Work scope details:

Title: Installation and Removal of Personnel Contamination Monitors

Work Scope Summary: This work plan outlines the installation and removal of personnel contamination monitors, specifically the Canberra Argos -5B, across multiple facilities. The tasks include the initial setup, calibration, and ensuring compliance with safety protocols during the operation.

Key Work Scope Components:

• Installation and removal of Canberra Argos -5B contamination monitors

• Initial setup and calibration of the monitors

• Work performed in various buildings, including Bldg 3025E and EL220

• Compliance with radiological safety protocols and documentation requirements

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Contamination Incident at XYZ Facility	A contamination incident occurred during the installation of radiation detection equipment, leading to personnel exposure.	Importance of thorough training and adherence to safety protocols to prevent contamination.	NRC Event Notification
Equipment Failure During Calibration	A contamination monitor failed during calibration, resulting in a delay and potential exposure risk.	Regular maintenance and pre-use checks are essential to ensure equipment reliability.	[N/A]
Improper PPE Usage in Radiological Work	Workers were found not wearing appropriate PPE during a monitoring task, leading to potential exposure.	Reinforcement of PPE requirements and regular audits of compliance are necessary.	OSHA PPE Standards
Inadequate Training on Equipment Use	A worker was injured due to improper handling of a contamination monitor during installation.	Comprehensive training programs must be established and regularly updated.	[N/A]
Lack of Emergency Response Planning	An emergency situation arose during work, and the response was uncoordinated, leading to confusion.	Clear emergency response plans and regular drills are critical for safety.	[N/A]

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Radiological Exposure	Not addressed	Implement continuous monitoring for radiation levels during installation.	[N/A]	[N/A]

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Equipment Failure	Not addressed	Establish a pre-use checklist for equipment to ensure functionality before use.	[N/A]	[N/A]
Improper PPE Usage	Not addressed	Mandate PPE audits and provide training on proper usage specific to radiological work.	OSHA PPE Standards	[N/A]
Manual Handling Injuries	Not addressed	Provide training on safe lifting techniques and use of mechanical aids.	[N/A]	[N/A]
Electrical Hazards	Inadequate mitigation	Ensure all electrical tools are inspected and tagged before use; provide training on electrical safety.	OSHA Electrical Safety	[N/A]
Confined Space Risks	Not addressed	Identify and assess any confined spaces prior to work; implement a confined space entry program.	[N/A]	[N/A]
Noise Exposure	Not addressed	Conduct noise assessments and provide hearing protection where necessary.	[N/A]	[N/A]
Environmental Conditions	Not addressed	Monitor temperature and humidity levels; provide appropriate PPE for environmental conditions.	[N/A]	[N/A]
Time Pressure	Not addressed	Schedule work to allow adequate time for tasks without rushing; implement a work pacing policy.	[N/A]	[N/A]
Communication Failures	Inadequate mitigation	Establish clear communication protocols and conduct briefings before work.	[N/A]	[N/A]
Overconfidence	Not addressed	Implement a buddy system to encourage peer checks and discussions about task risks.	[N/A]	[N/A]
First-Time Task Risks	Not addressed	Pair inexperienced workers with experienced mentors during initial tasks.	[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	Lack of awareness or oversight	Implement a tracking system for permit renewals and approvals.
PPE Requirements	PPE not used or inadequate	Increased risk of exposure to contamination	Lack of enforcement or training	Conduct regular PPE training and audits to ensure compliance.
Work Instructions	Instructions not followed	Potential for accidents or contamination	Vague or unclear instructions	Revise work instructions to ensure clarity and comprehensiveness.
Communication Protocols	Miscommunication among team members	Increased risk of errors and accidents	Lack of established protocols	Establish mandatory pre-job briefings to clarify roles and responsibilities.
Emergency Response Procedures	Emergency plan not followed	Delayed response to incidents	Lack of training or drills	Conduct regular emergency response drills to reinforce procedures.
Tool Availability	Tools not available or inadequate	Work delays and increased risk of accidents	Poor inventory management	Implement a tool tracking system to ensure availability and readiness.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Training and Competency Verification	Inadequate training for personnel	Increased risk of accidents and contamination	Lack of structured training programs	Develop a comprehensive training program with regular updates and assessments.
Equipment Maintenance	Equipment not maintained or inspected	Increased risk of equipment failure	Lack of scheduled maintenance	Implement a routine maintenance schedule and documentation process.
Work Area Inspections	Work area not inspected for hazards	Unidentified hazards leading to accidents	Inconsistent inspection practices	Establish a checklist for pre-work area inspections.
Incident Reporting	Incidents not reported or documented	Repeated incidents due to lack of awareness	Poor reporting culture	Foster a culture of safety where reporting is encouraged and rewarded.

This risk assessment report provides a comprehensive analysis of potential hazards associated with the installation and removal of personnel contamination monitors, along with actionable recommendations to mitigate these risks effectively.