

Work scope details:

Title: Routine Maintenance and Services for 2519 Air Compressor 2

Work Scope Summary: This work plan outlines routine maintenance activities for the 2519 Air Compressor 2, which includes tasks such as valve repairs, electrical troubleshooting, and piping system maintenance. The maintenance will involve various skilled trades including millwrights, electricians, and pipefitters to ensure the safe and efficient operation of the air compressor system.

Key Work Scope Components:

- Millwright tasks: valve actuator repair, coolant refilling, air end replacement.
- Pipefitting and welding tasks: valve and gasket replacement, piping repairs, pressure vessel testing.
- Electrical tasks: voltage readings, troubleshooting, and electrical maintenance.
- Instrumentation and control tasks: calibrations and troubleshooting.
- Laborer tasks: general cleanup and material handling.
- Insulator tasks: insulation removal and replacement.

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Air Compressor Explosion	An air compressor exploded during maintenance due to a failure to relieve pressure before servicing.	Always ensure pressure relief devices are inspected and properly utilized before maintenance.	N/A
Electrical Shock Incident	An electrician received a shock while troubleshooting a panel that had not been properly locked out.	Implement strict lockout/tagout (LOTO) procedures and ensure all personnel are trained on LOTO protocols.	N/A
Asbestos Exposure During Maintenance	Workers were exposed to asbestos while replacing gaskets without proper PPE.	Ensure all workers are trained on asbestos handling and provided with appropriate PPE before commencing work.	N/A
Confined Space Fatality	A worker died due to lack of ventilation while performing maintenance in a confined space.	Always conduct air quality assessments and ensure proper ventilation before entering confined spaces.	N/A
Noise-Induced Hearing Loss	Workers reported hearing loss after prolonged exposure to high noise levels during compressor operation.	Implement noise monitoring and provide hearing protection to workers exposed to high noise levels.	N/A

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference Link	SBMS Link
Pressure hazards	Not addressed	Ensure pressure relief devices are inspected and utilized before maintenance.	N/A	N/A
Electrical hazards	Inadequate LOTO procedures	Implement strict LOTO protocols and training for all electrical tasks.	N/A	N/A
Asbestos exposure	Not addressed	Provide asbestos awareness training and PPE for workers handling gaskets.	N/A	N/A
Confined spaces	Not addressed	Conduct air quality assessments and ensure ventilation before entry.	N/A	N/A
Noise exposure	Inadequate noise monitoring	Implement regular noise assessments and provide hearing protection.	N/A	N/A
Manual handling	Not addressed	Provide training on proper lifting techniques and use of lifting aids.	N/A	N/A
Tool safety	Inadequate tool inspections	Establish a routine tool inspection schedule and training on tool safety.	N/A	N/A
Communication	Vague communication protocols	Implement clear communication protocols and ensure all personnel are briefed.	N/A	N/A

Failure mode analysis:

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Lockout/Tagout procedures	LOTO not performed or inadequate	Risk of electrical shock or equipment startup	Lack of training or awareness	Conduct regular LOTO training and audits.
PPE requirements	PPE not worn or inadequate	Increased risk of injury from exposure to hazards	Lack of enforcement or training	Implement strict PPE compliance checks.

Current Control	Failure Mode of the Control	Effect of Failure	Cause of Failure	Recommended Action
Work instructions	Instructions not followed or unclear	Increased risk of accidents or injuries	Poor communication or training	Review and clarify work instructions regularly.
Emergency response procedures	Procedures not followed	Delayed response to incidents	Lack of drills or training	Conduct regular emergency response drills and training.
Tool availability	Tools not available or in poor condition	Increased risk of accidents	Inadequate inventory management	Establish a tool inventory and maintenance schedule.
Training and competency verification	Workers not adequately trained	Increased risk of accidents	Inconsistent training practices	Standardize training programs and verify competency regularly.
Communication protocols	Poor communication among team members	Increased risk of accidents	Lack of established communication channels	Implement a communication plan and conduct briefings.
Equipment inspection	Equipment not inspected before use	Increased risk of equipment failure	Inadequate inspection protocols	Establish a routine equipment inspection schedule.

This risk assessment report provides a comprehensive overview of potential hazards associated with the work plan for the 2519 Air Compressor 2. It identifies relevant historical safety events, missing hazards, and failure modes, along with actionable recommendations to enhance safety and compliance.