

**ISMS ASSESSMENT FORM  
ELECTRICAL SAFETY**

**Objective:** Assess the institutional and department/division electrical requirements, policies, procedures, and work practices for both professional and incidental activities by reviewing the roles and responsibilities of line managers, support personnel and workers who are involved in these activities, as well as, the adequacy of compliance with institutional and/or Department/Division qualifications, training requirements, and inspection requirements. Assess the causal analysis process and development and implementation of corrective actions for incidents which have resulted in the ORPS “recurring” category. Review the roles and responsibilities of line managers, support personnel and workers who are involved in the incidents, as well as, the adequacy of the investigation, development of corrective actions, and the verification process of corrective action effectiveness. Assess line management’s understanding of the Laboratory and division/department policies and procedures for working safely. Focus in on the adequacy of electrical requirements and policies within SBMS and how it flows down into lower tiered procedures with concentration on; the planning of electrical work, the implementation of effective hazards controls, and performance of work within those controls.

**1. Line Management Responsibility for Safety**

Guiding Principle #1: *“Line Management Is Directly Responsible for the Protection of the Public, Workers, and the Environment.”*

**a. Criterion 1: Policy and Expectations**

Electrical policies and goals are documented, and initiatives are in progress to improve electrical safety. Review laboratory-wide and department/division initiatives.

**b. Criterion 2: Leadership**

Line management demonstrates a commitment to protect the public and workers from electrical incidents. Line management proactively demonstrates a leadership position in guiding their line organizations, subcontractors, and workers toward integrated safety management. Review Laboratory-wide and department/division performance metrics and conduct interviews of senior and middle managers.

**c. Criterion 3: Worker Empowerment**

Contractor line managers recognize that active participation by workers is essential to maintain and improve the electrical program. Conduct interviews of middle management and workers to ascertain level of participation to improve performance.

**2. Clear Roles and Responsibilities**

Guiding Principle #2: *“Clear Lines of Authority and Responsibility for Ensuring Safety Shall Be Established and Maintained at All Organizational Levels Within the Department and Its Contractors.”*

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**Criterion 1: Clear Lines of Authority and Responsibilities**

Line management defined, documents and maintains clearly delineated roles and responsibilities for electrical that provide a foundation for effectively integrating safety into electrical operations. Conduct interviews with managers/supervisors and workers to determine their understanding of their authorities and responsibilities for performing electrical work safely.

**a. Criterion 2: Defined Responsibilities and Accountability**

Line managers are responsible and accountable for ensuring that electrical work practices are performed in a manner that adequately protects the public, workers, and the environment. Review roles, responsibilities and authorities and accountabilities (R2A2s) of senior managers, middle managers, supervisors, and workers concerning hoisting and rigging.

**b. Criterion 3: Accountability for Performance**

Line managers are accountable for electrical safety performance through performance objectives and appraisal systems. Performance is explicitly tracked and measured, and inadequate performance should have visible and meaningful consequences. Line managers execute actions to attain and continuously improve the safety of electrical. Conduct interviews with line managers and supervisors on accountability for performance.

**3. Competence Commensurate with Responsibilities**

Guiding Principle #3: *“Personnel Shall Possess the Experience, Knowledge, Skills, and Abilities That Are Necessary To Discharge Their Responsibilities.”*

**a. Criterion 1: Staffing and Qualifications**

Line managers and staff demonstrate a high degree of technical competence and a good understanding of the electrical programs. Review SBMS and R2A2s as appropriate for select positions. Conduct interviews with senior managers, facility managers, principal investigators, building managers, supervisors, as appropriate. Review training and qualification programs. Sample the safety training records. Review incidents reports to determine whether staffing and/or qualification were causal factors in electrical incidents.

**b. Criterion 2: Technical Competence**

Workers and managers are technically competent to perform electrical jobs and are appropriately educated and knowledgeable of hazards, vulnerabilities, and risks. Conduct interviews with senior managers, facility managers, principal investigators, as appropriate. Review electrical incidents reports to determine whether technical competence was a causal factor in incidents.

**4. Define the Scope of Work and Balanced Priorities**

Guiding Principle #4: *“Resources Shall be Effectively Allocated To Address Safety, Programmatic, and Operational Considerations. Protecting the Public, the Workers, and the Environment Shall Be a Priority Whenever Activities Are Planned and Performed.”*

Core Function #1: *“Missions are Translated Into Work, Expectations are Set, Tasks Identified and Prioritized, and Resources are Allocated.”*

**a. Criterion 1: Translate Mission into Work; Set Expectations**

Contractors use defined mechanisms to define the scope, schedule and cost of electrical work and to identify and communicate associated risks and hazards.

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Review the electrical work processes and compare expectations in SBMS and division/department procedures for conformance as well as recent electrical events.

**b. Criterion 2: Provide for Integration**

ES&H functions and activities are integrated into program, activity, and work planning at all levels of the line organization. Review SBMS and division/department procedures that demonstrate that ISM is integrated into electrical activities. Conduct interviews of a cross-cut of personnel for their level of understanding.

