

## *Hazard Review*

- **Being struck by the moving machine, swinging booms, or other machine components**
- **Being struck by quick-disconnect excavator buckets that unexpectedly detach from the excavator stick**
- **Rollovers**
- **Electrocution**
- **Slide into trench after cave-in**

## *Related Safe Work Practices*

- **Machine Operation**
- **Fuel Safety**
- **Overhead/Underground Electrical Lines**
- **Trenching**

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## **BEFORE**

1. Contact local utilities and other responsible parties to locate **overhead** and **underground** utility lines before beginning work. Avoid working near overhead power lines. If you must work near them, develop a plan to avoid contact and to follow minimum clearance regulations (see *Overhead/Underground Electrical Lines*).
2. Do not permit backhoes to be operated on grades steeper than those specified by the manufacturer.
3. Make sure that workers position the machinery at a safe distance from excavations, such as trenches (see *Trenching*) such that it will not cause collapse of the excavation.
4. Operators shall be trained in the proper use of the machinery they are assigned to operate. Be sure to follow manufacturer's' specifications and recommendations.

## **DURING**

1. Continually evaluate existing controls to address changing conditions at the worksite.
2. Clearly identify and label all machine controls and make sure that the manufacturers' safety features are working.
3. Install and maintain equipment attachments and their operating systems according to manufacturers' specifications.
4. Securely latch attachments (such as quick-disconnect buckets) before work begins.
5. Follow the manufacturer's instructions for using positive locks on quick-disconnect equipment.
6. Train operators to conduct visual and operational checks on all machine systems and operating controls before working the machine.
7. Make frequent visual inspections of quick-disconnect systems—especially after changing attachments.
8. Use the rollover protective structures (ROPS) and seat belts supplied by the manufacturer. Do not remove the ROPS.
9. Do not exceed load capacities when lifting materials.
10. Instruct operators to lower the boom to a safe position with the bucket on the ground and turn off the machine before stepping off for any reason.

### Other Site Workers

1. Other site workers may include, but is not limited to workers from other departments or other RPD personnel. They may not be familiar with working around machinery or on construction sites, and therefore may be at higher risk of injury. Train these site workers to recognize and avoid unsafe conditions and to follow required safe work practices that apply to their work environments.
2. Make all workers on the site aware of the machines' established swing areas and blind spots before the operator works the machine. Keep workers on foot outside these areas by marking them with rope, tape, or other barriers.
3. Before each work shift begins, review and confirm communications signals that will be used between machine operators and workers on foot.
4. Instruct machine operators to keep the bucket as close to the ground as possible when workers are attaching loads for hoisting.

5. Keep workers outside the hydraulic excavator swing areas and clear of attachments when using the machines for hoisting materials. Do not allow workers to stand under suspended loads or suspended machine components such as the boom, arm, or bucket.
6. Do not permit workers on foot to approach the hydraulic excavator or backhoe loader until they signal the operator to shut down the machine and receive acknowledgment from the operator.
7. Use spotters or signal persons around operating equipment when necessary.
8. Never permit workers to ride in or work from excavator or backhoe loader buckets.
9. Provide appropriate personal protective equipment and make sure that workers use and maintain it.

### **AFTER**

1. Report any problem or deficiencies noted during your shift. If the problem is serious, make it your responsibility to have the vehicle removed from service.

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### Reference:

1. "Preventing Injuries When Working with Hydraulic Excavators and Backhoe Loaders", CDC Workplace Solutions, November 2003.