

## Idaho National Laboratory

<b>HOISTING AND RIGGING</b>	Identifier: RD-2007
	Revision: 5
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Subcontractors	Program Requirements Document	eCR Number: 609114
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Manual: INL Subcontractor Requirements

Entire Document Changed

## 1. PURPOSE

This document provides requirements for subcontractors at the Idaho National Laboratory (INL) to ensure safety while working around hoisting and rigging activities. This document highlights requirements referenced in Section 5.1, Source Documents, and 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 performing hoisting or rigging work at INL as specified in their contract with the contractor. Stricter requirements may be imposed by subcontractors upon their employees or subtier contractors. Subcontractors must follow the requirements of this document; however, the means of implementation may vary as determined by the subcontractor.

## 3. REQUIREMENTS

3.1 All subcontractors shall meet the requirements of Occupational Safety and Health Act (OSHA), 29 CFR 1926, Subpart CC, "Cranes and Derricks in Construction." In addition, all subcontractors shall use the Department of Energy (DOE) Hoisting and Rigging Technical Standard 1090 (DOE-STD-1090), "Hoisting and Rigging." Additional requirements specific to performing hoisting and rigging operations at INL are specified in the following steps.

**NOTE:** *DOE-STD-1090 may be found at the following link, which provides access to approved DOE standards:*

<http://www.hss.doe.gov/nuclearsafety/techstds/standard.html>.

3.2 Personnel Qualifications: The purpose of this subcontractor crane operator qualification process is to ensure that prospective crane operators meet minimum job qualifications, including specific physical requirements, and demonstrate the knowledge and practical skills required to safely and proficiently operate a crane(s) while working at INL.

3.2.1 A mobile crane operator(s) working on "Service" contracts (non-construction) shall meet the requirements of OSHA's General Industry Standard, 29 CFR 1910.180, "Crawler, Locomotive and Truck Cranes."

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3.2.1.1 Mobile crane operators shall have valid certification from an accredited crane operator testing organization; an example would be the National Commission for the Certification of Crane Operators as being in compliance with the qualification requirements of this procedure. A copy of the mobile crane operator's certification shall be made available to the contractor.

3.2.1.2 Mobile crane operators without valid certification can become a qualified mobile crane operator for operating mobile cranes at INL by doing one of the following:

- “Testing Out” – taking and passing the INL Mobile Crane Operator training course, TRN17 “initial,” written and practical test
- Taking the INL Mobile Crane Operator training course, TRN17 “initial,” to include passing the written and practical test.

3.2.1.3 The re-qualifications period for mobile crane operators is every 3 years for mobile crane operators trained and qualified through the INL mobile crane operator training program. Refresher training can be accomplished by taking and completing TRN26 “refresher.”

3.2.1.3.1 Re-qualification will be based on requirements of the accredited crane operator testing organization.

**NOTE:** *“Practical tests” for completion of mobile crane operator qualifications will be completed on the subcontractor’s mobile crane being operated at INL.*

3.2.1.4 A copy of the mobile crane operator’s physical examination shall be made available to the contractor.

3.2.1.4.1 Operator physical examinations shall be required every 3 years or more frequently if supervision deems it necessary.

**NOTE:** *Department of Transportation, Commercial Drivers License physical examinations are considered equivalent to the above-referenced requirement.*

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- 3.2.2 Mobile crane operators working on “Construction” contracts shall meet the qualification requirements of 29 CFR 1926.1427, “Operator Qualifications and Certifications.” Construction work, as defined in OSHA, means work for construction, alteration, or repair, including painting and decorating. A copy of the crane operator certification shall be made available to the contractor.
- 3.2.3 The construction signal person(s) shall meet the qualification requirements of 29 CFR 1926.1428, “Signal Person Qualifications.” Verification of the signal person(s) qualifications shall be made available to the contractor.
- 3.2.4 Construction rigger(s) shall meet the qualification requirements defined in 29 CFR 1926.1401, “Definitions.” Verification of the rigger(s) qualifications shall be made available to the contractor.
- 3.2.5 Vendors/Suppliers Operating Hoisting Equipment While Servicing or Off-Loading Materials and Equipment at INL**
- 3.2.5.1 Only qualified and authorized operators shall be permitted to operate hoisting equipment (e.g., truck-mounted cranes or knuckle boom cranes) when servicing or off-loading materials or equipment at INL. Verification of the crane operator’s qualifications shall be made available to the contractor.
- 3.2.5.2 Initial training of operators shall include applicable training on equipment for which qualification is sought.
- 3.2.5.3 Operator’s knowledge and proficiency shall include results of written or oral evaluation and witnessing a demonstration of operator’s skills.
- 3.2.5.4 Operators should be able to demonstrate knowledge of equipment operating characteristics, capabilities, limitations, safety features, and operating/inspection procedures.
- 3.2.5.5 Hoisting equipment shall be maintained and inspected in accordance with manufacturer’s recommendation. A copy of the hoisting equipment’s current “Periodic Inspection” shall be available on the hoisting equipment.
- 3.2.5.6 Physical qualifications shall be based on specific job requirements.

