

# DRI Tower Safety Guidelines

## **Introduction**

Work on meteorological towers and masts presents a safety hazard to DRI personnel involved in the work and to others at ground level who may or may not be directly involved in the work. This safety guideline is intended to cover the basic safety precautions necessary when undertaking work on towers and is based on current accepted practice. Safety concerns are primarily associated with climbing, erecting, and lowering or dismantling towers.

## **Erecting and Dismantling Towers**

BE SURE TO FOLLOW ALL TOWER MANUFACTURERS RECOMMENDATIONS REGARDING TOWER ERECTION.

THE APPROPRIATE ENGINEERING DISCIPLINE MUST BE CONSULTED TO DEVELOP THE DESIGN SPECIFICATIONS WHEN BUILDING A TOWER IF AN ALREADY-MANUFACTURED SOLUTION CANNOT BE EMPLOYED.

During erection and dismantling of towers, hazards exist from accidentally dropping tower sections or having a part of the structure come in contact with overhead electrical power lines. The tower fall zone, the area where all or part of the tower could fall, must be clear of objects or infrastructure. On a busy site, this area should be cordoned off.

Towers should be grounded according to the manufacturer's instructions.

Those working on the tower should wear appropriate clothing (no loose clothing), which may include gloves, boots, hard hats, and safety glasses.

Tower activity should be restricted to daylight hours unless adequate lighting is provided for personnel working on the tower.

## **Support Hazards (if present)**

Guy wires, posts, and supports are often difficult to see, especially in areas with tall weeds and in low light conditions. Guy wires, posts, and supports should be marked with bright colored, reflective tape. Fencing may be used to surround tall tower structures and their guy wire anchors, especially on areas near farmland and land where cattle graze.

## **Weather Hazards**

Consult the weather forecast before erecting towers.

Do not erect towers in high winds.

Make note of thunderstorm activity and possible lightning before beginning tower work. Terminate tower work immediately if lightning activity is observed. All personnel shall remain at a safe distance away

from towers when lightning is occurring in the vicinity. It is recommended that personnel use a lightning detection unit when working with towers.

While working in winter, beware of falling ice and slippery surfaces on the tower. Ensure footholds are clear before taking the next step up or down the tower.

### **Climbing Towers**

Prior to climbing the tower, confirm tower loading and inspect overall tower integrity. For falls greater than 4 feet, fall protection equipment must be used; the anchor points for personal fall arrest systems must be rated at 5000 pounds per person. Confirm tower loading specifications by using the engineering specifications of the tower to confirm it will hold the intended load OR by using the manufacturer's specifications for tower loading.

If the tower does not meet specifications or specifications cannot be verified, climbing on the towers above 4 feet is PROHIBITED, regardless of the type of fall protection available. If it is necessary to service tower heights above 4 feet on a tower that does not meet fall protection specifications, it may be possible to use an A-Frame ladder stabilized at its base to prevent tip-over while in use to do the work. Otherwise, the tower needs to be laid on the ground to complete the work or a contractor with equipment and a Fall Protection Program that meet OSHA requirements will perform work on the tower. DRI employees are not permitted to use contractor-owned equipment.

Tower activity should be restricted to daylight hours unless adequate lighting is provided for personnel working on the tower.

### **Positioning Instruments on Towers**

Beware of falling object dangers when instrumentation is attached to towers. Keep in mind that hardware (bolts, tie downs, screws, etc.) may work loose over time and can present a hazard. Ensure that all cables are properly insulated and securely tied to the tower to avoid electrocution dangers from power cords and instrument damage in data cables.

### **Inspection and Maintenance Checklist**

Inspection and maintenance of towers will be performed prior to any work on or around the tower, and especially after extreme wind events and heavy precipitation. This pre-work visual inspection will be documented. The inspection and maintenance checklist shall include the following:

- Check anchors and connections
- Check for erosion at base of tower and soil around base
- Check for loose or missing bolts and repair or replace
- IF PRESENT, check guy wires and supports for tension