

Electrical Contract Oversight Representative (COR+)

ESCoP BP#273

Facility: DOE Complex

Best Practice Title: Contract Oversight Representative (COR+)

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Brief Description of Best Practice: This best practice emphasizes the critical role of the Electrical Contract Oversight Representative (COR+) in ensuring subcontractor compliance with safety and health regulations. It advocates enhanced training qualifications for COR+, focusing on specialized electrical safety knowledge, such as NFPA 70E, and a thorough understanding of site-specific requirements. Key strategies include improving communication of contractual obligations, conducting detailed reviews of subcontractor safety plans, implementing comprehensive checklists for compliance tracking, and performing regular audits and field walk-downs. By fostering clear communication and accountability, this approach aims to mitigate risks, enhance safety standards, and promote a compliant work environment in electrical operations.

Why the best practice was used: Implementing this best practice in subcontractor oversight is crucial for enhancing safety compliance, improving communication, and strengthening oversight in electrical operations. By ensuring that subcontractors understand and adhere to safety regulations, we reduce the risk of accidents and violations. Enhanced training for the Contract Oversight Representative (COR+) equips them to effectively monitor practices and enforce compliance, while comprehensive checklists and regular audits promote accountability. Ultimately, this approach fosters a culture of safety and compliance, leading to increased project efficiency and reduced operational risks.

What are the benefits of the best practice: The benefits of this best practice in subcontractor oversight include enhanced safety compliance, which significantly reduces the risk of accidents and violations, thereby fostering a safer work environment. Improved communication of contractual obligations ensures that all parties are aligned on safety standards, minimizing misunderstandings. Strengthened oversight through enhanced training for the Contract Oversight Representative (COR+) equips them to effectively monitor subcontractor practices and enforce compliance with site-specific safety programs. Additionally, the use of comprehensive checklists and regular audits promotes accountability and timely identification of compliance issues. Overall, this best practice

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cultivates a culture of safety and compliance, leading to increased project efficiency and reduced operational risks

What problems/issues were associated with the best practice: One of the primary challenges associated with this best practice in subcontractor oversight is the variability in standards and regulations across different laboratories, which can lead to inconsistencies in implementation. Each lab may operate under distinct interpretations of safety regulations, contractual obligations, and industry standards, creating confusion for subcontractors who may struggle to navigate these differences. This lack of uniformity can result in gaps in compliance, as subcontractors may not fully understand the specific requirements applicable to their work at each site. Additionally, the reliance on a standardized approach may overlook unique site-specific hazards and operational practices, potentially compromising safety and effectiveness. Therefore, while the best practice aims to enhance safety and compliance, it must be adaptable to accommodate the diverse regulatory landscapes of various laboratories.

How the success of the Best Practice was measured: The success of this best practice in subcontractor oversight can be measured through several key performance indicators (KPIs) that reflect improvements in safety compliance and operational efficiency. Metrics such as the reduction in safety incidents and violations among subcontractors, the completion rate of required training programs for both COR+ and subcontractors, and the frequency and outcomes of audits and inspections can provide quantifiable evidence of effectiveness. Additionally, tracking the timely resolution of compliance issues identified during audits and the level of subcontractor understanding of safety requirements, assessed through feedback surveys or evaluations, can further gauge the impact of enhanced communication and training efforts. Ultimately, a comprehensive analysis of these metrics will help determine the overall effectiveness of the best practice in fostering a safer and more compliant work environment.

Description of process experience using the Best Practice: The process experience utilizing this best practice in subcontractor oversight involves a systematic approach that begins with thorough training for the Contract Oversight Representative (COR+) on site-specific safety standards and regulations. This training equips a COR+ to effectively communicate contractual obligations to subcontractors, ensuring clarity and alignment on safety expectations. The implementation of comprehensive checklists facilitates the tracking of compliance and identification of gaps in understanding, while regular audits and field walk-downs provide opportunities for real-time feedback and continuous improvement. Throughout this process, collaboration with Subject Matter Experts (SMEs) enhances oversight and ensures that subcontractors are adequately supported in adhering to safety protocols. Overall, the experience fosters a proactive safety culture, where ongoing communication, accountability, and training contribute to a safer work environment and improved project outcomes.

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This Best Practice represents the consensus understanding of the Electrical Safety Community of Practice (ESCoP) of the EFCOG Worker Safety and Health Subgroup for improving the minimum recommended qualifications for the host site's Contract Oversight Representative (COR+).

