Work scope details:

Title: BL5 DD Chopper Shielding Mockup Assembly

Work Scope Summary: The task involves carpenters assembling a wooden mockup of the proposed DD chopper shielding at Building 8705, specifically in the BL5 CNCS area. This mockup will be used for test fitting to ensure proper design and functionality before final installation.

Key Work Scope Components:

• Assembly of a wooden mockup

• Installation of the mockup in the designated area

• Inspection by engineering and instrument teams post-assembly

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Equipment Installation Incident	During the installation of a shielding system, a worker was injured due to a falling tool from an overhead platform.	Ensure proper securing of tools and materials at heights; implement tool tethering systems.	OSHA Tool Safety
Ladder Safety Violation	A worker fell while using an improperly positioned ladder during equipment assembly.	Always inspect ladders before use and ensure they are placed on stable ground; provide ladder safety training.	OSHA Ladder Safety
Confined Space Entry Incident	A worker suffered from heat exhaustion while working in a confined space without proper ventilation.	Ensure adequate ventilation and monitoring of environmental conditions in confined spaces; implement buddy systems.	OSHA Confined Spaces
Electrical Hazard Exposure	A maintenance worker was shocked while working on equipment that had not been properly de-energized.	Always follow lockout/tagout procedures; conduct regular training on electrical safety.	OSHA Lock out/Tagout
Tool Malfunction During Operation	A power tool malfunctioned, causing injury to the operator due to lack of maintenance.	Regular maintenance and inspection of tools are critical; establish a checklist for tool readiness before use.	OSHA Power Tool Safety

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Material Handling	Not addressed	Implement proper lifting techniques training and use of mechanical aids for heavy materials.	N/A	N/A

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Ladder Use	Not addressed	Conduct a pre-use inspection checklist for ladders and provide training on proper ladder setup.	N/A	N/A
Overhead Work	Not addressed	Require tool tethering and hard hats for workers below during overhead assembly tasks.	N/A	N/A
Electrical Hazards	Not addressed	Ensure lockout/tagout procedures are clearly outlined and training is provided before work begins.	N/A	N/A
Confined Space	Not addressed	Assess the area for confined space hazards and ensure ventilation and monitoring equipment is available.	N/A	N/A
Noise Exposure	Not addressed	Provide hearing protection and conduct noise level assessments in the work area.	N/A	N/A
Environmental Conditions	Not addressed	Monitor temperature and provide hydration breaks to prevent heat stress.	N/A	N/A
Human Factors	Vague guidance	Clearly define roles and responsibilities for all team members involved in the assembly process.	N/A	N/A
Tool Operation	Inadequate current mitigation	Ensure all operators are trained on specific tools being used and have a checklist for tool safety.	N/A	N/A
Communication Failures	Not addressed	Establish clear communication protocols, including hand signals or radios for noisy environments.	N/A	N/A
Time Pressures	Not addressed	Set realistic timelines for tasks to avoid rushing and potential safety violations.	N/A	N/A
Distractive Environment	Not addressed	Conduct a pre-work briefing to minimize distractions and ensure focus on the task at hand.	N/A	N/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 necessary safety checks, leading to accidents	Lack of awareness or oversight in permit management	Implement a tracking system for permits with reminders for renewal
PPE Requirements	PPE not used or inadequate	Increased risk of injury from falling objects or other hazards	Lack of enforcement or training on PPE usage	Conduct mandatory PPE training and regular audits of compliance
Work Instructions	Instructions not followed or unclear	Increased risk of accidents due to improper assembly techniques	Vague or incomplete instructions	Develop detailed, step-by-step work instructions with visuals
Communication Processes	Miscommunication among team members	Increased risk of errors and accidents due to unclear roles	Lack of established communication protocols	Implement a communication plan with regular check-ins and updates
Emergency Response Procedures	Inadequate response to emergencies	Delayed response can exacerbate injuries or damage	Lack of training or drills	Conduct regular emergency response drills and training sessions
Tool Availability	Tools not available or malfunctioning	Work delays and increased risk of using improper tools	Poor inventory management	Maintain a tool inventory system and schedule regular maintenance checks
Training and Competency Verification	Workers not adequately trained	Increased risk of accidents due to lack of knowledge	Insufficient training programs	Develop a comprehensive training program with assessments for competency

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Inspection Processes	Inspections not conducted or documented	Hazards may go unaddressed, leading to accidents	Lack of accountability for inspections	Establish a formal inspection schedule with documentation requirements
Environmental Monitoring	Lack of monitoring for environmental hazards	Increased risk of heat stress or exposure to harmful conditions	Inadequate planning for environmental conditions	Implement monitoring systems for temperature, noise, and air quality
Work Area Organization	Cluttered work area	Increased risk of trips, falls, and accidents	Poor housekeeping practices	Establish a housekeeping protocol and assign responsibilities for maintaining order
Tool Safety	Tools not properly maintained	Increased risk of tool failure and injury	Lack of maintenance schedule	Create a maintenance log for all tools and schedule regular inspections
Workload Management	High workload leading to stress	Increased risk of errors and accidents	Poor planning and unrealistic expectations	Assess workload regularly and adjust timelines to ensure manageable tasks

This risk assessment report provides a comprehensive overview of potential hazards associated with the BL5 DD Chopper Shielding Mockup assembly, along with actionable recommendations to mitigate these risks effectively.