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**NATIONAL
ASSOCIATION OF
TOWER ERECTORS**

**SUGGESTED
SIGNAGE
PROTOCOL**

*Foreman's
Reference Guide*

Spring 2001

Thank you for supporting the National Association of Tower Erectors (NATE) through your purchase of a NATE safety resource. NATE compiles safety resources and makes them available to our members as a resource for their company safety programs.

By accepting this safety resource, you hereby acknowledge that you are solely responsible for the development of your program and training of the individuals in your company.

Furthermore, NATE expressly notifies you that you are responsible for knowing and following all applicable regulations and laws regarding tower and tower-related safety issues. The use of the concepts and techniques provided in this safety resource is at your sole discretion and at your own risk. This safety resource should not be construed as legal advice or a legal option on any specific facts or circumstance or as creating any warranties or other legal obligation, either expressed or implied.

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NOTES:

ACKNOWLEDGEMENT

The National Association of Tower Erectors (NATE) would like to thank all of the NATE members who have worked diligently to make this publication a reality. Without their dedication, time and talents, this publication would not be possible.

REFERENCED STANDARDS

CFR 1910.145	SPECIFICATION FOR ACCIDENT PREVENTION SIGNS AND TAGS
CRF 1926.200	ACCIDENT PREVENTION SIGNS AND TAGS
CFR 1910.97	NON-IONIZING RADIATION
CFR 1926.150	FIRE PROTECTION
CFR 1926.103	RESPIRATORY PROTECTION
FCC	FEDERAL COMMUNICATION COMMISSION
CFR 1920.301 AND 1926.400	ELECTRICAL
CFR 1910.251	WELDING, CUTTING AND BRAZING
CFR 1926.550	CRANES, DERRICKS AND HOISTS
CFR 1926.651	EXCAVATIONS

NOTES:

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INTRODUCTION

This is a reference publication designed to provide NATE member companies with certain guidelines for providing the proper OSHA required hazard warning signs for worker information and protection.

The information in this guide is intended to provide a generic, non-exhaustive overview of the common work-related activities for most broadcast and communication type towers.

This publication does not determine compliance responsibilities. Any company, whether or not a NATE member company, using this publication as a guide to implementing a portion of their “on-site” requirements, assumes all responsibility for their actions and agrees to hold harmless and completely indemnify the National Association of Tower Erectors, its Directors, Officers, Staff and any and all assigns, from any and all possible legal action.

SITES WITH PEDESTRIAN AND VEHICULAR TRAFFIC

SIGNS REQUIRED:

- 1) Danger: Men Working Above
- 2) Barricades
- 3) Caution Tape
- 4) Cones
- 5) Detour

WHERE SIGNS SHOULD BE POSTED:

- In the area of contact with pedestrians (1, 2, 3, 4, 5)
- To stop traffic, a permit may be required.
- A signal person may be required in addition to the signs and barricades.

SIGNAGE FOR SITES WITH PEDESTRIAN AND VEHICULAR TRAFFIC



GENERAL

Signs fall into three basic categories: Danger, Caution and Instruction.

DANGER

OSHA 1910.145 states that there shall be no variation in the type of design of signs posted to warn of specific dangers, electrical and radiation hazards. All employees shall be instructed that danger signs indicate immediate danger and that special precautions are necessary. The colors shall be red, black and white.

CAUTION

Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices. All employees shall be instructed that caution signs indicate a possible hazard against which proper precaution should be taken. The standard color of the background shall be yellow; and the panel black with yellow letters. Any letters used against the yellow background shall be black.

INSTRUCTION

Safety instruction signs shall be furnished with rounded or blunt corners and shall be free from sharp edges, burrs, splinters, or other sharp projections. The ends or head of bolts or other fastening devices shall be located in such a way that they do not constitute a hazard. Standard color of the background shall be white; and the panel green with white letters. Any letters used against the white background shall be black.

POSTING LOCATIONS

Signs will be posted at any location which could allow access to the site. Additional signs will be posted throughout the site to provide additional warnings.

Not all signs will be required for all projects and the number used will vary. **Signs not required for a specific project posted anyway is a violation in itself.**

EXAMPLE LOCATIONS

- Entry to the site.
- Within 100 feet of the base of the tower.
- At all points which may allow individuals to approach the tower.
- At the base of the tower.
- At the hoist.
- At any point of high voltage.
- Designated storage area for gasoline, diesel, and flammable materials.
- Office, trailer or designated meeting area.