INTRODUCTION

Effective management of subcontractors is critical to ensuring compliance with safety and health regulations as outlined in contractual agreements. We have observed a significant gap in the flow of contractual language from the COR+ to subcontractors, resulting in frequent non-compliance and violations. This Best Practice aims to address this issue by proposing clear and comprehensive strategies for improving communication and understanding of contractual requirements among all parties involved. By doing so, we intend to foster a safer and more compliant working environment, thereby mitigating risks and enhancing overall project efficiency.

DISCUSSION

1. Importance of Contractual Compliance

- Ensuring that subcontractors understand and adhere to contractual requirements is essential for maintaining a safe and compliant work environment.
- Regulatory documents like 10 CFR 851 and industry standards set by OSHA provide a framework for safety and health programs, but effective implementation requires clear communication and oversight.
 - COR+ should have a thorough understanding of the contract requirements, whether they are industry-specific or site-specific, to provide precise guidance.

2. Current Challenges

- **Lack of Awareness**
 - Subcontractors often do not thoroughly read or understand the contractual language, leading to non-compliance.
- **Inadequate Training**
 - The site's COR+ may lack the necessary electrical safety training, resulting in missed hazards and unauthorized work. The COR+ must also be cognizant of critical points within the execution of the work where additional Subject Matter Expert (SME) involvement is necessary.
 - Subcontractors' training may not adequately address requirements from source documentation (i.e., NFPA 70E).
- **Communication Gaps**

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- The flow down of information from the COR+ to subcontractors is often insufficient, causing confusion and violations.
- Flow down of information from the subcontractor to lower-tier contractors is often inadequate or missing entirely.

Proposed Solutions for Enhancing Subcontractor Compliance

1. Enhanced Training for Contract Oversight Representatives (COR+)

- **Expanded Training Qualifications:** We recommend that the training qualifications for COR+ be broadened to include specialized electrical safety training, such as NFPA 70E, along with a thorough understanding of the site's electrical safety program. This will equip COR+ with the necessary knowledge to effectively oversee subcontractor compliance.
- **Understanding Site-Specific Requirements:** It is crucial for COR+ to differentiate between site-specific requirements and the subcontractor's own submitted and approved electrical safety program.
 - **Plan Submittal Review:** COR+ should conduct a detailed review of the subcontractor's Work Site Health Plan (WSHP) against the site's Electrical Safety Program (ESP). While SMEs can provide valuable insights during this review, it is important to note that they do not have the authority to approve documents. However, SMEs can reject submissions that do not meet compliance standards.
 - **Subcontractor Expectations:** COR+ must effectively communicate contract requirements to subcontractors, emphasizing the standards for on-site work. If the subcontractor is not adhering to the host's site-specific electrical safety program, it is advisable to outline these specific requirements during the subcontractor orientation.
 - **Field Oversight:** COR+ is responsible for closely monitoring the techniques and practices employed by the subcontractor. It is essential for the COR+ to communicate this information to the Electrical SME assisting in the oversight process, ensuring that all activities align with established policies and standards.

2. Recommended Training for Subcontractors

- **Guidelines for Compliance:** Subcontractors should receive training that includes high-level guidelines, with a focus on the site-specific approved edition of NFPA 70E. This training will ensure that subcontractors are well-informed about the safety standards they must adhere to.
- **Validate Subcontractor Training Adequacy:** COR+ should ensure subcontractor training is adequate. Attachment A COR+ Contractor Pre-Qualification Review Checklist has been added as a potential tool to assist

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COR+'s in evaluating minimum criteria if the Host Site does not have guidelines.

3. Checklist Implementation

- **Comprehensive Checklist Development:** The ESCoP Best Practice is to ensure that COR+ consistently conveys all relevant contract language to subcontractors. A method to meet this is the development of detailed checklist(s). These checklists will serve as tools to track compliance and identify any gaps in understanding, thereby enhancing communication and accountability. There are many host sites that already employ the use of checklists; however, Attachments A and B have been included as references. Attachment A is a checklist developed for pre-screening and flow down of requirements to the subcontractors prior to contract award, and Attachment B Contractor Continued Compliance Checklist is used to ensure continued compliance during contracted work performance.

