

# Site Inspection Outline

## 1. Overview

- a. Purpose of Site Inspection
- b. Site Inspection Frequency
- c. Inspection Preparation
- d. Pre-Inspection of Site
- e. Inspecting a Site
- f. Use of a Drone
- g. Site Inspection Report
- h. Conclusion
- i. *Note – This training module is geared toward the tower industry but can be applied to all industries*

## 2. Purpose of Site Inspection

- a. Site inspections must be a critical component of your company's safety program, they will warn you of possible hazards and prevent a future occurrence of an incident. Under OSHA your company has to provide a safe and healthful workplace, and through site inspections your company can find and fix hazards that would prevent them from providing a safe and healthful workplace
- b. The goal of Site Inspections
  - i. Identify and record potential hazards in the workplace
  - ii. Identify and record hazards that require immediate attention
  - iii. Evaluate the structural integrity
  - iv. Evaluate the equipment integrity
  - v. Identify corrective actions that need to be implemented

## 3. Site Inspection Frequency

- a. Annual – At a minimum you should perform a site inspection yearly
- b. Initial – If you have never worked on the site then you should perform an inspection before work is started
- c. Natural Disaster – After a environmental disaster a site inspection should be performed (i.e. Tornado, Flood, Earthquake, etc.)
- d. Man Made Disaster – After any indication of any man made disasters (i.e. Fire, Theft, Vandalism, etc.)
- e. Geographic Location – inspection of tower sites on or near large bodies of water will require more frequent inspections because of the corrosive effects

## 4. Inspection Preparation

- a. Inspection Team
  - i. Upper Management
  - ii. Worksite Supervisor
  - iii. Safety Supervisor
  - iv. Structural Engineer(If Available)
  - v. Worksite Employees

- b. Required Site Inspection Toolkit**
  - i.** Notepad
  - ii.** Pens & Pencils
  - iii.** Graph Paper
  - iv.** Straight Edge Ruler
  - v.** Tape Measure (preferably 100' or more)
  - vi.** Digital Camera
  - vii.** Tension Meter (Only necessary for guyed towers)
- c. Optional Site Inspection Tools**
  - i.** Quadcopter Drone
  - ii.** Video Camera

## **5. Pre-Inspection of Site**

- a. Satellite Images**
  - i.** The use of satellite images is a valuable tool if you will be performing an initial site inspection. Satellite images will help give a general layout of the site and allow you to see some types of natural hazards (e.g. cliff, bodies of water, etc.). By using satellite images before you go to the site you can also get an idea of whether it is an urban or rural site.
- b. Geographic Region**
  - i.** By study the geographic region you can plan for wildlife and weather hazards.
- c. Area Demographics**
  - i.** The second leading cause of worker fatalities is workplace violence. Because of this fact you want to study the crime rates for the area where the site is located. Copper theft is a growing trend and it especially applies to the communication industry. Copper thieves have been reported as showing up on sites with guns.

## **6. Inspecting a Site**

- a.** Before inspecting the site you will want to draw a sketch of the area. This way you can make notations on the sketch when you come across any hazards.
- b.** As you are inspecting the site you will want to take pictures of any hazards. The pictures should be taken from different angles.
- c.** If the tower is believed to be damaged from a natural disaster then you will want to have an engineer test the concrete at the base of the tower. This test will be able to inform you whether or not the concrete is cracked below ground level.
- d. Self-Supporting Towers Inspection**
  - i.** When inspecting the tower structure you want to look for the following hazards:
  - ii.** Damaged legs and lacing
  - iii.** Loose members
  - iv.** Missing members
  - v.** Ladder device missing or damaged

- vi. Platforms in good condition
- vii. Catwalk in good condition
- viii. No loose and/or missing bolts
- ix. Condition of paint is acceptable
- x. No abnormal corrosion
- xi. Antenna mounts properly secured
- xii. The base of the tower needs to be inspected for signs of abnormal erosion, the condition of the concrete, and missing or damaged nuts or bolts.
- xiii. The ground system also needs to be inspected and make sure the connections are secure, no abnormal corrosion, and the lightning protection is secured.
- e. Guyed Tower Inspection
  - i. A guyed tower inspection will be the same as the inspection for a self-supporting tower. The differences will be as follows:
    1. Check the anchors and look for erosion or soil cracks
    2. Check the anchor rod condition
    3. Make sure the anchor head is clear of earth
    4. Check the tension of the guy wires with a tension meter according to the manufacturers recommendations
    5. Make sure turnbuckles are secured
    6. Check the guy wire clamps and nuts
    7. Make sure the guyed wires do not show any signs of damage
    8. Check the guy attachments to the tower

## 7. Use of a Drone

- a. Using a drone to perform tower inspections is starting to become a popular alternative to climbing the tower due to the low cost of a drone, it's ease of use, and the fact that it's safer then climbing.
- b. *The following slides will be pictures and videos of inspecting a tower with a drone*

## 8. Site Inspection Report

- a. The site inspection report is used to point out hazards on the site and provide recommendations to fix those hazards or provide protection from them. Once the report is closed it must be filed away for future reference.
- b. Section I
  - i. Site name and address
  - ii. Date of inspection
  - iii. Site inspection team members
- c. Section II
  - i. Location and description of any hazards found
  - ii. Recommendations of corrective action to fix hazards
  - iii. Dates corrective actions are to be complete by
- d. Section III

- i.* This section applies to guy towers only. The reason that you need to add wind speed and air temperature is because the tension of the guy wires will be different in varying weather conditions.
  - ii.* Air Temperature
  - iii.* Wind Speed
  - iv.* Cable Size
  - v.* Leg #
  - vi.* Guy Level
  - vii.* Measured Tension
  - viii.* Proper Tension
- e.* Section IV
  - i.* Names of personnel responsible for performing corrective actions
- f.* Section V
  - i.* Date all corrective actions are completed (This is the date the report is closed out)
- g.* Section VI
  - i.* This section will be the appendix where you will include all photos, sketches, and any notes

## **9. Conclusion**

- a.* The site inspection needs to be an important part of your safety program. A successful site inspection will point out hazards on the job location and prevent a future incident from happening. An informal site inspection needs to be an ongoing occurrence where you are always watching out for any new hazards that appear.