



# INDIANA UNIVERSITY

OFFICE OF THE EXECUTIVE VICE PRESIDENT  
FOR UNIVERSITY ACADEMIC AFFAIRS

University Environmental Health and Safety

## Heavy Equipment Vehicle Safety Program

October 14, 2015

### 1. INTRODUCTION

#### 1.1. Purpose

Indiana University Environmental Health and Safety (IUEHS) has developed this Program to establish the minimum requirements for heavy equipment vehicle operation. This Program is intended to establish minimum requirements for all heavy equipment vehicles. For the purposes of this Program, heavy equipment and heavy equipment vehicle are used interchangeably.

#### 1.2. Scope

This Program applies to all Indiana University employees that operate, work in conjunction with heavy equipment, or work in proximity to heavy equipment, including, but not limited to, farm vehicles, vehicles intended for earth-moving, and vehicles intended for over-the-road hauling. This Program does not apply when:

- 1.2.1. Indiana University does not own the heavy equipment responsible for creating the hazard, and by contract or through actual practice, does not have the authority to correct or mitigate the hazard;
- 1.2.2. The vehicle is a golf cart or off-road vehicle covered under the [Indiana University Procedures Affecting Golf Carts & Off-Road Vehicles \(ORVs\)](#). See the Indiana Bureau of Motor Vehicle's definition of an [off-road vehicle](#) for further clarification of off-road vehicles not covered by this Program.
- 1.2.3. The vehicle is covered under the Indiana University Aerial Lift Program.
- 1.2.4. The vehicle is covered under the Indiana Mower Safety Program.
- 1.2.5. The vehicle is covered under [the Indiana University Powered Industrial Truck Program](#).

### 2. AUTHORITY AND RESPONSIBILITY

#### 2.1. University Environmental Health and Safety (IUEHS) is responsible for:

- 2.1.1. Serving as an information resource for all aspects of this Program.
- 2.1.2. Revising and updating the Program as necessary;
- 2.1.3. Inspecting equipment and operation for auditing purposes or upon request, and reporting any hazardous conditions to the responsible department(s);
- 2.1.4. Approving and retaining a copy of the current pre-use safety inspection checklists used by departments; and
- 2.1.5. Investigating injuries or accidents related to heavy equipment operation.

#### 2.2. Departments are responsible for:

- 2.2.1. Ensuring heavy equipment is properly guarded as specified in this Program;
- 2.2.2. Providing personal protective equipment (PPE) in accordance with the [Indiana University PPE Policy](#).
- 2.2.3. Developing, revising, and seeking approval of pre-use inspection checklists for heavy equipment as specified in this Program;
- 2.2.4. Providing inspection documentation upon request to IUEHS;

- 2.2.5. Maintaining all equipment records of pre-use safety inspections;
- 2.2.6. Initiating corrective actions for employees who violate the requirements of this Program;
- 2.2.7. Correcting equipment deficiencies that pose a hazard to employees; and
- 2.2.8. Ensuring that equipment-specific training is available and provided as specified in this Program.

**2.3. Supervisors** are responsible for:

- 2.3.1. Ensuring that heavy equipment deemed unsafe is removed from service until all hazards are corrected;
- 2.3.2. Contacting IUEHS for an evaluation of heavy equipment hazards when concerns cannot be resolved within the responsible department(s); and
- 2.3.3. Ensuring that all employees have received training as specified in this Program.

**2.4. Employees** are responsible for:

- 2.4.1. Complying with this Program, and all applicable Indiana University programs, policies, and federal, state, and local regulations;
- 2.4.2. Wearing appropriate PPE in accordance with the [Indiana University PPE Policy](#);
- 2.4.3. Performing pre-use inspections as specified in this Program;
- 2.4.4. Taking heavy equipment out of service which does not pass the pre-use inspection; and
- 2.4.5. Reporting all damaged or malfunctioning heavy equipment to the responsible supervisor and/or responsible department.

### 3. PROGRAM ELEMENTS

#### 3.1. General Requirements

- 3.1.1. All trenching and excavation performed by heavy equipment covered by this Program shall be performed in accordance with the excavation requirements specified within [29 CFR 1926.651](#).
- 3.1.2. All heavy equipment shall be equipped with roll over protective structures (ROPS), unless designed for standup operation. Seat belts shall be provided on all heavy equipment with ROPS and shall meet the requirements of the Society of Automotive Engineers, J386-1969, Seat Belts for Construction Equipment. Seat belts for agricultural and light industrial tractors shall meet the seat belt requirements of Society of Automotive Engineers J333a-1970, Operator Protection for Agricultural and Light Industrial Tractors.
- 3.1.3. No employee shall move or cause heavy equipment to be moved upon any access roadway or grade unless the access roadway or grade is constructed and maintained to accommodate the safe movement of the equipment and vehicles involved.
- 3.1.4. All heavy equipment shall have a service braking system capable of stopping and holding the equipment fully loaded as specified in [29 CFR 1926.602](#). Brake systems for self-propelled rubber-tired off-highway equipment shall meet the applicable minimum performance criteria specific in [29 CFR 1926.602](#).
- 3.1.5. ROPS, if utilized, shall meet all applicable design specifications contained within [29 CFR 1926 Subpart W App A](#).
- 3.1.6. All heavy equipment capable of bi-directional movement, such as articulating tractors, skid-steers, front-end loaders, backhoes, and similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.
- 3.1.7. Heavy equipment (i.e. capable of reverse) with an obstructed view to the rear, shall not be used unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.
- 3.1.8. All heavy equipment shall be guarded in accordance with the Indiana University Machinery and Machine Guarding Program, except when the mechanical motion is a result of forward and reverse movement of the equipment. Employees shall be restricted