4. Regular Audits and Field Walk-Downs

- **Scheduled and Unscheduled Audits:** To maintain ongoing compliance, we recommend conducting both scheduled and unscheduled audits, as well as job walk-downs. These assessments will help to promptly identify and address any compliance issues, ensuring that safety standards are consistently upheld. Attachment B has been included as a reference checklist to assist with Field Walkdowns.

EFCOG ESCoP POSTURE

The EFCOG ESCoP recognizes that sites have established contracting programs and processes. However, there continue to be ongoing issues with subcontractors performing safe electrical work. With the goal of continuous improvement, the ESCoP has developed this Best Practice to highlight the importance of effectively managing subcontractors to ensure compliance with safety and health regulations and site-specific requirements specified in contracts. It identifies a significant gap in the communication of contractual language from the Contract Oversight Representative (COR+) to subcontractors and their sub-tiers, leading to frequent non-compliance and violations. The paper proposes strategies to improve communication and increase knowledge of electrical contractual requirements among all parties, aiming to create a safer, more compliant working environment and enhance overall project efficiency.

DEFINITIONS/TERMS

COR - the Contractor's representative responsible for monitoring a contractor's performance and verifying that contract requirements are being met. Other Labs may refer to this role as the STR, CDR, SDR.

Contractor (Host/Prime) - The contracting organization, office, or individual tasked with prequalifying a subcontractor.

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Subcontractor - A contractor at any tier hired to perform specific tasks by the contracting organization, office, or individual.

Attachment A - COR+ Subcontractor Pre-Qualification Review

COR+ SUBCONTRACTOR QUALIFICATION CHECKLIST (CQC)

1. Documentation Verification

- Ensure that the scope of work is comprehensive and clearly articulated.

2. Subcontractor Safety Plan Submitted to Contractor for Work Containing Hazardous Electrical Energy Exposure:

- Contact the Subject Matter Expert (SME) if any of the following energy thresholds are met or exceeded:
 - 50 VAC and 5 mA
 - 100 VDC and 40 mA
 - Batteries exceeding 1000 W
 - Capacitors:
 - Voltage $\leq 100\text{V}$ and Energy $> 100\text{J}$
 - Voltage $> 100\text{V}$ to 400V and Energy $> 1\text{J}$
 - Voltage $> 400\text{V}$ and Energy $> 0.25\text{J}$
 - Rf:
 - AC (3 kHz – 100 kHz): $1 \times f \text{ mA}$, f in kHz
 - AC (100 kHz to 3 MHz): 100 mA
 - AC (3 MHz to 30 MHz): $100 (f/3) \times 0.3$, f in MHz
 - AC (30 MHz to 110 MHz): 200 mA
 - Sub-RF:
 - AC (1 Hz to 3 kHz): 50 volts and 3 mA

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- Contact the SME if work is being conducted near (within 20 feet) overhead power lines, particularly when using elevated work platforms or heavy equipment.
- Ensure that a documented electrical shock and arc flash risk assessment is readily available at the work location.

3. SAFETY TRAINING

- Ensure subcontractors and subcontract personnel have been provided with training by an approved vendor; is documented and holds relevant certifications in accordance with local, state, and federal codes and standards (e.g., NFPA 70E, LOTO).
- Recommended elements of an approved NFPA 70E training program:
 - Instructor-led (Virtual Live, Classroom, or On-the-Job Training)
 - Minimum of 8 hours
 - Completed at least every three years
 - Alternative curriculums may be submitted and evaluated by the host Electrical SME
- First Aid/CPR/AED
- Emergency Contact Release training

4. SUB-TIER CONTRACTUAL REQUIREMENT FLOW DOWN

- Is the subcontractor planning on sub-tiering out any work?
 - If using sub-tier to execute any scope, provide evidence to Host (Prime Contractor) that contractual requirements have been covered.

APPLICABLE REFERENCES:

Site Flow Down Requirements

Regulatory Documents

- 10 CFR 851: Worker Safety and Health Program regulations.

