

# Operation and Maintenance of Dams - Safety in the Field



Earthen dams require regular operation and maintenance. Many of the activities performed require the use of equipment and sometimes involve safety risks. Watershed project sponsors need to ensure that these activities are performed in a safe manner.

The fact sheet isn't meant to cover all of the safety issues involved with O&M operations, but to point out and emphasize some of the major issues and to encourage watershed project sponsors to review their operations to make sure they have a good safety program. Listed here are some of the major types of O&M activities where special emphasis should be placed to keep employees safe.

Where possible, a good rule to follow is to have at least two employees on a site in case there is an accident or issue. Always take time to ensure someone knows where the employee is working and their time schedule. While employees may be working in rural areas where there is limited cell phone coverage, make sure all parties have the appropriate contact information for local emergency services as well as the numbers to easily keep the Field staff and the Office staff connected.

## Safety Plan and Training

The most effective way watershed project sponsors can limit safety and liability issues in O&M operations is to develop and carry out a safety plan.

The plan should outline the proper safety procedures for all the different jobs performed. It should also include the types of training and/or supervision needed for each job.

The plan should outline the kinds of safety equipment needed and required (hard hats, gloves, etc.) Essential safety equipment should be provided by sponsor. Gloves, eye protection, hard hats and safety footwear are basic. Training in basic first aid procedures and CPR should also be provided to employees.

## Mechanical Removal of Trees

Trees can be removed by machinery or by chain saws. If employees use a chain saw they should use proper safety gear, such as goggles, safety boots, gloves, etc. and they should have basic training on use of the chain saw.



There are often safety and economic advantages to hiring someone with specialized equipment to perform jobs like removing trees from a dam.

### **Spraying for Brush or Weeds**

Chemical spraying can be an effective way to control weeds and brush, but it comes with both safety and liability issues.

Employees should have training on what conditions are required for safe spraying operations such as wind speed. Many states require certification training before people can spray certain chemicals.

Employees also need to know what might be affected from spray drift and if adjoining landowners have crops or trees that might be damaged by spray drift.

Some herbicides can be dangerous to a person's health, so masks, proper clothing and proper mixing, handling and spraying should be carried out as prescribed by the chemical labels and safety plan.

### **Mowing Operations**

Mowing for weeds and brush can be an especially hazardous job because of the steepness of the front and back slopes. Other hazards include rodent tunnels and eroded areas on dams that may not be visible as well as ground nesting stinging insects and venomous snakes.

Special mowers may be required and employees should have training and experience in the use of mowers on slopes.

### **Divers for Clearing Debris in Inlet Tower**

When a lower gate on the inlet tower that is used to release water from the reservoir can't be opened or it is open and is blocked by debris. A diver might be used to access the problem.

This can be an extremely dangerous situation and individuals have lost their lives when pulled into the tower or pipe by the force of the water. Inexperienced divers should never be used in this situation. There are professional divers that have the understanding and experience to address these issues.

### **Inspecting or Working Inside the Inlet Tower – Confined Space**



An inlet tower on the principal spillway of a dam might be considered a confined space requiring specialized training. The training is available on line on the National OSHA Confined Space Training and Certification Web Page. It is an on line course that only takes about an hour to complete..

Hazards inside an inlet tower include insects, reptiles, animals, slip and falls, and possible concentrations of various gases that create an oxygen deficient environment. The danger of drowning or being swept down the conduit if the lower gate is suddenly freed of debris should also be given serious consideration.

Visit the National Watershed Coalition web page: [www.watershedcoaliton.org](http://www.watershedcoaliton.org) for announcements of upcoming workshops and webinars on subjects like operation and maintenance of watershed dams.

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