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### 3.3 Lift Determination

3.3.1 In addition to requirements in DOE-STD-1090, Section 2.1, Critical Lift Determination, the following requirements shall apply:

3.3.1.1 Multiple crane lifts – lifts involving two or more cranes are complex operations requiring considerable skill and planning. It is absolutely critical that a detailed lift plan be developed. A multiple crane lift should be meticulously planned and every eventuality taken into consideration. Multiple crane lifts shall be designated as a “Critical Lift.”

3.3.1.2 Rigging from the tine of a forklift truck – under normal forklift operations, rigging directly from the tines of a forklift truck is not allowed. The preferred method of overhead lifts is with a crane. If rigging directly from the forklift truck tines is the most effective way to perform the task, the subcontractor performing the work shall develop a rigging plan. The rigging plan should include the following information:

3.3.1.2.1 Identification of item to be moved, the weight, dimensions, and center of gravity.

3.3.1.2.2 Identification of the forklift truck, its rated capacity, and load center dimensions.

3.3.1.2.3 Identification of rigging type and its rated capacity.

3.3.1.2.4 A sketch showing the rigging alignment.

3.3.1.2.5 Rigging should not be hung from a single tine; tines should be slid together. Single-tine lifting must have an approved engineering evaluation.

3.3.1.2.5.1 Sling angle should be as vertical as possible.

3.3.1.2.5.2 “Tip” loading of the tine is prohibited.

3.3.1.2.5.3 Only stable or safely arranged loads shall be handled in this manner.

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#### **4. DEFINITIONS**

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

#### **5. REFERENCES**

##### **5.1 Source Documents**

29 CFR 1926, Subpart CC, "Cranes and Derricks in Construction"

29 CFR 1910.180, "Crawler Locomotive and Truck Cranes"

DOE-STD-1090, "Hoisting and Rigging" (current edition)

#### **6. APPENDIXES**

Appendix A, Form 433.21, Mobile Crane Setup Plan

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**Appendix A**

**Form 433.21, Mobile Crane Setup Plan**

433.21  
12/xx/2011  
Rev. 06



**INL MOBILE CRANE SETUP PLAN**

412.47 Rev. 00  
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LOCATION: \_\_\_\_\_ DATE OF LIFT: \_\_\_\_\_

LOAD DESCRIPTION: \_\_\_\_\_

LIFT DESCRIPTION: \_\_\_\_\_

ORDINARY: \_\_\_\_\_ (Form is optional for ordinary lifts; see LWP-6500, Step 4.3.10.)

CRITICAL: \_\_\_\_\_ CLPIC: \_\_\_\_\_

MULTIPLE CRANE: \_\_\_\_\_ Signature \_\_\_\_\_

**A. CRANE**

- Type of Crane \_\_\_\_\_
- Crane Capacity \_\_\_\_\_ tons  
\_\_\_\_\_ tons
- Lifting Arrangement
 

	Crane #1	Crane #2
a. Center of Load To Crane Center Pin	_____ ft.	_____ ft.
b. Length of Boom	_____ ft.	_____ ft.
c. Angle of Boom	_____ deg.	_____ deg.
d. Rated Capacity (Reeved to _____ Parts of Line) (From Chart)		
1) Over Rear	_____ lbs.	_____ lbs.
2) Over Front	_____ lbs.	_____ lbs.
3) Over Side	_____ lbs.	_____ lbs.

**D. RIGGING**

- Sling Selection
  - Type \_\_\_\_\_
  - Number of Slings in Hook-Up \_\_\_\_\_
  - Sling Size \_\_\_\_\_
  - Sling Length \_\_\_\_\_
  - Rating Capacity of Sling \_\_\_\_\_
- Shackle Selection
  - Capacity \_\_\_\_\_ tons
  - Number of Shackles \_\_\_\_\_

**E. LOAD DEDUCTIONS**

- Weight of Headache Ball \_\_\_\_\_ lbs.
- Weight of Block \_\_\_\_\_ lbs.
- Weight of Spreader Beam \_\_\_\_\_ lbs.
- Weight of Slings and Shackles \_\_\_\_\_ lbs.
- Weight of Jib \_\_\_\_\_ lbs.
- Erect \_\_\_\_\_ Stowed \_\_\_\_\_
- Weight of Cable (Load Fall) \_\_\_\_\_ lbs.
- Load Weight \_\_\_\_\_ lbs.
- Other \_\_\_\_\_ lbs.
- TOTAL WEIGHT \_\_\_\_\_ lbs.

**F. PRE-LIFT CHECKLIST**

	YES	NO
1. Outriggers Fully Extended	<input type="checkbox"/>	<input type="checkbox"/>
2. Crane Inspection Records	<input type="checkbox"/>	<input type="checkbox"/>
3. Swing Room	<input type="checkbox"/>	<input type="checkbox"/>
4. Head Room Checked	<input type="checkbox"/>	<input type="checkbox"/>
5. Tag Line Used	<input type="checkbox"/>	<input type="checkbox"/>
6. Load Chart in Crane	<input type="checkbox"/>	<input type="checkbox"/>
7. Work Area Barricaded or Guarded	<input type="checkbox"/>	<input type="checkbox"/>
8. Wind Conditions	_____	
9. Qualified Operator	_____	
10. Qualified Rigger	_____	
11. Designated Signaler	_____	