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Subcontractors	Program Requirements Document	For Additional Info: http://EDMS	Effective Date: 12/15/04
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Manual: Subcontractor Requirements

Change Number: 117490

1. PURPOSE

This document provides safety controls and requirements for the use of *heavy industrial equipment* (see def.) by subcontractors at the Idaho National Engineering and Environmental Laboratory (INEEL) and the Idaho Completion Project (ICP) to minimize hazards to subcontractor personnel and property. This document highlights requirements referenced in the Source Requirements section, as well as contractor requirements. Any applicable regulatory or contractor requirements must be followed, with the most stringent requirement being met.

NOTE: *Heavy industrial self-propelled equipment operated on roadways that are outside of the job site or are not public access restricted may be subject to Department of Transportation (DOT) laws, rules, and regulations pertinent to commercial motor vehicles.*

NOTE: *All equipment must be used and maintained only as intended by the manufacturer and in accordance with the manufacturer's instructions and limitations.*

2. APPLICABILITY

This document applies to all subcontractors who operate heavy industrial equipment at INEEL and ICP, 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 Safety Equipment

- 3.1.1 All self-propelled equipment with cabs shall be equipped with windshields and functioning windshield wipers.
- 3.1.2 All cab glass shall be safety glass or equivalent and shall introduce no visible distortion affecting the safe operation of the vehicle.
- 3.1.3 Self-propelled equipment that operate in areas or under weather conditions that may cause fogging or frosting of the windshield shall be equipped with operating defogging or defrosting devices.
- 3.1.4 All self-propelled heavy industrial equipment shall be equipped with a service brake capable of stopping and holding the vehicle while fully loaded.

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- 3.1.5 All [self-propelled heavy industrial equipment](#) shall be equipped with operable emergency and parking brake systems.
- 3.1.6 [Self-propelled equipment](#) shall be equipped with operable brake lights.
- 3.1.7 [Self-propelled equipment](#) used at night or in low light conditions shall be equipped with at least two operable headlights and two operable tail lights.
- 3.1.8 Rollover structures removed for any reason shall be remounted with equal or better quality than the original installation.
- 3.1.9 Each rollover protective structure shall be permanently marked with the manufacturer or fabricator name, the model number (if any), and the make, model, and series number of the machine the structure is designed to fit.
- 3.1.10 [Self-propelled equipment for hauling with](#) payloads loaded by means of cranes, power shovels, loaders, or similar equipment shall be equipped with a cab shield or canopy adequate to protect the operator from shifting or falling material.
- 3.1.11 Trucks with dump bodies shall be equipped with a locking, permanent, positive means of support to prevent accidental lowering of the body during maintenance or inspection.
- 3.1.12 Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with an operable latch or other device that prevents accidental tripping of the mechanism.
- 3.1.13 Trip handles for tailgates of dump trucks shall be arranged so the operator is clear during dumping operations.
- 3.1.14 Pneumatic-tired earth-moving or haulage equipment with a maximum speed exceeding 15 miles per hour shall be equipped with functional fenders on all wheels (mud flaps may be used in lieu of fenders if the vehicle is not designed for fenders).
- 3.1.15 [Self-propelled equipment](#) used to transport personnel shall be equipped with an adequate number of firmly secured seats for the number of employees to be carried.
- 3.1.16 [Self-propelled equipment](#) shall be equipped with seat belts and anchorage meeting Society of Automotive Engineers (SAE) recommendation SAE J386-1969, as required.

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NOTE: *Seat belts need not be provided for equipment designed for stand-up operation only.*

3.2 Self-Propelled Equipment Pre-Use Checks

3.2.1 Self-propelled equipment shall be inspected before their initial use at the INEEL. This inspection, which must be witnessed by contractor, shall include as a minimum the following items:

- A. fluid leaks
- B. worn or deteriorating hoses, connections, etc.
- C. adequate guarding
- D. fire extinguisher (dated and currently inspected)
- E. operators manual
- F. load chart (for cranes, forklifts, etc.)
- G. annual inspection record (for cranes, etc.)
- H. proper set-up equipment (level and adequate outrigger pads)
- I. proper operating condition (equipment is free of functional defects)
- J. equipment is identified with subcontractors or sub-tier contractors name.

