

Work scope details:

Title: BL11B Goniometer PM

Work Scope Summary: - The work involves performing semi-annual maintenance by lubricating the kinematic mounts and lift rails of the BL11B Goniometer to ensure its optimal performance and longevity.

Key Work Scope Components: - Semi-annual maintenance schedule - Lubrication of kinematic mounts - Lubrication of lift rails - Ensuring optimal performance of the goniometer - Extending equipment longevity

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference Link
Mass Properties Equipment Failed Surveillance Requirement (SR) Step During Scheduled Preventive Maintenance (PM)	On July 1, 2015, Pantex determined that the POI-3500 Mass Properties Process Equipment was degraded due to the equipment failing the over-speed verification during semi-annual preventive maintenance. The equipment failed the over-speed control verification step, interrupting power to the drive motor. The vendor recommended cleaning the sensors, but the equipment failed again. It was tagged out for further analysis.	Ensure thorough testing and verification of equipment during maintenance. Engage vendors promptly for troubleshooting.	Link
Pulley Failure Event at SURF	On June 25, 2020, during a lifting operation inside a water tank, a pulley assembly failed due to lack of pre-use inspection. The pulley came apart and fell, but no injuries occurred. The operation was stopped, and an investigation was launched.	Conduct pre-use inspections of all equipment and assemblies. Ensure proper communication and verification during lifting operations.	Link
Maintenance Mechanic Fatality	On October 15, 1997, a maintenance mechanic was killed by a falling platform of a vertical lift conveyor after the motor was removed, releasing the electric braking mechanism. The mechanical brakes failed, causing the platform to fall.	Ensure all safety mechanisms are engaged and tested before maintenance. Properly support platforms and equipment during maintenance activities.	Link

Missing Hazards:

Hazard	Missing or Inadequate Mitigation in Current Work Control Document	Recommended Mitigation for Revision	Reference link	SBMS Link

Ergonomic conditions (contact stress, vibration, posture)	Not addressed	Conduct exposure assessments, evaluate workstations and postures, implement PPE, use special tools, schedule stretch breaks, and rotate workers	N/A	Link
Equipment failure during maintenance	Not addressed	Implement regular inspection and preventive maintenance schedules	Envista Forensics	Link
Lack of pre-use inspection	Not addressed	Establish pre-use inspection protocols and ensure compliance	OSHA	Link
Falling equipment/platform	Not addressed	Implement fall prevention measures and conduct regular inspections	Safety and Health Magazine	Link
Time pressures and distractive environment	Not addressed	Identify and mitigate factors causing time pressure, implement interim controls	OSHA	Link
Improper handling of cryogenic and pneumatic lines	Not addressed	Develop guidelines for handling, provide appropriate PPE, and post warning signs	NIH	Link
Inadequate communication and verification	Not addressed	Improve hazard communication practices, ensure complete Safety Data Sheets, and enhance employee training	The Safety Geek	Link
Improper support of equipment during maintenance	Not addressed	Develop procedures for equipment support during maintenance and emergency scenarios	HSENI	Link

Failure mode analysis:

Current control	Failure mode of the control	Effect of Failure	Cause of Failure	Recommended action
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Written permits for the work activity	Permit not obtained or expired	Unauthorized work leading to safety hazards	Oversight or lack of awareness of permit requirements	Implement a permit tracking system and regular audits
Personal Protective Equipment (PPE)	PPE not used or inadequate	Increased risk of injury to personnel	Lack of enforcement or awareness	Conduct PPE training and enforce compliance checks
Work instructions	Instructions not followed or misunderstood	Incorrect maintenance leading to equipment damage	Vague instructions or lack of training	Revise instructions for clarity and provide training sessions
Emergency Response Plan	Inadequate response to emergencies	Increased severity of incidents	Lack of training or unclear procedures	Regular emergency drills and clear communication of procedures
Team Lifting Guidelines	Improper lifting techniques	Injury to personnel or damage to equipment	Lack of training or supervision	Provide lifting training and supervision during tasks
COVID-19 Precautions	Non-compliance with mask-wearing and social distancing	Increased risk of virus transmission	Complacency or lack of enforcement	Regular reminders and enforcement of COVID-19 protocols
Ergonomic Evaluation	Poor workstation setup	Long-term health issues for workers	Lack of ergonomic assessment	Conduct regular ergonomic assessments and adjust workstations accordingly
Electrical Safety Procedures	Failure to disconnect power before maintenance	Risk of electrical shock or equipment damage	Lack of adherence to safety protocols	Implement a lockout/tagout system and safety training