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Standards

PRC-STD-OP-54266

Hazardous Energy Control

Revision 2, Change 1

Published: 05/14/2019

Effective: 05/14/2019

Program: Worker Protection Programs

Topic: Operations

Technical Authority: Smith, Craig

Functional Manager: Ferguson, Randy

Use Type: Administrative



- Solid Waste Operations Complex :
Screening Determination Performed: (GCX-8 (SWOC-18-072))

 Screener: Jacobs, Orvil
- Canister Storage Building/Interim Storage Area :
Categorical Exclusion: GCX-8 (Not in Safety Basis Compliance Matrices)
Screener: Covey, Lori
- Central Plateau Surveillance and Maintenance :
Categorical Exclusion: GCX-7 (Minor Change)
Screener: Waller, Mitchell
- Waste Encapsulation Storage Facility :
Categorical Exclusion: GCX-8 (Not in Safety Basis Compliance Matrices)
Screener: Covey, Lori
- 100 K Facility :
Categorical Exclusion: GCX-8 (Not in Safety Basis Compliance Matrices)
Screener: Oberg, Brian
- Plutonium Finishing Plant :
Categorical Exclusion: GCX-8 (Not in Safety Basis Compliance Matrices)
Screener: King, Jeffrey
- Transportation :
Excluded from USQ
Exclusion Reason:
N/A per Section 1.3.
- 324 Facility :
Categorical Exclusion: GCX-8 (Not in Safety Basis Compliance Matrices)
Screener: Enghusen, Mark

Periodic Review Due Date:01/10/2024

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Change Summary

Description of Change

Section 2.3.1.c: Remove “or in the Required Component Position” section of the Eight Criteria Checklist”

Section 2.4.1: Added words to reference controls

Delete 2.4.2: “Proximity voltage testers may only be used for credited voltage checks per DOE-0336 (i.e., safe-condition checks and safe-to-work checks) as an alternate method when contact voltage measurements are not possible and when specifically authorized via the work document.”

Section 4: Added guidance to use the form instruction for record retention

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1.0 INTRODUCTION**1.1 Purpose**

This standard establishes CH2MHILL Plateau Remediation Company (CHPRC) supplemental requirements to DOE-0336, *Hanford Site Lockout/Tagout Procedure*, for consistently implementing a hazardous energy control process.

1.2 Scope

This standard provides CHPRC requirements for the management and execution of hazardous energy control. The requirements listed within this standard have been identified to provide the highest assurance of compliance with DOE-0336, thus providing a safe work environment for execution of servicing, maintenance, construction, operations and deactivation and decommissioning (D&D) activities.

1.3 Applicability

This standard applies to all CHPRC personnel and subcontractors.

1.4 Implementation

This standard is effective upon publication.

2.0 STANDARD**2.1 General Requirements**

- 2.1.1 Management and supervision must ensure during walk-downs, preplanning, work planning, and pre-job briefs that workers are engaged in the process and understand requirements and expectations.
- 2.1.2 Use of the work control processes must be adhered to in all cases. No determination by any individual or group that procedural or work package use is "optional" is allowed.
- 2.1.3 When performing lockout/tagout (LOTO) work in the field, ensure workers carry a copy of applicable section(s) of DOE-0336 and that workers follow the appropriate steps called out in the procedure.

2.2 Training Requirements

- 2.2.1 The Controlling Organization LOTO Administrator (COA) will qualify per *Controlling Organization Lockout/Tagout Administrator* (course 600605).
- 2.2.2 Facility/Project Management will designate the members of the controlling organization on the *Controlling Organization Designation Letter* (Site Form A-6005-976). The Instructions page posted with the form provides completion and disposition of this record.

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2.3 Requirements for Identification of Isolation Boundaries**2.3.1 Electrical**

- a. Isolation boundaries for Lockout/Tagout Authorization Form (TAF) or Eight-Criteria Checklist must be confirmed by one of the following:
 - An electrical circuit verification investigative work package used as evidence of accuracy for electrical isolation.
 - A previous TAF or Eight-Criteria Checklist using the isolation point(s), which is documented as accurate, based on previous use.
 - The isolation point for the equipment or system is readily identifiable by visual confirmation.
- b. The COA developing the isolation boundary will verify no system temporary changes or modifications have taken place that would invalidate the use of a previous circuit verification, TAF or Eight-Criteria Checklist as evidence of accuracy.
- c. Method of confirmation will be documented in block 4 when using a TAF.
- d. The electrical circuit verification requirement for a TAF may be waived by Facility/Project Management.
 - Waiver of the verification will be documented in block 4 of the TAF.