3.2.2 Self-propelled equipment shall be inspected at the beginning of each shift to confirm that they are in safe operating condition and free of apparent damage. This inspection shall include, as a minimum, the following items:

- A. service brakes, including trailer brake connections and parking brakes
- B. emergency stopping system (brakes)
- C. tires
- D. horn
- E. steering mechanism
- F. coupling devices
- G. seat belts
- H. operating controls
- I. safety devices
- J. lights, reflectors, windshield wipers, defroster, and other such equipment
- K. back-up alarm
- L. fire extinguisher
- M. warning and control labels, including checking to ensure that self-propelled equipment is within the current preventive maintenance cycle
- N. no evidence of hydraulic or other fluid leakage.

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- 3.2.3 The inspections described in 3.2.1 and 3.2.2 shall be performed by a *qualified* operator.
- 3.2.4 Unsafe equipment shall be reported immediately to [subcontractor](#) management.
- 3.2.5 Unsafe equipment shall be placed out of service and not used or operated until it has been returned to a safe, operable condition.
- 3.2.6 All malfunctions shall be documented, including the date and method of repair.

3.3 Equipment Pre-Operation

- 3.3.1 Subcontractors and construction managers shall ensure that heavy industrial equipment operators for INEEL or ICP are trained to initiate a Stop Work action if the pre-job briefing for work involving the equipment does not adequately mitigate the risks of the job.
- 3.3.2 Supervisors/pre-job briefers shall conduct pre-job briefings in accordance with MCP-3003, “Performing Pre-job Briefing and Documenting Feedback.”
- 3.3.2.1 Pre-job briefings and daily briefings of potential work shall be used to mitigate the potential risks of work involving the operation of heavy industrial equipment, especially in congested areas and through gates.
- 3.3.2.2 All overhead or adjacent systems, structures and components (SSC) or obstructions in the operating area, such as power or communication lines, guy wires and cables, buildings, other equipment, and ground conditions, shall be identified
- 3.3.2.3 A determination shall be made whether or not a spotter will be required for the job based on the following criteria:
1. A lift plan or formal work procedure requires use of a spotter.
 2. The load is not visible to the heavy industrial equipment operator.
 3. The working area of a bucket or blade is within close proximity to an overhead or adjacent SSC or obstructions.

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4. The operator of heavy industrial equipment requests a spotter.

5. The operational area is congested so that a full rotation arc or reach of the heavy industrial equipment could contact overhead or adjacent SSC or obstructions.

3.3.2.3.1 Whether or not a spotter will be required for the job shall be documented on Form 434.14, “Pre-Job Briefing Checklist.”

3.3.2.4 A determination shall be made whether or not an escort will be required for the job based on whether job activities meet the following criteria:

A. Heavy industrial equipment, oversize equipment, or equipment with movable appendages could make it oversize during transit, unless equipment has interlocks or positive devices to prevent inadvertent equipment extension during transit.

B. Heavy industrial equipment operator requests an escort.

3.3.2.4.1 Additional escorts shall be assigned, if necessary, for clearance observance and safety, such as making a tight cornering maneuver around any interference to observe the maneuvering of the applicable equipment from more than just the path ahead.

3.3.2.4.2 Whether or not an escort will be required for the job shall be documented on Form 434.14.

3.3.2.4.3 If an escort is required, “just-in-time” (JIT) training shall be provided that includes the following information and instructions:

A. Specified route.

B. Methods to determine adequate height and width clearances to safely maneuver heavy industrial equipment through a congested area or gate.

C. To be in constant communication with the operator.

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D. To stay a safe distance immediately in front of the equipment being escorted.

3.3.3 Operators and Supervisors shall perform a walk-down of the work area that includes the following activities:

A. All obstructions above and in the proximity of the proposed route, such as power or communication lines and poles, guy wires and cables, buildings, gates, ditches, and other ground conditions, shall be identified.

B. The following shall be considered prior to operating or transit of heavy industrial equipment:

1. Has pre-job planning and hazard analysis restricted heavy industrial equipment travel and activities in any areas with overhead lines or other hazards?
2. Have overhead obstructions including power or communications lines and their respective heights been identified for the planned travel routes and activities?
3. Is the width clearance and turn-radius clearance adequate along the proposed pathway?
4. Will any operation of heavy industrial equipment place it or its load within 10 ft of overhead lines, utility poles, or supporting guy wires?
5. Will overhead power and communication lines, guy wires, and utility poles be clearly visible to the operators of heavy industrial equipment, or their spotters or escorts?

