

Idaho National Laboratory

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Subcontractors	Program Requirements Document		eCR Number: 609362
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Manual: INL Subcontractor Requirements

Entire Document Changed

1. PURPOSE

Proper monitoring and control of demolition activities ensures these activities are accomplished in a safe manner and in accordance with existing requirements. This document highlights requirements referenced in the “Source Documents” section, as well as Contractor requirements. Any applicable regulatory or Contractor requirements must be followed, with the most stringent requirement being met.

2. APPLICABILITY

This document applies to all subcontractors who conduct demolition activities at the INL, as specified in their contract with Contractor. Stricter requirements may be imposed by subcontractors upon their employees or subtier contractors. The requirements of this document must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

3. REQUIREMENTS

- 3.1 Demolition shall meet the requirements of 29 CFR 1926 Subpart T “Demolition.” Additional requirements specific to demolition are specified below.
- 3.2 A hazards analysis and a work plan shall be completed for the project before demolition begins.
- 3.3 Demolition work shall be done by qualified personnel.
- 3.4 Training documentation shall be verified, with particular attention being paid to mixed environments (such as an asbestos worker working in a confined space, in a radiological area, or on a hazardous waste site).
- 3.5 The number of personnel allowed in the demolition area shall be limited to those persons necessary to perform the work tasks.
- 3.6 Lines of demarcation shall be placed before any demolition work starts. Work areas and adjacent affected areas shall be protected or closed to unqualified or unauthorized personnel by the use of fences, signs, rope, or other appropriate barriers.

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- 3.6.1 The Contractor Point of Contact (POC) shall be consulted for direction regarding additional signs, such as:
- A. radiation signs
 - B. CERCLA postings
 - C. RCRA waste postings
 - D. asbestos removal or advisory signs
 - E. flammable or combustible material storage.
- 3.6.2 Warning lights shall be placed on or about all barricades as necessary to prevent inadvertent pedestrian and vehicular access after dark.
- 3.7 Before demolition begins, an engineering survey of the structure shall be obtained from the Contractor POC. This survey shall address, as a minimum:
- A. the structure layout
 - B. the condition of the framing, floors, and walls
 - C. the possibility of unplanned collapse from weakness caused by age, fire, or overuse of any portion of the structure (any adjacent structure where employees or property may be exposed shall be similarly checked)
 - D. the existence of other potential or real demolition hazards.
- 3.8 All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled outside the building or demolition area, in accordance with RD -2012, Lockout and Tagout and form 432.65 checklist before demolition is started. **Special attention to lockout/tagout shall be considered for projects that require energized systems to be de-energized prior to demolition. A pre-demolition walkdown with the job supervisor, CM POC and Operations Support personnel will be performed prior to demolition to ensure the identification markings and zero energy verifications are completed.**
- The subcontractor is required to perform a secondary zero energy verification with a qualified person on all system and components to include electrical, gas, water, steam and other service lines prior to cutting or removing.**
- 3.8 Pedestrian and vehicular traffic shall be controlled in any area that is closer than one-fourth of the height of the structure to the perimeter of the structure being demolished.

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3.9 Demolition within operating facilities will have additional requirements. These requirements are:

3.9.1 Demolition within operating facilities primarily encompasses demolition associated with component or system replacement or upgrade in or near operating facilities.

3.9.2 Each project that includes demolition will require a subcontractor generated demolition procedure that will positively identify systems to be demolished. The plan shall as a minimum identify individual components making up a system (for example electrical power, electrical controls, fuel, steam). Special attention to lockout/tagout should be considered for projects that systems are to be systematically de-energized as demolition activities progress.

NOTE: See Appendix A for sample of demolition plan.

3.9.3 All personnel engaged in demolition activities shall be trained to the demolition procedure.

4. DEFINITIONS

For definitions of terms used throughout the INL Subcontractor Requirements Manual, refer to LST-359.

5. REFERENCES

5.1 Source Documents

29 CFR 1926, Subpart T, Demolition

DOE Order 440.1A Worker Protection Management for Federal and Contractor Employees

American National Standards Institute (ANSI) Standard A10.6-1990, Safety Requirements for Demolition Operations

6. APPENDICES

Appendix A Sample Demolition Plan

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Appendix A

Sample Demolition Plan

1. PURPOSE

1.1 The purpose of this Technical Procedure Requirement is to establish requirements by which demolition activities will be performed.