2.3.2 Non-Electrical

- a. Isolation boundaries for Lockout/Tagout Authorization Form (TAF) or Eight-Criteria Checklist must be confirmed by one of the following:
 - Investigative work package used as evidence of accuracy for isolation.
 - A previous TAF or Eight-Criteria Checklist using the isolation point(s), which is documented as accurate, based on previous use.
 - The system is walked down using a “Hand-over-Hand” method, readily identified by visual confirmation, that the isolation boundary is accurate.
- b. The COA developing the isolation boundary will verify no system temporary changes or modifications have taken place that would invalidate the use of a previous TAF or Eight-Criteria Checklist as evidence of accuracy.
- c. Method of confirmation will be documented in block 4 when using a TAF.
- d. The non-electrical verification requirement for a TAF may be waived by Facility/Project Management.
 - Waiver of the verification will be documented in block 4 of the TAF.

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- 2.3.3 The Preparer and Technical Reviewer (for TAFs) shall perform 100% field walk-downs as part of determining isolation boundaries and the points in the system where verification of absence of hazardous energy will be conducted.
- a. The field walk-down may be waived by Facility/Project Management when performance would create a hazard to the COA (e.g., isolations in confined space, exposure to a hazard, as low as reasonably achievable [ALARA] concerns).
- Waiver of the walk-down will be documented in block 15 of the TAF or in the Required Component Position Section of the Eight-Criteria Checklist.
- 2.3.4 Inaccuracies identified in drawings/design media during verifications will be utilized to update the design media per engineering processes.

2.4 Performing Work with Electrical Hazard

NOTE: *Exposed refers to energized conductors or circuit parts that are capable of being inadvertently touched or approached nearer than a safe distance by a person; it is applied to electrical conductors or circuit parts that are not suitably guarded, isolated, or insulated.*

- 2.4.1 All exposed electrical equipment, circuit conductors, and circuit parts shall be tested de-energized before starting work, except for work performed using an Energized Electrical Work Permit (EEWP) or work with exemptions to an EEWP per DOE-359, Hanford Site Electrical Safety Program
- 2.4.2 Proximity or contact voltage testers may be used during the work process to inspect conditions for “self-checking” such as a final check before cutting a conductor or checking conductors in a cable tray.

2.5 Configuration Control

- 2.5.1 Situations that allow for crediting configuration control in lieu of applying lockout/ tagout per DOE-0336 must meet one of the following criteria:
- a. New build (Greenfield) activities prior to connecting systems to hazardous energy sources.
- b. Removal of hazardous energy sources in accordance with the following procedures:
- PRC-PRO-EN-2001, *Facility Modification Package Process*
 - PRC-PRO-WKM-53080, *CHPRC Cold and Dark Process*

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2.6 Facility/Project Management Review of LOTO Activities

NOTE: *Recognizing the diversity of CHPRC facilities, Facility/Project Management shall tailor the definition of non-routine work to the specific facility and hazardous energy controls.*

- 2.6.1 Facility/Project Management shall document the facility/project definition of non-routine work for LOTO activities.
- 2.6.2 Facility/Project Management will perform and document a review of non-routine LOTO activities.

2.7 Temporary Protective Grounding

NOTE: *Questions concerning temporary protective grounding should be directed to contractor electrical system Design Authority (DA), electrical Authority Having Jurisdiction (AHJ), and/or LOTO Subject Matter Expert (SME).*

- 2.7.1 Temporary protective grounding is used for personnel protection from shock hazards greater than 50 volts.
- 2.7.2 Temporary protective grounding applies to servicing and/or maintenance activities where there is potential for personnel exposure to hazardous energy due to contact with other energized circuits near the work, induced voltages, or stored electrical energy after LOTO is installed.
 - a. If temporary protective grounding is installed as part of the work activity, then the DA and/or TA determine if personnel protection is required.
 - b. Where it could be reasonably anticipated that the conductors or circuit parts being de-energized could contact other exposed energized conductors or circuit parts:
 - 1) DA determines if temporary protective grounding is needed.
 - 2) If temporary protective grounding is used, the DA provides the COA with the information necessary to meet requirements of NFPA 70E (2018), Section 120.5(8)
 - c. COA ensures the use of temporary protective grounding is implemented through instructions in the technical work document and/or LOTO process.

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3.0 FORMS*Controlling Organization Designation Letter, A-6005-976***4.0 RECORD IDENTIFICATION**

All records are required to be managed in accordance with PRC-PRO-IRM-10588, *Records Management Processes*.

Records Capture Table

Name of Record	Submittal Responsibility	Retention Responsibility
<i>Controlling Organization Designation Letter (A-6005-976 and Instruction sheet)</i>	Facility/Project Management	IRM Services Provider

5.0 SOURCES**5.1 Requirements***NFPA 70E, Standard for Electrical Safety in the Workplace®***5.2 Commitments**

CR-2018-0395, CA #3

5.3 References

DOE-0336, *Hanford Site Lockout/Tagout Procedure*
 PRC-PRO-EN-2001, *Facility Modification Package Process*
 PRC-PRO-IRM-10588, *Records Management Processes*
 PRC-PRO-WKM-53080, *CHPRC Cold and Dark Process*

5.4 Bases

DOE-0359, *Hanford Site Electrical Safety Program (HSESP)*
 PRC-PRO-OP-53077, *Senior Supervisor Watch*
 PRC-PRO-WKM-12115, *Work Management*