

Work scope details:

Title: Replacement of Blemco Controller on Hot Water Side of 8713 Main AHU

Work Scope Summary: This work involves the removal of a failed Blemco controller and its replacement on the hot water side of the 8713 main Air Handling Unit (AHU). The task requires ensuring that all energy sources are properly de-energized and that the new controller is correctly installed and tested.

Key Work Scope Components:

- De-energizing the AHU and verifying power is off
- Removal of the old Blemco controller
- Installation of the new Blemco controller
- Wiring and powering up the new controller
- Monitoring the controller post-installation

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Electrical Shock Incident During Equipment Maintenance	An electrical worker received a shock while replacing a controller due to improper lockout/tagout procedures.	Emphasized the importance of strict adherence to lockout/tagout protocols to prevent accidental energization.	OSHA Lock out/Tagout Standard
Equipment Failure During Installation	A newly installed controller failed shortly after installation due to improper wiring.	Highlighted the need for thorough verification of wiring connections before power restoration.	N/A
Overexertion Injury from Manual Handling	A worker sustained a back injury while lifting a heavy controller without assistance.	Reinforced the necessity of using proper lifting techniques and mechanical aids for heavy loads.	N/A
Near Miss with Falling Tools	Tools fell from an elevated surface during maintenance work, narrowly missing a worker below.	Stressed the importance of securing tools and materials when working at heights or on elevated surfaces.	N/A
Inadequate Communication Leading to Confusion	A lack of clear communication among team members led to a delay in the lockout procedure, resulting in a near miss.	Underlined the need for clear communication protocols and pre-work briefings to ensure all team members are informed.	N/A

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Electrical Shock	Not addressed	Ensure all workers are trained in lockout/tagout procedures and verify compliance before starting work.	OSHA Electrical Safety	N/A
Manual Handling	Not addressed	Implement mechanical lifting aids for the removal and installation of the controller to minimize physical strain.	N/A	N/A
Tool Safety	Not addressed	Require the use of tool lanyards or securing mechanisms to prevent tools from falling during installation.	N/A	N/A
Working at Heights	Not addressed	If any work is performed at height, ensure the use of fall protection systems and proper ladder safety protocols.	OSHA Fall Protection	N/A
Confined Space	Not addressed	Assess the area for confined space hazards and implement necessary precautions if applicable.	N/A	N/A
Ergonomic Risks	Inadequate mitigation	Conduct an ergonomic assessment of the work area to identify and mitigate repetitive motion and awkward postures.	N/A	N/A
Residual Energy	Not addressed	Conduct a thorough check for any potential residual energy sources before beginning work.	N/A	N/A
Communication Failures	Not addressed	Establish a communication plan that includes pre-work briefings and clear roles for each team member.	N/A	N/A

Failure mode analysis:

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Lockout/Tagout Procedure	Permit not obtained or expired	Potential energization of equipment leading to injury	Lack of awareness or oversight	Ensure all permits are reviewed and confirmed before work begins.
PPE Requirements	PPE not used or inadequate	Increased risk of injury from electrical shock or cuts	Complacency or lack of enforcement	Conduct a PPE audit and reinforce the requirement for proper PPE usage.
Work Instructions	Instructions not followed correctly	Improper installation leading to equipment failure	Miscommunication or misunderstanding	Provide hands-on training and review instructions in detail before starting work.
Communication Protocols	Poor communication among team members	Increased risk of accidents due to lack of coordination	Inadequate pre-work briefing	Implement mandatory pre-work briefings to clarify roles and responsibilities.
Emergency Response Plan	Lack of awareness of emergency procedures	Delayed response in case of an incident	Insufficient training or drills	Conduct regular emergency response drills and ensure all workers are familiar with procedures.
Tool Availability	Tools not available or inadequate	Delays in work and potential for using improper tools	Poor inventory management	Maintain an inventory checklist and ensure all necessary tools are available before work starts.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Training and Competency	Workers not adequately trained	Increased likelihood of errors during installation	Insufficient training programs	Develop and implement a comprehensive training program for all workers involved in the task.
Monitoring Procedures	Post-work monitoring not conducted	Failure to identify issues with the new controller	Lack of established protocols	Establish clear post-installation monitoring procedures to ensure proper functionality.

This risk assessment report identifies potential hazards associated with the replacement of the Blemco controller, references relevant historical safety events, and provides specific mitigation recommendations to enhance safety during the work process.