2. SCOPE AND APPLICABILITY

2.1 This guideline is applicable to mechanical and electrical demolition activities within operating facilities. This guide will provide a consistent and positive method for identification and removal of individual components within a system.

2.2 The definition of demolition is the removal of piping systems, electrical systems, system components, or the removal of any item within an operating facility.

3. PREREQUISITES

3.1 The requirements for the implementation of this guideline shall be identified in the project documents.

3.2 Personnel performing demolition activities shall be trained to the requirements of this procedure and evidence of such shall be noted in the Pre Job Briefing and training records.

4. INSTRUCTIONS

4.1 Planning and Coordination

4.1.1 The job supervisor shall coordinate all demolition efforts and interface with the various crafts and Operations Support personnel involved. Coordination will include outage planning, demolition walkdowns, and will support safe operation of the facility as required.

4.1.2 The job supervisor shall walk the job daily with the individual crafts involved in the demolition activities. The job supervisor may elect to pass this requirement on to the individual craft foreman, however one individual shall be responsible for all demolition activities associated with the project.

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4.2 Identification Marking

- 4.2.1 Color coded identification marking shall be applied to all systems shown on the project documentation prior to starting demolition activities. The color-coding shall identify the type of system and the date the system was originally identified. Ribbon shall be used to identify the systems and the color code shall be as follows:

Red – electrical systems

Yellow – mechanical piping systems

Blue – mechanical HVAC systems

Green – miscellaneous systems or components

- 4.2.2 The color code system shall include a positive means for verification that a system or component is approved for removal. Orange ribbon shall be used to flag systems that have been walked down and are ready for removal (for example: Red ribbon for an electrical system accompanied by an Orange ribbon indicating the component has been walked down and is ready for removal). The orange ribbon shall be marked with the date the component is to be removed.
- 4.2.3 If only a portion of a system is to be removed two orange ribbons shall be applied approximately one inch apart on either side of where the line is to be cut.

4.3 Pre Job Briefing

- 4.3.1 A Pre Job Briefing shall be held prior to each shift's demolition activities to address the guidelines and safety requirements outlined in this procedure. Pre Job Briefings shall include a review of the color code system, the date that should be on the orange ribbon and a review of the drawings at the job site identifying the components to be removed.

NOTE: *Some projects may only provide schematic drawings. Special attention should be place on the actual field conditions when using schematic drawings for planning purposes.*

4.4 Walkdown Verification

- 4.4.1 Initial walkdown. The systems shall be walked down initially at the start of the project with Operations Support personnel. The initial walkdown will be performed as verification that the correct system components have been identified.

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- 4.4.2 Pre-demolition walkdown. Pre-demolition walkdowns with the job supervisor and Operations Support personnel will be performed prior to each shift to ensure the identification markings are correct. Orange ribbon shall be applied to the systems for that shift's demo activity. The job supervisor shall also remove orange flagging that is out of date. The job supervisor shall discuss with operations support personnel all lockout / tagout requirements and ensure lockout / tagouts are in place prior to flagging the system.
- 4.4.3 Changes. If there are changes to project scope or changes due to design errors or omissions the new work shall be reviewed and walked down prior to commencing.
- 4.4.4 Daily post demolition activities. The job supervisor shall perform a walkdown at the end of the each shift and prior to weekend or holiday breaks to ensure the job site has been left in a safe condition. The walkdown should include signs and barriers and changes to operational postings that may need to be updated due to removed equipment and components.

4.5 Demolition

- 4.5.1 Employees shall only demolish systems that have orange ribbon with the current date and a ribbon identifying the system type. If a system contains a ribbon that has an old date or improper system identification the employees shall notify the foreman or job supervisor.
- 4.5.2 Employees shall only demolish systems that they are qualified to remove. The job supervisor shall ensure each worker meets the qualifications required for assigned activities.

4.6 Post Demolition / Post Job Review

- 4.6.1 At the completion of demolition activities, the job supervisor shall walkdown the project with the individual craft supervision and Operations Support personnel to ensure all identified systems have been removed and left in a safe condition for continued operation of the plant and for follow-on installation crews.
- 4.6.2 The post demolition walkdown shall include a review of the drawings to further ensure all system components have been removed.