Work scope details:

Title: CENTRAL ALARM STATION Operations and Safety Plan

Work Scope Summary: - The work involves the operation of the Central Alarm Station (CAS) by an operator who performs tasks following the guidelines and protocols outlined in the Protective Force (PF) Command Media.

Key Work Scope Components: - Operation of the Central Alarm Station (CAS) - Adherence to Protective Force (PF) Command Media - Monitoring and responding to alarms - Ensuring safety and security protocols are followed - Coordination with security personnel

Relevant previous events and lessons learned:

Event Title	Event Summary	Lessons Learned	Reference link
Medical Transport Initiates Protective Force Response	Protective Force and Emergency Response protocols must establish a balance between the protection of life and mitigation against the potential diversion of materials.	Emphasizes the need for balancing life protection with material security during emergency responses.	Link
Management Concern; Lack of Awareness of Security Training Results in Initiation of Security Response	During a training exercise, security police officers at TA-55 overheard training communication and initiated a security response, mistaking it for a real event. The exercise was suspended after realizing the mistake.	Highlights the importance of clear communication and awareness during training to prevent unnecessary security responses.	Link
High-rise Office Building Incident	A security guard died from smoke inhalation while investigating a fire alarm, underscoring the critical role of operator tasks and safety protocols.	Demonstrates the hazardous consequences of failures in emergency procedures and the importance of safety protocols.	Link
Texas City Refinery Explosion	Alarm management failures, including unreliable alarms and excessive operator workload, led to delayed responses, worsening the explosion.	Highlights the need for reliable alarm systems and manageable operator workloads to prevent industrial accidents.	Link
Channel Tunnel Fire	Insufficient staffing during an emergency led to a breakdown in security coordination and operator overload.	Stresses the importance of adequate staffing levels for managing emergencies effectively.	Link

Missing Hazards:

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

Ergonomic Hazards	No mention of ergonomic assessments or controls	Conduct ergonomic assessments, implement workstation evaluations, diversify activities, and provide special tools and PPE.	N/A	Link
Emergency Response Protocols	No specific protocols for emergency response	Develop and implement comprehensive emergency response protocols, including training and periodic drills.	N/A	Link
Alarm Management Failures	No mention of alarm management	Implement effective alarm management systems to prevent alarm fatigue and ensure timely operator response.	exida, ScienceDirect, Empowered Automation	Link
Insufficient Staffing	No mention of staffing levels or controls	Ensure adequate staffing levels, restrict access to hazardous areas, and assign tasks to qualified personnel.	Wikipedia, OSHA, CCOHS	Link
Communication Errors	No mention of communication protocols	Develop clear communication protocols, including training and hazard communication programs.	Factors (Chap24-WML-5thEdHandbookHFErev(2021)inpress.pdf), Safety Human EASA, NASA	Link
Operator Workload and Stress	No mention of workload or stress management	Implement workload assessments, stress management programs, and provide adequate breaks and support.	OSHA, SafetyCulture, DOL Blog	Link
Shift Fatigue	No mention of shift fatigue management	Implement shift scheduling practices to minimize fatigue, provide rest breaks, and monitor employee well-being.	N/A	Link
Noise and Flashing Lights	No mention of flashing lights hazards	Assess and mitigate risks associated with flashing lights, especially for photosensitive individuals.	Wikipedia, OSHA, Arnold Clark	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 incorrect	Unauthorized work leading to safety hazards	Miscommunication or oversight in permit process	Implement a checklist for permit verification before work starts
Personal Protective Equipment (PPE)	PPE not used or inadequate	Increased risk of injury to personnel	Lack of awareness or availability of PPE	Conduct mandatory PPE training and ensure availability of PPE
Work instructions	Instructions not followed or misunderstood	Unsafe work practices leading to accidents	Vague or complex instructions	Simplify and clarify work instructions; conduct pre-job briefings
ORNL subject area requirements	Non-compliance with requirements	Regulatory violations and potential fines	Lack of understanding or updates on requirements	Regular training and updates on subject area requirements
Discuss group/individual responsibilities	Roles not clearly defined	Confusion and inefficiency in task execution	Poor communication or lack of leadership	Clearly define roles and responsibilities in pre-job meetings
Follow work instructions & safety procedures	Procedures not adhered to	Increased likelihood of accidents	Time pressure or complacency	Reinforce importance of following procedures through regular audits
Availability/location of materials, tools, etc.	Materials/tools not available or misplaced	Delays and unsafe improvisation	Poor inventory management	Implement an inventory management system and regular checks
Response if work cannot be performed as planned	Inadequate response plan	Unsafe conditions or delays	Lack of contingency planning	Develop and communicate a contingency plan for unforeseen issues
Potential error traps	Error traps not identified	Increased risk of human error	Lack of awareness or experience	Conduct error trap analysis and training sessions
Stop Work: Observe an unsafe act	Unsafe act not stopped	Imminent danger to personnel	Lack of empowerment or awareness	Empower workers to stop work and report unsafe conditions

Emergency Response	Inadequate emergency response	Increased severity of incidents	Lack of training or unclear procedures	Regular emergency drills and clear communication of procedures
Maintain physical security controls	Security controls breached	Unauthorized access and potential threats	Inadequate security measures or vigilance	Enhance security measures and conduct regular security audits
Ergonomics-Work on Computer	Poor ergonomic practices	Musculoskeletal disorders	Lack of ergonomic awareness or equipment	Provide ergonomic training and equipment adjustments
Shift Fatigue	Fatigue not managed	Reduced alertness and increased errors	Long shifts or inadequate breaks	Implement shift rotation and mandatory breaks
Stress management	Stress not managed	Reduced performance and increased errors	High workload or poor work-life balance	Provide stress management resources and encourage breaks
Post Work Testing	Testing not conducted or inadequate	Undetected faults leading to future failures	Lack of procedures or oversight	Establish mandatory post-work testing protocols
Job Hazard Evaluation	Hazards not evaluated or mitigated	Increased risk of incidents	Inadequate hazard assessment	Conduct thorough hazard evaluations and implement controls