from working in the path of this motion. Scissor points, which constitute a hazard to the operator during normal operation, shall be guarded.

- 3.1.9. Steering or spinner knobs shall not be attached to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin. The steering knob shall be mounted within the periphery of the wheel.
- 3.1.10. When hazards exist as a result of falling objects, protection from falling objects shall be provided to protect the employee from hazards associated with the specific operating conditions. For additional information or clarification regarding adequate overhead protection, contact IUEHS for your respective campus.
- 3.1.11. Assisting employees shall not perform work within a 10 foot radius of the heavy equipment, unless the equipment is designed to accommodate such work and does not present a hazard to the other employees. This restriction does not apply when the operator has disengaged machine movement.
- 3.1.12. Operators shall never permit employees or other bystanders to pass under a suspended load.
- 3.1.13. Operators shall use the equipment within all capacity limits specified by the manufacturer. No modifications or additions which affect the capacity or safe operation of the equipment shall be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.
- 3.1.14. Operators shall remain an appropriate distances from electrical lines and systems in accordance with the Indiana University Electrical Safety Program, unless the equipment is designed specifically for that application.

### **3.2. Inspection Requirements**

- 3.2.1. Heavy equipment covered by this Program shall be inspected prior to each use by the operator using a safety inspection checklist developed by the responsible department. Records of the pre-use inspection checklist shall be maintained by the responsible department for a period of at least 5 years.
- 3.2.2. The inspection shall include both a visual inspection list (e.g. Damage to hydraulic hoses?) and a function test list (e.g. Audible alarm works?). The safety inspection checklist shall be specific to the equipment, and approval of the checklist from IUEHS for the respective campus is required prior to putting equipment in service.
- 3.2.3. If the equipment, attachments used on the equipment, or other conditions change that present new hazards, the pre-use inspection checklist shall be revised by the department and approved by IUEHS for the respective campus prior to putting equipment in service.
- 3.2.4. Equipment shall be removed from service if conditions identified on the pre-use inspection or during operation pose a risk to the operator, other employees, or bystanders.

## **4. TRAINING & RECORDKEEPING**

### **4.1. Training**

Each department shall be responsible for providing equipment-specific operator training that includes instruction and practical training for employees who would operate heavy equipment. Training shall include at a minimum:

- 4.1.1. A description and identification of the specific hazards associated with the equipment;
- 4.1.2. Specific personal protective equipment (PPE) required for operation of the equipment;
- 4.1.3. How to perform the pre-use inspection; and
- 4.1.4. How to start, operate, and shutdown the heavy equipment safely in accordance with the manufacturer recommendations and this Program.

Training shall be provided to all new operators and associated employees. If the equipment, attachments used on the equipment, or other conditions change that present new hazards, employees shall be retrained to account for these changes.

#### **4.2. Refresher Training**

Refresher training shall be provided at least every three years.

#### **4.3. Recordkeeping**

Training records shall include equipment, trainee signature, and training date, and shall be maintained by the department for a period of at least three years.

Completion of the pre-use inspection checklist, including the signature of the operator and date, shall be maintained by the department for a period of at least two years. A log book or other means on the equipment shall be used to meet this requirement; however, it must be protected from rain and soiling to prevent damage of records.

### **5. REFERENCES**

- [29 CFR 1910.178](#) – Powered Industrial Trucks
- [29 CFR 1926.651](#) – Specific Excavation Requirements
- [29 CFR 1926.602](#) – Motor Vehicles, Mechanized Equipment, and Marine Operations
- [29 CFR 1926 Subpart W App A](#) - Rollover Protective Structures; Overhead Protection
- [Indiana Bureau of Motor Vehicles – Off-Road Vehicles](#)
- [Indiana University Aerial Lift Program](#)
- [Indiana University Electrical Safety Program](#)
- [Indiana University Machinery and Machine Guarding Program](#)
- [Indiana University Powered Industrial Truck Program](#)
- [Indiana University Procedures Affecting Golf Carts & Off-Road Vehicles \(ORVs\)](#)
- [Indiana University PPE Policy](#)
- [Society of Automotive Engineers, J386-1969, Seat Belts for Construction Equipment](#)
- [Society of Automotive Engineers J333a-1970, Operator Protection for Agricultural and Light Industrial Tractors](#)

### **6. REVISIONS**

New Document: October 14, 2015