3.3.3.1 Operators and supervisors shall ensure that all equipment involved in critical lifts has been proof tested within certification periodicity in accordance DOE-STD-1090, "Hoisting and Rigging."

3.3.4 Operators shall ensure that pre-job briefings and daily briefings for operation of the equipment mitigate the potential risks that the work could involve.

3.3.5 Spotters shall obtain or have documentation of having completed appropriate formal training for the assigned work.

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3.3.5.1 Spotters shall be cognizant of standard crane-related hand signals.

3.3.5.2 Spotters shall attend pre-job briefing and daily briefings for the assigned work.

3.3.6 Escorts shall obtain JIT training from the supervisor/pre-job briefer for the assigned work.

3.3.6.1 Escorts shall attend pre-job briefing and daily briefings, as necessary, for the assigned work.

3.4 Equipment Operation

3.4.1 Only operators who are qualified by training, experience, and reviewing the operator's manual for the specific equipment to be operated shall be allowed to operate heavy industrial equipment.

3.4.2 Employees exhibiting a lack of knowledge to operate heavy industrial equipment shall not be permitted to operate these vehicles until the employee completes training and demonstrates the ability to safely operate the equipment.

3.4.3 Managers or supervisors shall ensure that operators shall use seat belts (if provided) while operating equipment.

3.4.4 Spotters, when assigned, shall maintain 100% visual contact of the entire load line operational area while the specific lifting, digging, or demolition evolution is in progress within a congested work area because of proximity of an overhead or adjacent SSC that could be contacted during operation.

3.4.4.1 Spotters shall be proficient with standard crane-related hand signals and radio communications to communicate with operator. When equipment background noise is high, hand signals only shall be used.

3.4.4.1.1 When hand signals are required, spotters shall remain within the visual line of sight of the operator.

3.4.4.2 Spotters shall provide operational signals to the operator when the actual load is restricted from the visual line of sight of the operator.

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3.4.4.2.1 If the blade area of a bulldozer or bucket of a trackhoe or loader equipment is being operated within close proximity of an overhead or adjacent SSC or obstruction, spotters shall provide operational signals to the operator.

A. Spotters shall provide safety oversight by keeping personnel clear of the direct load line area.

B. Spotters shall provide assistance to the operator to safely reposition equipment within the operational area.

3.4.5 Escorts, when assigned, shall lead the heavy industrial equipment on a previously established route.

3.4.5.1 Escorts shall maintain visual contact from a position in front of the direction of travel of heavy industrial equipment and behind the equipment when it is being reversed, especially when a trailer is being hauled.

3.4.5.2 Escorts shall maintain communications with the equipment operator.

3.4.5.3 Escorts shall use a previously established method to ascertain adequate height and width clearance to safely maneuver heavy industrial equipment through a congested area or gate.

3.4.6 Operators shall be acutely aware of surroundings, especially when operating heavy industrial equipment such as cranes and bulldozers.

3.4.6.1 Operators shall pay special attention to surfaces over which the equipment will be operated and the proximity to other ongoing work such as digging activities in adjacent trenches and culverts that could present additional hazards.

3.4.6.2 Equipment shall be operated safety and properly.

3.4.6.3 Any concerns (e.g., feeling uncomfortable or not qualified) about the ability to safely operate a piece of equipment shall be reported to supervision.

3.4.6.4 Tools or materials shall be secured when transported in the same compartment as personnel to prevent movement.

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3.4.6.5 Equipment shall not be operated on any access roadway or grade unless it is constructed and maintained to safely accommodate it.

3.4.6.6 When in the vicinity of people, equipment shall not be operated in reverse, with an obstructed view to the rear, unless the equipment has an operable reverse signal alarm that is distinguishable from the surrounding noise level, or an employee or subcontractor signals that it is safe to do so.

3.4.6.7 Operation of equipment in the vicinity of power lines or energized transmitters, shall comply with the requirements of PRD-2011, Electrical Safety.