FIRE HAZARD

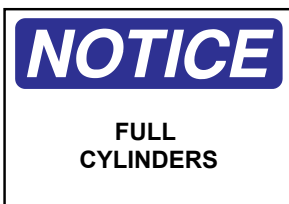
SIGNS REQUIRED:

- 1) Danger: Flammable Liquids
- 2) Danger: Flammable Gas
- 3) Danger: Flammable Materials
- 4) Danger: Fuel Storage - No Smoking
- 5) Danger: No Smoking, Matches or Open Lights
- 6) Danger: Battery Charging Area - No Smoking or Open Flame
- 7) Notice: Full Cylinders
- 8) Fire Extinguisher (No closer than 10' or farther than 20')

WHERE SIGNS SHOULD BE POSTED:

- The choice of sign is dependent upon the use. Flammable storage will be away from other materials.
- Located above welding cylinders (7)
- Located by fire extinguisher (8)

SIGNAGE FOR FIRE HAZARD



ROOF TOP LOCATIONS

Roof top work must be evaluated for the area of the roof being worked on. Standard signs for the work being performed will be posted.

Posting will change normally to entry and egress locations. Depending upon the area being worked, additional signage for pedestrians may be needed.

Roof top safety requires at least a boundary be established 6 feet from the edge unless there is a parapet of sufficient height. It may also become necessary for a safety watch to be stationed for worker safety.

BOOM TRUCKS, A FRAMES & FORK LIFTS

All appropriate signs need to be properly displayed on each vehicle.

SIGNAGE FOR WINCHES



NEAR POWER LINES

SIGNS REQUIRED:

- 1) Danger: High Voltage - Do Not Operate Within 10 Feet
- 2) Signs as per work being performed

WHERE SIGNS SHOULD BE POSTED:

- At all locations which fall within a 10 foot area around the work (1)

SIGNAGE FOR NEAR POWER LINES



WINCHES

SIGNS REQUIRED:

- 1) Danger: Keep Hands Away From Wire Rope and Drum
- 2) Notice: Hoist Capacity: _____ lbs. Materials Only
- 3) Notice: Hoist Capacity: _____ lbs. Personnel Only
- 4) Warning: Hydraulic Oil Reservoir May Be Hot
- 5) Danger: Fuel Storage - No Smoking
- 6) Fire Extinguisher (location)
- 7) Danger: Maintain At Least Five (5) Wraps On Drums At All Times
- 8) Danger: Do Not Talk To Operator While Machine Is In Operation
- 9) Warning: Hearing Protection Required
- 10) First Aid Kit
- 11) Standard Hand Signals For Cranes

WHERE SIGNS SHOULD BE POSTED:

- Near the winch or drum body (1)
- On the winch (2, 3)
- On the tank or the cap (4)
- Fuel or flammable material storage area (5)
- On the winch with arrow sign pointing to fire extinguisher (6)
- Within sight of the winch operator (7)
- On the winch or posted for anyone approaching the area to be able to read before reaching the operator (8)
- Around the Winch Operator Station (9, 11)
- At site office (10)

SIGNAGE FOR TOWER OR SITE INSPECTION



MAINTENANCE WORK

SIGNS REQUIRED:

- 1) Danger: Hard Hat Required
- 2) Danger: Men Working Above
- 3) Caution: Fall Protection Required
- 4) Danger: Falling Material
- 5) Danger: Fuel Storage - No Smoking
- 6) Danger: Protective Equipment Must Be Worn In This Area At All Times
- 7) Danger: Radio Frequency Hazard
- 8) Caution: Eye Protection Required In This Area
- 9) Emergency Data and Phone Numbers (site specific)
- 10) Danger: Stay Time
- 11) Notice: Not An Entrance, Enter At Front
- 12) Notice: Stop, No Entry Without Registering With Foreman Or At Front Office

WHERE SIGNS SHOULD BE POSTED:

- At entry to the site (1, 2, 4)
- Within 100 feet of the base of the tower (1, 2, 4)
- At the entry point of the tower (1, 2, 3, 4, 8, 9)
- At the base of the tower (2, 3, 4, 8, 9)
- Fuel or flammable material storage area (5)
- RF levels are present but below limits (7, 11, 12)
- RF levels are present at levels that require protective equipment (6, 7, 11, 12)
- RF levels are present at levels that require monitored stay times (6, 7, 10, 11, 12)

SIGNAGE FOR MAINTENANCE WORK



TOWER OR SITE INSPECTION (INCLUDES RELAMPING)

SIGNS REQUIRED:

