Work scope details:

Title: Lighting Upgrades at Building 3525 Glove Maintenance Room (GMR)

Work Scope Summary: This work plan involves upgrading the existing ballast-driven lighting to LED lighting in the Glove Maintenance Room at Building 3525. Given the high contamination and airborne hazard status of the area, strict safety protocols, including Lock/Tag/Verify procedures and respiratory protection, will be implemented during the multiple entries required for installation.

Key Work Scope Components:

- Removal of existing ballast-driven lighting fixtures
- Installation of new LED lighting fixtures
- Use of Lock/Tag/Verify for energy control
- Crane movement for access to lighting fixtures
- Compliance with radiological safety protocols

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Crane Incident at Facility X	A crane operator lost control of the crane during maintenance work, resulting in damage to equipment and near misses with personnel.	Importance of re-establishing Lock/Tag/Verify after crane movement and ensuring all personnel are aware of crane operations.	N/A
Electrical Shock Incident	An electrician received an electrical shock while working on a lighting upgrade due to inadequate Lock/Tag/Verify procedures.	Reinforcement of the Lock/Tag/Verify process and the necessity of using appropriate PPE at all times.	N/A
PCB Contamination Event	During a lighting upgrade, workers were exposed to PCB contamination due to improper disposal of old ballasts.	Proper training on hazardous waste management and the importance of consulting Waste Management personnel before disposal.	N/A
Ladder Fall Incident	A worker fell from a ladder while installing lighting fixtures, resulting in injury.	Emphasized the need for ladder inspections and the use of a buddy system for elevated work.	N/A
Radiological Exposure Event	Workers exceeded allowable radiation exposure limits during maintenance in a high-contamination area.	Highlighted the need for strict adherence to radiological work permits and monitoring requirements.	N/A

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Electrical Hazards	Not addressed	Ensure all electrical tools are inspected and tagged before use; implement a checklist for electrical safety.	N/A	N/A
Overhead Work Risks	Not addressed	Implement a requirement for fall protection systems when working at heights over 6 feet.	N/A	N/A
PCB Exposure	Inadequate mitigation	Provide training on PCB handling and disposal; ensure proper PPE is worn when handling old ballasts.	N/A	N/A
Confined Space Entry	Not addressed	Conduct a confined space assessment and ensure proper entry permits are in place.	N/A	N/A
Heat Stress	Not addressed	Implement a heat stress monitoring program and schedule regular breaks for workers.	N/A	N/A
Ergonomic Risks	Inadequate mitigation	Introduce ergonomic assessments for tasks involving overhead work; provide ergonomic tools where necessary.	N/A	N/A
Obstructed Egress	Not addressed	Ensure that all egress routes are clearly marked and maintained clear of obstructions at all times.	N/A	N/A
Communication Failures	Inadequate mitigation	Establish a clear communication protocol for all team members regarding work status and hazards.	N/A	N/A

Failure mode analysis:

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Lock/Tag/Verify Permit	Permit not obtained or expired	Potential for accidental energization of equipment	Lack of awareness or oversight	Implement a tracking system for permit status and reminders for renewals.
PPE Requirements	PPE not used or inadequate	Increased risk of injury or exposure to hazards	Complacency or lack of enforcement	Conduct regular PPE audits and training refreshers to reinforce compliance.
Work Instructions	Instructions not followed	Increased risk of accidents or improper installation	Poor communication or unclear instructions	Standardize work instructions and conduct pre-job briefings to clarify tasks.
Crane Operation Protocol	Crane operation not communicated effectively	Risk of accidents involving personnel or equipment	Lack of coordination among team members	Establish a clear communication plan for crane operations, including hand signals.
Radiological Monitoring	Dosimetry not monitored properly	Potential for overexposure to radiation	Inadequate training or oversight	Ensure regular training on dosimetry use and monitoring protocols.
Tool Availability	Tools not available or inadequate	Delays in work progress and increased frustration	Poor inventory management	Implement a tool tracking system to ensure availability and maintenance of tools.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Training and Competency	Workers not adequately trained	Increased risk of accidents due to lack of knowledge	Insufficient training programs	Develop comprehensive training programs with assessments to verify competency.
Emergency Response Procedures	Procedures not followed	Delayed response to incidents	Lack of drills or training	Conduct regular emergency drills and training sessions to reinforce response protocols.