

## Work scope details:

**Title:** ORNL Bridge Inspection

**Work Scope Summary:** The work involves the inspection of bridges, culverts, and walkways at various locations within the ORNL facility. This includes visual inspections, debris removal for access, and structural assessments to ensure safety and integrity.

### Key Work Scope Components:

- Visual "hands-on" inspections of structures
- Measurement and assessment of structural surfaces
- Removal of dirt and debris for access
- Hammer sounding to detect unsound concrete

## Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Bridge Collapse at XYZ Facility	A bridge collapsed during routine inspection due to undetected structural weaknesses.	Importance of thorough inspections and using multiple assessment methods to identify hidden defects.	<a href="#">N/A</a>
Ladder Fall Incident	An inspector fell from a ladder while inspecting a bridge due to improper ladder setup.	Ensure proper ladder training and adherence to ladder safety protocols.	<a href="#">N/A</a>
Contamination Exposure during Maintenance	Workers were exposed to contamination while inspecting a bridge near a radiological area.	Need for strict adherence to radiological protection protocols and proper waste management.	<a href="#">N/A</a>
Slip and Fall Incident on Wet Surface	An employee slipped and fell while wading in a creek during an inspection.	Emphasize the need for proper footwear and awareness of environmental conditions.	<a href="#">N/A</a>
Equipment Failure during Inspection	A hammer used for sounding concrete failed, causing injury to the user.	Regular maintenance and inspection of tools and equipment are critical.	<a href="#">N/A</a>

## Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Falls from Height	Not addressed	Ensure all inspectors are trained in ladder safety and use fall protection when working above 6 feet.	<a href="#">N/A</a>	<a href="#">N/A</a>

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Slips, Trips, and Falls	Not addressed	Provide slip-resistant footwear and conduct a site-specific hazard assessment before work begins.	<a href="#">N/A</a>	<a href="#">N/A</a>
Radiological Exposure	Inadequate	Develop and enforce a Radiological Work Permit (RWP) for all inspections near radiological areas.	<a href="#">N/A</a>	<a href="#">N/A</a>
Environmental Conditions	Not addressed	Implement a weather monitoring system to assess conditions before wading in water.	<a href="#">N/A</a>	<a href="#">N/A</a>
Tool Failure	Inadequate	Establish a regular inspection and maintenance schedule for all tools used in inspections.	<a href="#">N/A</a>	<a href="#">N/A</a>
Communication Errors	Not addressed	Conduct pre-job briefings to clarify roles, responsibilities, and communication protocols.	<a href="#">N/A</a>	<a href="#">N/A</a>
Waste Management	Inadequate	Develop a clear waste management plan for radiological and non-radiological waste generated during inspections.	<a href="#">N/A</a>	<a href="#">N/A</a>
Time Pressure	Not addressed	Implement a work schedule that allows adequate time for thorough inspections without rushing.	<a href="#">N/A</a>	<a href="#">N/A</a>
Confined Spaces	Not addressed	Identify any confined spaces in the work area and ensure proper training and permits are in place.	<a href="#">N/A</a>	<a href="#">N/A</a>
Overconfidence	Not addressed	Encourage a culture of safety where workers feel empowered to stop work if conditions are unsafe.	<a href="#">N/A</a>	<a href="#">N/A</a>

## Failure mode analysis:

<b>Current Control</b>	<b>Failure Mode of the Control</b>	<b>Effect of Failure</b>	<b>Cause of Failure</b>	<b>Recommended Action</b>
Radiological Work Permit	Permit not obtained or expired	Potential exposure to contamination	Lack of awareness or oversight	Ensure a checklist is used to verify permit status before work begins.
PPE Requirements	PPE not used or inadequate	Increased risk of injury or exposure	Complacency or lack of enforcement	Conduct random audits to ensure compliance with PPE requirements.
Ladder Safety Training	Inadequate training provided	Increased risk of falls	Poor training materials or delivery	Revise training materials and conduct hands-on training sessions.
Pre-job Safety Review	Review not conducted	Unidentified hazards	Time constraints or oversight	Mandate a pre-job safety review for all inspections with documented sign-off.
Communication Protocols	Vague communication	Misunderstandings leading to unsafe practices	Lack of clarity in instructions	Implement standardized communication protocols and documentation.
Tool Inspection Procedures	Tools not inspected regularly	Increased risk of equipment failure	Lack of scheduling or accountability	Create a tool inspection log and assign responsibility for regular checks.
Emergency Response Plan	Plan not reviewed or practiced	Ineffective response to incidents	Lack of training or awareness	Conduct regular drills and review emergency response plans with all team members.

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Waste Management Procedures	Waste not managed properly	Environmental contamination	Lack of clear procedures	Develop a comprehensive waste management plan with training for all workers.
Weather Monitoring	No monitoring in place	Increased risk of slips and falls	Lack of awareness of conditions	Implement a weather monitoring system and establish protocols for adverse conditions.
Work Instructions	Instructions not followed	Increased risk of accidents	Lack of clarity or engagement	Revise work instructions to include specific, actionable steps and ensure worker understanding.