/A]
Tool Safety	Not addressed	Implement a tool inspection checklist before use to ensure all tools are in good working condition.	[N/A]	[N/A]
Noise Exposure	Not addressed	Conduct a noise assessment and require hearing protection if noise levels exceed permissible limits.	[N/A]	[N/A]
Ergonomic Risks	Inadequate mitigation	Evaluate work posture and implement ergonomic tools to reduce strain during cutting and filing tasks.	[N/A]	[N/A]
Falling Objects	Not addressed	Establish exclusion zones and use tool lanyards to prevent tools from falling during overhead work.	[N/A]	[N/A]
Lack of Communication	Not addressed	Implement a communication plan to ensure all workers are aware of ongoing activities and potential hazards.	[N/A]	[N/A]
Radiation Exposure	Inadequate mitigation	Ensure RCTs conduct a radiation survey before work begins and provide appropriate monitoring equipment.	[N/A]	[N/A]
Manual Handling	Inadequate mitigation	Train workers on proper lifting techniques and provide lifting aids to minimize manual handling risks.	[N/A]	[N/A]
Time Pressure	Not addressed	Establish realistic timelines for work completion to reduce stress and potential for errors.	[N/A]	[N/A]
Distraction Risks	Not addressed	Implement a "no distraction" policy in the work area during critical tasks.	[N/A]	[N/A]

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
First-Time Task Risks	Not addressed	Provide additional supervision and training for workers performing the task for the first time.	[N/A]	[N/A]

Failure mode analysis:

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Ladder Inspection	Ladder not inspected prior to use	Ladder collapse or instability	Lack of inspection protocol	Implement mandatory pre-use ladder inspections and training on inspection criteria.
Tool Maintenance	Tools not maintained properly	Tool malfunction leading to injury	Inadequate maintenance schedule	Establish a regular maintenance schedule and inspection checklist for all tools.
PPE Compliance	PPE not worn or inadequate	Increased risk of injury	Lack of enforcement or training	Enforce strict PPE compliance and conduct regular training sessions on PPE importance.
Communication Plan	Lack of communication during work	Increased risk of accidents	No established communication protocol	Develop a communication plan that includes regular briefings and check-ins during work.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Noise Monitoring	Noise levels not monitored	Hearing damage over time	Absence of noise assessment	Conduct regular noise assessments and provide hearing protection as needed.
Radiation Monitoring	Radiation levels not monitored	Potential exposure to harmful radiation	Inadequate monitoring protocols	Ensure RCTs conduct radiation surveys and provide monitoring equipment before work begins.
Ergonomic Assessment	Poor ergonomic practices	Musculoskeletal injuries	Lack of ergonomic training	Provide ergonomic training and assess workstations for potential risks.
Manual Handling Training	Workers not trained in manual handling	Increased risk of strains and sprains	Inadequate training programs	Implement comprehensive manual handling training for all workers involved in lifting tasks.
Tool Lanyard Use	Tools not secured	Tools falling and causing injury	Lack of awareness or training	Train workers on the importance of using tool lanyards and establish a policy for their use.
Exclusion Zones	No exclusion zones established	Increased risk of injury to bystanders	Lack of awareness of safety protocols	Clearly mark exclusion zones and communicate their importance to all workers.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Time Management	Unrealistic timelines set	Increased stress and potential errors	Poor planning	Set realistic timelines and allow for adequate breaks to reduce stress.
Distraction Management	Distractions present during work	Increased likelihood of accidents	Lack of focus on safety	Implement a "no distraction" policy and encourage a focused work environment.