- 1) Danger: Hard Hat Required
- 2) Danger: Men Working Above
- 3) Caution: Fall Protection Required
- 4) Danger: Falling Material
- 5) Emergency Data and Phone Numbers (site specific)
- 6) Danger: Radio Frequency Hazard
- 7) Danger: Protective Equipment Must Be Worn In This Area At All Times
- 8) Danger: Stay Time
- 9) Notice: Not An Entrance, Enter At Front
- 10) Notice: Stop, No Entry Without Registering With Foreman Or At Front Office

WHERE SIGNS SHOULD BE POSTED:

- At entry to the site (1, 2, 4)
- Within 100 feet of the base of the tower (1, 2, 4)
- At the entry point of the tower (1, 2, 4)
- At the base of the tower (3, 5)
- RF levels are present but below limits (6, 9, 10)
- RF levels are present at levels that require protective equipment (6, 7, 9, 10)
- RF levels are present at levels that require monitored stay times (6, 7, 8, 9, 10)

SIGNAGE FOR RIGGING THE TOWER



RUST TREATING AND PAINTING

SIGNS REQUIRED:

- 1) Danger: Hard Hat Required
- 2) Danger: Men Working Above
- 3) Caution: Fall Protection Required
- 4) Danger: Falling Material
- 5) Danger: Fuel Storage - No Smoking
- 6) Danger: Protective Equipment Must Be Worn In This Area At All Times
- 7) Danger: Radio Frequency Hazard
- 8) Caution: Eye Protection Required In This Area
- 9) Caution: Wear Your Respirator
- 10) Notice: No Alcohol Or Drugs Allowed On These Premises
- 11) Emergency Data and Phone Numbers (site specific)
- 12) Danger: Stay Time
- 13) Notice: Not An Entrance, Enter At Front
- 14) Notice: Stop, No Entry Without Registering With Foreman Or At Front Office

WHERE SIGNS SHOULD BE POSTED:

- At entry to the site (1, 2, 4, 8, 10)
- Within 100 feet of the base and/or the entry point of the tower (1, 2, 3, 4)
- At the base of the tower (1, 2, 3, 4, 6, 8, 9, 10, 11)
- Fuel or flammable material storage area (5)
- RF levels are present but below limits (7, 13, 14)
- RF levels are present at levels that require protective equipment (6, 7, 13, 14)
- RF levels are present at levels that require monitored stay times (6, 7, 12, 13, 14)

SIGNAGE FOR RUST TREATING AND PAINTING



RIGGING THE TOWER

SIGNS REQUIRED:

- 1) Danger: Hard Hat Required
- 2) Danger: Men Working Above
- 3) Caution: Fall Protection Required
- 4) Danger: Crane Overhead (if applicable)
- 5) Danger: Fuel Storage - No Smoking
- 6) Danger: Do Not Talk To Operator While Machine Is In Operation
- 7) Warning: Hearing Protection Required
- 8) Notice: No Alcohol Or Drugs Allowed On These Premises
- 9) Standard Hand Signals For Cranes
- 10) Emergency Data and Phone Numbers (site specific)

WHERE SIGNS SHOULD BE POSTED:

- At entry to the site (1, 2, 4, 9)
- Within 100 feet of the base and/or the entry point of the tower (1, 2, 3, 4)
- At the base of the tower (1, 2, 3, 4, 10)
- Fuel or flammable material storage area (5)
- At the hoist (6, 7, 9)

SIGNAGE FOR FOUNDATION INSTALLATION



INSTALLATION OF ANTENNAS OR TRANSMISSION LINES

SIGNS REQUIRED:

- 1) Danger: Hard Hat Required
- 2) Danger: Men Working Above
- 3) Caution: Fall Protection Required
- 4) Danger: Crane Overhead (if applicable)
- 5) Danger: Fuel Storage - No Smoking
- 6) Danger: Do Not Talk To Operator While Machine Is In Operation
- 7) Warning: Hearing Protection Required
- 8) Notice: No Alcohol Or Drugs Allowed On These Premises
- 9) Danger: Protective Equipment Must Be Worn In This Area At All Times
- 10) Danger: Falling Material
- 11) Danger: No Smoking, Matches or Open Lights
- 12) Warning: Authorized Personnel Only
- 13) Caution: Wear Your Respirator (if required)
- 14) Caution: Wear Eye Protection
- 15) Caution/Warning: Look Out For Trucks
- 16) Fire Extinguisher
- 17) First Aid
- 18) Speed Limit
- 19) Standard Hand Signals For Cranes
- 20) Emergency Data and Phone Numbers (site specific)
- 21) Danger: Radio Frequency Hazard
- 22) Danger: Stay Time
- 23) Notice: Not An Entrance, Enter At Front
- 24) Notice: Stop, No Entry Without Registering With Foreman Or At Front Office