**5. Identification of Safety Standards and Requirements and Analyze the Hazards**

Guiding Principle #5: *“Before Work Is Performed, the Associated Hazards Shall Be Evaluated and an Agreed Upon Set of Safety Standards Shall Be Established That, if Properly Implemented, Will Provide Adequate Assurance That the Public, the Workers, and the Environment Are Protected from Adverse Consequences.”* Core Function #2: *“Hazards associated with the work are identified, analyzed and categorized.”*

**a. Criterion 1: Hazards Analysis and Work Planning (JHA)**

Prior to the initiation of work, line management identifies, analyzes, and categorizes the hazards associated with the work activity so that the appropriate electrical administrative and engineering controls can be put in place to prevent or mitigate those hazards. Review existing project JHAs for lockout/tag-out (LOTO) requirements, arc-flash calculations in compliance with NFPA-70E and requirements for personal protective equipment (PPE) requirements. Review work processes from SBMS and division/department procedures and compare with recent electrical events and observations, especially skill-of-the-craft determinations.

**b. Criterion 2: Identification of Standards and Requirements**

Line management has identified, communicated, executed, and monitored all applicable DOE requirements, and Federal, state, and local regulations. Review SBMS and division/department for omissions which may have been factors in recent electrical events.

**6. Hazard Controls Tailored to Work Being Performed; Develop and Implement Hazard Controls**

Guiding Principle #6: *“Administrative and Engineering Controls To Prevent and Mitigate Hazards Shall Be Tailored to the Work Performed and Associated Hazards.”* Core Function #3: *“Applicable Standards and Requirements are Identified and Agreed Upon, Controls to Prevent/Mitigate Hazards are Identified, the Safety Envelope Established, and Controls are Implemented.”*

**a. Criterion 1: Identify Controls to Prevent/Mitigate Hazards**

Line management has established processes for identifying and tailoring controls for hazards associated with all electrical activities. Review Laboratory's process for identifying and tailoring controls which may have been less than adequate in recent electrical incidents.

**b. Criterion 2: Establish Safety Controls**

Hazard controls are established based on the understanding of the hazards, vulnerabilities, and risks in the work environment (e.g., nuclear, radiological, chemical, industrial, physical, and natural phenomena). Review Laboratory's

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process for establishing safety controls which may have been less than adequate in recent electrical incidents.

**c. Criterion 3: Implement Controls**

Line management has established methods to implement controls at every level and ensures that controls remain in effect as long as hazards are present. Review Laboratory's investigations and conduct observations to determine if implementation of controls has been less than adequate in recent electrical incidents.

**7. Operations Authorization; Perform Work Within Controls**

Guiding Principle #7: *"The Conditions and Requirements to be Satisfied for Operations Initiated and Conducted Shall Be Clearly Established and Agreed-Upon."*

Core Function #4: *"Readiness is Confirmed and Work is Performed Safely."*

**a. Criterion 1: Confirm Readiness**

Line management has established and implemented processes to confirm that a facility or work process/activity that involves electrical, as well as the work force, are in an adequate state of readiness prior to authorizing the performance of work. Review the Laboratory's process for assuring that work preparation is adequate. Conduct work observation and review documentation at work site. Review recent electrical events to determine whether lack of readiness was a causal factor.

**b. Criterion 2: Operations Authorization**

Line management has assumed the responsibility for ensuring that all electrical operations are authorized at a level commensurate with the hazards and has established work authorization processes for both facility- and activity-level operations. All electrical work activities are subject to authorization based on appropriate review of the preparation and readiness to perform work. Review work processes and sample documentation from activities observed in the field. Review electrical events to determine whether improper authorization was a causal factor.

**c. Criterion 3: Perform Work Safely**

Line managers are responsible for implementing electrical programs in compliance with defined requirements. Line managers ensure that contractors, and subcontractors, execute defined requirements in such a manner that employees, the public, and the environment are protected from adverse consequences. Conduct interviews with senior managers, division directors, supervisors, and workers on procedural compliance and their understanding of the effectiveness of the SBMS and division/department implementation procedures. Review reports to determine when procedural compliance was a factor in electrical incidents.

**8. Provide Feedback and Continuous Improvement**

Core Function #5: *"Feedback Information on the Adequacy of Controls is Gathered, Opportunities for Improving the Definition and Planning of Work are Identified and Implemented, Line and Independent Oversight is Conducted, and, If Necessary Regulatory Enforcement Actions Occur"*

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**a. Criterion 1: Assessment and Measurement of Performance for Continuous Improvement**

Line management has established formalized mechanisms and processes (at the institutional, facility/project, and activity levels) for collecting both qualitative and quantitative information on electrical performance as the basis for informed management decisions to improve performance through assessments, performance measures, and other feedback mechanisms. Conduct interviews with senior and middle managers on the investigation and subsequent tasks associated with electrical incidents. Review reports for technical adequacy.

**b. Criterion 2: Follow-up and Correction of Safety Management System Deficiencies**

Line management has established a formalized process to capture and track electrical -related deficiencies and associated corrective actions. Line management has executed mechanisms, such as independent verification and performance-based evaluations, to ensure that corrective actions are timely, complete, and effective. Review Laboratory's process for determining whether the corrective action management system is effective in reducing the probability of repeat events.

**c. Criterion 3: Lessons Learned**

Line management has established a method to capture electrical related deficiencies, to identify causes and generic applicability, and to disseminate lessons learned within and across organizations. Evaluate process and interview line managers and workers on the use and effectiveness of the lessons learned system.

**Concerns:**

**Findings:**

**Observations:**

**Noteworthy Practices:**

**Records Reviewed:**

**Personnel Interviewed:**

**Work Observations:**

**Signatures:**

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