Industry Standards

- OSHA 29 CFR 1910
- OSHA 29 CFR 1926
- NFPA 70 Electrical Safety in the Workplace

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DOE ISM Process Core Functions and Guiding Principles

The five core functions of ISM are:

1. Define the Scope of Work
2. Analyze the Hazards
3. Develop and Implement Hazard Controls (including environmental controls)
4. Perform Work within Control
5. Provide Feedback and Continuous Improvement

The seven guiding principles are:

1. Line Management Responsibility for Safety - Line management models safe work behaviors and communicates safe work expectations to set up staff for success.
2. Clear roles and responsibilities - Everyone knows who is leading the work (Activity Lead) and their respective roles and responsibilities for the job at hand.
3. Competence Commensurate with Responsibilities - Management assigns work to staff with the experience, skills, and abilities to responsibly fulfill that task.
4. Balanced Priorities - Safety and environmental protections are resourced appropriately at all phases of a project.
5. Identification of standards and requirements - Before starting work, the hazards are evaluated, and there is agreement on the safety standards and requirements needed to plan and perform the work to protect staff and the environment.
6. Hazard Controls are tailored to the work performed - Safety and process controls are specific to the work conditions.
7. Operations authorizations - The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed upon.

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Attachment B - COR+ Contractor Continued Compliance Checklist

1. Electrical Safety Program Audit

Interval: Not to exceed 3 years

Purpose: Verify that the electrical safety program's principles and procedures comply with NFPA 70E.

Checklist Items:

- Is the electrical safety program documented, current, and accessible?
- Does the program reference the latest NFPA 70E edition?
- Are roles and responsibilities (including AHJ) clearly defined?
- Are hazard elimination and risk assessment prioritized?
- Are procedures for establishing an Electrically Safe Work Condition (ESWC) included?
- Is there a process for energized work justification and permitting?
- Are training requirements and qualification processes described?
- Are inspection, maintenance, and audit requirements specified?
- Are subcontractor responsibilities and interface procedures documented?
- Is there a mechanism for problem identification, tracking, and corrective actions?
- Are audit findings documented and corrective actions tracked?

2. Field Work Audit

Interval: Not to exceed 1 year

Purpose: Verify that field work follows the procedures of the electrical safety program.

Checklist Items:

- Are job planning and briefing forms completed for every task?
- Is the scope of work clearly defined and understood?

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- Are arc flash and shock hazards properly assessed?
- Are arc flash labels present and current?
- Are approach boundaries established and respected?
- Is PPE selected and used per hazard assessment and NFPA 70E requirements?
- Are precautionary techniques and zero voltage verification applied?
- Are procedures specific to the work available and followed?
- Are at least two qualified persons assigned for work within restricted boundaries (as required)?
- Are unqualified persons escorted and properly protected?
- Are alerting techniques (signs, tags, barricades) used where necessary?
- Are insulated tools, equipment, and test instruments inspected and used correctly?
- Are deficiencies or non-compliance issues documented and corrected?
- Is retraining or procedural revision initiated when deficiencies are found?

3. Lockout/Tagout (LOTO) Program and Procedure Audit

Interval: Not to exceed 1 year

Purpose: Audit LOTO program and procedures per NFPA 70E Article 120.

Checklist Items:

- Is there a written LOTO program compliant with OSHA 1910.147 and NFPA 70E?
- Are all energy sources identified and isolated before work begins?
- Are LOTO procedures specific to each system/equipment and up to date?
- Is LOTO training provided and documented for all affected workers?
- Is worker execution of LOTO procedures observed and compliant?
- Is at least one LOTO in progress reviewed during the audit?
- Are LOTO equipment and devices unique and properly used?
- Are deficiencies in LOTO program, training, or execution identified and corrected?
- Is documentation of LOTO audits maintained?

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4. Documentation

Requirement: All audits must be documented in writing.

Checklist Items:

- Are audit findings, deficiencies, and corrective actions recorded?
- Is supervisor or area lead certification included?
- Are previous findings reviewed for closure?
- Is documentation retained per regulatory requirements (minimum 5 years for OSHA)?

5. Subcontractor Oversight Specifics

- Are subcontractors trained and qualified per site requirements?
 - Are subcontractor LOTO procedures reviewed for equivalency and compliance?
 - Is oversight of subcontractor field work performed and documented?
 - Are corrective actions for subcontractor deficiencies tracked and closed?
 - Is there clear communication of site-specific safety requirements to subcontractors?
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6. NFPA 70E Update Awareness

- Is the electrical safety program reviewed and updated after each NFPA 70E revision (every 3 years)?
- Are staff and subcontractors informed of significant changes (e.g., two-person requirement for energized work, expanded verification for ESWC, updated PPE guidance)?