WHERE SIGNS SHOULD BE POSTED:

- At entry to the site (2, 4, 8, 9, 10, 12, 15, 18)
- Within 100 feet of the base of the tower (1, 2, 4, 10, 14)
- At the base of the tower (1, 2, 3, 10, 14)
- At the hoist (6, 7, 19)
- At flammable storage area (5, 11, 16)
- At site office (13, 17, 20)
- RF levels are present but below limits (21, 23, 24)
- RF levels are present at levels that require protective equipment (9, 21, 23, 24)
- RF levels are present at levels that require monitored stay times (9, 21, 22, 23, 24)

SIGNAGE FOR INSTALLATION OF ANTENNAS OR TRANSMISSION LINES



FOUNDATION INSTALLATION

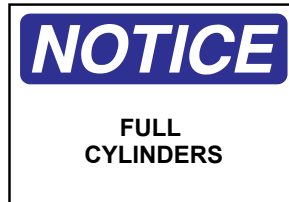
SIGNS REQUIRED:

- 1) Danger: Hard Hat Required
- 2) Danger: Open Trench/Pit
- 3) Caution: Barricades
- 4) Danger: Fuel Storage - No Smoking
- 5) Caution: Watch For Lift Trucks
- 6) Caution: Look Out For Trucks
- 7) Emergency Data and Phone Numbers (site specific)

WHERE SIGNS SHOULD BE POSTED:

- At entry to the site (1, 5, 6)
- At the location of the excavation (2, 3, 6)
- At the flammable storage area (4)
- At the office or in the area of work (7)

SIGNAGE FOR TORCH/WELDER/ GRINDER



TOWER ERECTION

SIGNS REQUIRED:

- 1) Danger: Hard Hat Required
- 2) Danger: Men Working Above
- 3) Caution: Fall Protection Required
- 4) Danger: Crane Overhead (if applicable)
- 5) Danger: Fuel Storage - No Smoking
- 6) Danger: Do Not Talk To Operator While Machine Is In Operation
- 7) Warning: Hearing Protection Required
- 8) Notice: No Alcohol Or Drugs Allowed On These Premises
- 9) Danger: Protective Equipment Must Be Worn In This Area At All Times
- 10) Danger: Falling Material
- 11) Danger: No Smoking, Matches or Open Lights
- 12) Warning: Authorized Personnel Only
- 13) Caution: Wear Your Respirator (if required)
- 14) Caution: Wear Eye Protection
- 15) Caution/Warning: Look Out For Trucks
- 16) Fire Extinguisher
- 17) First Aid
- 18) Speed Limit
- 19) Standard Hand Signals For Cranes
- 20) Emergency Data and Phone Numbers (site specific)

WHERE SIGNS SHOULD BE POSTED:

- At entry to the site (2, 4, 8, 9, 10, 12, 15, 18)
- Within 100 feet of the base of the tower (1, 2, 4, 10, 14)
- At the base of the tower (1, 2, 3, 10, 14)
- At the hoist (6, 7, 19)
- At flammable storage area (5, 11, 16)
- At site office (13, 17, 20)

SIGNAGE FOR TOWER ERECTION



TORCH/WELDER/GRINDER

SIGNS REQUIRED:

- 1) Caution: Welding Area
- 2) Caution: Full Cylinders
- 3) Caution: No Smoking, Matches or Open Lights
- 4) Danger: Do Not Watch Arc or Welder Without Proper Eye Protection

WHERE SIGNS SHOULD BE POSTED:

- Within 20 feet and at the area of welding (1, 3, 4)
- At cylinder storage area (2, 3)

SIGNAGE FOR RF SAFETY



RF SAFETY

SIGNS REQUIRED:

- 1) Danger: Radio Frequency Hazard
- 2) Danger: Protective Equipment Must Be Worn In This Area At All Times
- 3) Danger: Stay Time
- 4) Notice: Not An Entrance, Enter At Front
- 5) Notice: Stop, No Entry Without Registering With Foreman Or At Front Office

WHERE SIGNS SHOULD BE POSTED:

- RF levels are present but below limits (1, 4, 5)
- RF levels are present at levels that require protective equipment (1, 2, 4, 5)
- RF levels are present at levels that require monitored stay times (1, 2, 3, 4, 5)