

**Idaho National Laboratory****MATERIAL HANDLING, STORAGE, AND DISPOSAL**

Identifier:	RD-2016	
Revision:	3	
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Subcontractors	Program Requirements Document		eCR Number: 609267
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Manual: INL Subcontractor Requirements

Entire Document Changed

**1. PURPOSE**

This document provides requirements for the safe handling, storage, and disposal of materials and requirements to protect workers from hazards and facilities from damage while performing these activities. 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 handle, store, or dispose of materials 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**

Material handling, storage and disposal shall meet the requirements of 29 CFR 1926 Subpart H "Material Handling, Storage, Use and Disposal." Additional requirements specific to material handling, storage and disposal are specified in RD-2007, "*Hoisting and Rigging*"

**3.1 Training**

- 3.1.1 Training shall be provided to all persons engaged in manual lifting operations, as applicable for their job descriptions.
- 3.1.2 Training shall include the safe and proper manual and mechanical lifting techniques and procedures to be used, including the following procedures.
- 3.1.3 Training on how to use all available mechanical aids safely, properly, and in accordance with manufacturers' instructions, shall be initially completed before an employee uses the aids, and shall be repeated as needed to maintain proficiency.

**3.2 Material Handling**

- 3.2.1 The following requirements shall be used as applicable for the work being performed:

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3.2.1.1 Subcontractors shall ensure that mechanical handling equipment is available and properly used by employees whenever feasible.

**NOTE:** *It is recommended that an employee should not lift more than 50 pounds, or 1/3 their body weight, whichever is less.*

3.2.2 The following safety precautions shall be observed when loading and unloading truck and trailers:

3.2.2.1 Brakes shall be set and wheels shall be chocked while trucks and trailers are being boarded with powered industrial trucks.

3.2.2.2 As a minimum, the parking brake shall be set when loading or unloading light delivery trucks.

3.2.2.3 Brakes shall be set and wheels shall be chocked while loading or unloading delivery vehicles on steep grades and when using handling equipment that could cause the vehicle to shift.

3.2.2.4 When a difference in road or working levels exists, ramps, blocking, or grading shall be used to ensure the safe movement of vehicles between the two levels.

### 3.3 Material Storage

3.3.1 Storage areas shall be kept free from accumulations of materials that constitute hazards from tripping, fire, explosion, or pest harborage.

3.3.2 A minimum lighting level of 5 foot-candles shall be maintained in storage areas.

3.3.3 Maximum safe loads for floors shall not be exceeded.

3.3.4 Employees shall not climb shelves, bins, pallets, or similar equipment.

3.3.5 Precautions shall be taken against unauthorized access, with pilferage, injury, fire, and property damage all being considered.

3.3.6 Outside storage shall comply with the following requirements:

3.3.6.1 It is permissible to cover materials subject to weather damage with noncombustible protective sheeting or other means

3.3.6.2 Vegetation shall be controlled when necessary to protect materials stored outside.

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- 3.3.7 Postings shall comply with the following requirements:
- 3.3.7.1 Signs shall be provided to warn of clearance limits.
  - 3.3.7.2 Maximum safe load limits for floors (permanent or temporary) within buildings and structures, in pounds per square foot, shall be conspicuously posted or painted on the floor except for floors or slabs on grade.
- 3.3.8 Shelves shall comply with the following requirements:
- 3.3.8.1 Shelving shall be secured to the floor or securely fastened to prevent falling or tipping.
  - 3.3.8.2 To prevent items from falling, shelves shall be lipped as deemed necessary.
  - 3.3.8.3 Where personnel access to heavy, large, or awkward materials on shelves more than 5 feet off the floor is required, walkways, rolling safety ladders, non-slip step stools, or mechanical equipment shall be provided.
- 3.3.9 Stacked Items shall comply with the following requirements:
- 3.3.9.1 Stacked items and those on pallets shall be stored only as high as stability is ensured and required clearances shall be maintained from structural members and sprinklers. Normally, storage shall not exceed 12 feet in height, with some forms of plastic limited to a 6-foot storage height.
  - 3.3.9.2 All materials that are stored in tiers (including items such as bags, containers, and bundles) shall be stacked, racked, blocked, interlocked, limited in height, or otherwise secured so that they are stable and secure from sliding, falling, or collapse.
  - 3.3.9.3 All materials that are stacked or piled shall be stable, with no foreseeable risk of falling or toppling. Surfaces shall be reasonably level and free from risk to foot and vehicle travel.
  - 3.3.9.4 Material stored inside buildings under construction shall not be placed within 6 feet of any hoist way or inside floor openings, nor within 10 feet of an exterior wall that does not extend above the top of the material stored.

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- 3.3.10 Subcontractor materials shall be stored in accordance with the following requirements:
- 3.3.10.1 Bagged materials, such as cement, shall be stacked by stepping back the layers and cross-keying the bags at least every 10 bags high.
  - 3.3.10.2 Brick stacks shall be not more than 7 feet high.
  - 3.3.10.3 When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches for every foot of height above the 4-foot level.
  - 3.3.10.4 When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6-foot level.
  - 3.3.10.5 Structural steel, poles, pipes, bar stock, and other cylindrical materials, unless racked, shall be stacked and blocked to prevent spreading or tilting.
  - 3.3.10.6 Lumber shall be stacked on level and solidly supported sills so it is stable and self-supporting.
  - 3.3.10.7 Lumber piles shall not exceed 20 feet in height if mechanically handled or 16 feet in height if manually handled.
  - 3.3.10.8 Used lumber shall have all nails withdrawn before stacking.

### 3.4 Clearances

- 3.4.1 The following safe clearances shall be maintained when materials are handled and stored:
- 3.4.1.1 Vertical clearances of at least 36 inches shall be maintained from overhead sprinkler heads and in conformance with NFPA 13 , NFPA 231 and CFR 1926.151(d)(5).
  - 3.4.1.2 Sufficient clearances shall be maintained from fire doors, extinguishers, fire alarm cabinets, manual fire alarms, sprinkler valves, and risers to permit access for operation and testing
  - 3.4.1.3 Three-foot clearance shall be maintained from heating devices and flues, unless a lesser distance is permitted by the Underwriters Laboratories, Inc., or another recognized testing

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laboratory (clearance from ducts in accordance with NFPA 91)

- 3.4.1.4 At least 1-foot clearance shall be maintained, both horizontally and vertically, from lights and light fixtures.

### **3.5 Disposal**

- 3.5.1 Subcontractors shall contact the Contractor Point of Contact (POC) for guidance on disposal of the following materials.

- A. reusable personal property
- B. recyclable materials
- C. sanitary waste
- D. hazardous waste
- E. low-level waste
- F. mixed low-level waste
- G. fluid with radioactive/hazardous contamination
- H. transuranic waste
- I. mixed transuranic waste
- J. high-level waste.

## **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 1926.250, General Requirements for Storage
- 29 CFR 1926.56, Illumination
- NFPA 13, Standard for the Installation of Sprinkler Systems
- NFPA 30, Flammable and Combustible Liquid Code
- NFPA 91, Standard for Exhaust Systems for Air Conveying of Materials
- NFPA 101, Life and Safety Code
- NFPA 231, General Storage
- NFPA 231C, Rack Storage of Materials