Work scope details:

Title: BL12 N-Helix Installation

Work Scope Summary: - The work involves the installation of N-Helix components, which are likely part of a larger system or infrastructure project. This task requires careful handling and precise installation to ensure proper functionality and integration with existing systems.

Key Work Scope Components: - Installation of N-Helix components - Coordination with existing systems - Ensuring proper functionality - Precise handling and integration - Compliance with installation standards

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference link
High Voltage Electrician Injury on Q4000	A high voltage electrician suffered multiple repetitive motion injuries while working on the Q4000, a semi-submersible rig owned and operated by Helix Energy Solutions Group. The lawsuit alleges that the rig was unseaworthy and that Helix failed to provide a safe working environment, raising concerns about component integration, system coordination, and precise handling on the installation.		Link
Chemical Process Industry Case Study	A case study in a chemical process industry analyzed 15 incident reports from workplace accidents that occurred in 2023, focusing on functionality compliance and system coordination among technical and production staff. The study found delayed implementation of engineering controls and poor integration of corrective actions into production processes, with organizational and technical barriers cited as causes for the recurrence of incidents.		Link

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference link	SBMS Link
Ergonomic Conditions	Not mentioned	Conduct exposure assessments, evaluate workstations and postures, diversify activities, specify PPE, use special tools, implement stretch breaks and worker rotation	N/A	Link

Repetitive Motion Injuries	Not mentioned	Implement engineering and administrative controls to limit exposure to ergonomic risk factors, incorporate proper body mechanics and neutral postures	OSHA Ergonomics, Minot State Ergonomics, OCME Repetitive Motion Injuries	Link
Poor Component Integration	Not mentioned	Evaluate and improve integration processes to ensure compatibility and functionality of components	Weblio Potential	Link
Time Pressures	Not mentioned	Implement time management strategies, prioritize tasks, and ensure adequate staffing to manage workload	OSHA Safety Management, UTexas Hierarchy of Controls	Link
Distractive Environment	Not mentioned	Minimize environmental distractions, implement focused work zones, and provide training on maintaining concentration	Indeed Career Advice, Ramechanic Safety Technology	Link
High Workload	Not mentioned	Balance workload through task distribution, provide adequate breaks, and ensure sufficient resources and staffing	OSHA Safety Management, Toolkitx Workplace Hazards	Link
Vague Guidance	Not mentioned	Provide clear, detailed, and specific guidance and procedures to ensure understanding and compliance	My Safety Thoughts, ChemEngOnline Hazard Communication	Link
Radiological Hazards	Not mentioned	Implement radiological protection measures, conduct regular monitoring, and provide training on radiological safety	Hazardex Radiological Protection, OSHA Radiological Publication	Link

Failure mode analysis:

Current control	Failure mode of the control	Effect of Failure	Cause of Failure	Recommended action

Written permits for the work activity	Permit not obtained or invalid	Work halted, potential legal issues	Miscommunication or oversight	Ensure permits are reviewed and validated before work begins
Precautions, step warnings, Hold Points	Steps not followed or ignored	Increased risk of accidents or errors	Lack of awareness or training	Conduct thorough training and enforce adherence to procedures
Personal Protective Equipment (PPE)	PPE not used or inadequate	Injury to personnel	Lack of enforcement or availability	Regular checks and enforcement of PPE usage
Work instructions for information	Instructions misunderstood or not followed	Incorrect installation, system malfunction	Poor communication or unclear instructions	Simplify and clarify instructions, conduct briefings
ORNL subject area requirements	Non-compliance with standards	Regulatory penalties, unsafe conditions	Lack of understanding or oversight	Regular audits and compliance checks
Discuss group/individual responsibilities	Roles unclear or ignored	Inefficient work, increased risk of errors	Poor communication or lack of leadership	Clearly define roles and responsibilities, conduct briefings
Follow work instructions & safety procedures	Procedures not followed	Increased risk of accidents or errors	Lack of enforcement or understanding	Regular training and monitoring of compliance
Availability/location of materials, tools	Materials/tools not available or misplaced	Delays in work, potential safety hazards	Poor planning or organization	Conduct pre-work checks and organize materials/tools efficiently
Response if work cannot be performed as planned	Inadequate response to unforeseen issues	Work delays, increased risk of accidents	Lack of contingency planning	Develop and communicate contingency plans
Potential error traps with the job	Error traps not identified or mitigated	Increased risk of accidents or errors	Lack of foresight or experience	Conduct risk assessments and implement mitigation strategies
Take a minute before: work start & leaving work area	Failure to pause and assess	Increased risk of accidents or errors	Time pressures or oversight	Encourage mindfulness and situational awareness
Work Hand-off / Turnover	Poor communication during hand-off	Misunderstandings, errors in work	Lack of communication or documentation	Implement structured hand-off procedures and documentation

Time pressures	Rushed work leading to errors	Increased risk of accidents or errors	Poor planning or unrealistic deadlines	Implement realistic timelines and manage workload effectively
Distractive environment	Distractions leading to errors	Increased risk of accidents or errors	Poor work environment or lack of focus	Minimize distractions and improve work environment
High workload	Overburdened workers leading to errors	Increased risk of accidents or errors	Poor resource allocation or planning	Balance workload and allocate resources effectively
First time evolution	Inexperience leading to errors	Increased risk of accidents or errors	Lack of experience or training	Provide additional training and supervision
Vague guidance	Misunderstandings leading to errors	Increased risk of accidents or errors	Poor communication or documentation	Clarify guidance and improve communication channels
Overconfidence	Complacency leading to errors	Increased risk of accidents or errors	Lack of awareness or experience	Encourage humility and continuous learning
Imprecise communications	Misunderstandings leading to errors	Increased risk of accidents or errors	Poor communication or documentation	Improve communication channels and documentation
Work stress	Stress leading to errors	Increased risk of accidents or errors	Poor work environment or workload	Implement stress management strategies and improve work environment