3.4.6.8 Ensure that clearance is adequate for the height and width of equipment being operated.

3.4.6.9 Ensure that heavy industrial equipment left unattended at night, adjacent to a roadway in normal use, or adjacent to construction areas where work is in progress has appropriate lights or reflectors, or erect barricades equipped with appropriate lights or reflectors around the equipment to alert others.

3.4.6.10 Do NOT use hoisting and rigging slings that have failed their inspections for any purpose, including use as tow straps. Remove from service and destroy.

3.4.6.11 No one on the ground shall be in bodily contact with the equipment without the specific knowledge and consent of the operator.

3.4.7 Managers or supervisors shall ensure that all emergency access ramps and berms are constructed to restrain and control runaway equipment.

3.5 Maintenance

3.5.1 A preventive maintenance system shall be established for heavy industrial vehicles in accordance with the manufacturer's recommendation and regulatory standards.

3.5.2 No modifications or additions that affect the capacity or safe operation of the vehicles shall be made without the manufacturer's written approval.

3.6 Heavy Equipment Left Running

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NOTE: Steps 3.6.1 and 3.6.2 NEVER apply to powered industrial trucks (forklifts), which CANNOT be left unattended, UNLESS authorized by the ICP Field Services general manager.

3.6.1 Before leaving heavy equipment, excluding powered industrial trucks (forklifts), running and unattended for short durations such as for lunch breaks, breaks, or other tasks, operators shall do the following and any other appropriate actions to ensure that the equipment is left in a safe manner and WILL NOT move:

3.6.1.1 Lower ground-engaging equipment.

3.6.1.2 Put transmission in neutral or park.

3.6.1.3 Set the emergency brake or similar equipment.

3.6.2 Before leaving heavy equipment, excluding powered industrial trucks (forklifts), running and unattended (for longer periods (such as overnight) to accommodate ongoing activities and ease of remobilization, operators shall follow Steps 3.6.1.1 through 3.6.1.3, and do the following:

3.6.2.1 Move equipment away from sensitive areas (see def.).

3.6.2.2 Notify the job supervisor.

3.6.2.3 Notify the plant shift supervisor (PSS) or facility manager or nuclear facility manager, as applicable.

3.6.2.4 Notify security.

3.6.3 Before leaving heavy equipment running for longer periods (such as overnight) in sensitive areas, operators shall contact the subcontractor technical representative (STR), job site supervisor (JSS), or PSS.

3.6.3.1 The STR, JSS, or PSS shall evaluate any sensitive area to determine whether it is necessary and safe to leave heavy equipment in operation there. If so, the operator shall be notified to leave the equipment in the sensitive area.

3.6.3.2 If notified by the STR, JSS, or PSS to leave heavy equipment running in a sensitive area, operators shall follow Steps 3.6.2.2 through 3.6.2.4.

3.6.3.2.1 Operators shall remain in attendance of equipment left in sensitive areas at all times UNLESS

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determined otherwise by the ICP Field Services general manager.

3.6.4 The STR, JSS, or PSS shall document in daily logs and work control documents (e.g., job safety analysis or safe work permit) the actions taken to leave equipment running in a safe manner.

4. DEFINITIONS

See the Glossary (LST-27) for definitions of the following terms:

Heavy industrial equipment.

Qualified-see qualified person.

Sensitive area.

5. REFERENCES**5.1 Source Documents**

29 CFR 1926.600, Equipment

29 CFR 1926.601, Motor Vehicles

29 CFR 1926.602, Material Handling Equipment

29 CFR 1926.1000, Rollover Protective Structures

DOE-STD-1090-DOE Standard, “Hoisting and Rigging”

Form 434.14, Pre-Job Briefing Checklist

MCP-3003, Performing Pre-job Briefing and Documenting Feedback

MCP-6504, Hoisting and Rigging Lift Determination and Lift Plan Preparation

SAE J319b-1971, Self-Propelled Scrapers

SAE J236-1971, Self-Propelled Graders

SAE J166-1971, Trucks and Wagons

SAE J237-1971, Front-End Loaders and Dozers

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5.2 Related Requirements

The following documents may also contain requirements that apply to this activity:

PRD-2019, Motor Vehicle Safety

6. APPENDICES

None