

# ARE YOU MAKING THE GRADE?

## Turn to the Chance® Grounding Experts to Meet OSHA Guidelines

### DO YOU KNOW...

- the last time you reviewed your temporary grounding practices?
- your present maximum fault current levels (Transmission, Distribution, Substation)?
- of any changes to your system affecting the fault current levels?
- the Rating or ASTM grade level of your temporary grounding equipment?
- the condition of your temporary grounding equipment?
- how often your temporary grounding equipment is tested?
- industry “best practice” is to test temporary grounding equipment every 12 months?
- if your crews are properly trained on equipotential grounding?
- if you have proper equipotential grounding equipment?
- if your crews are using equipotential grounding?

### OSHA 1910.269 HAS MANDATED EQUIPOTENTIAL GROUNDING SINCE 1994 - ARE YOU COMPLIANT?

#### OSHA Standard 1910.269(n)(3)

“Temporary protective grounds shall be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to hazardous differences in electrical potential.”

#### OSHA Standard 1910.269(n)(2)

“For any employee to work transmission and distribution lines or equipment as deenergized, the employer shall ensure that the lines or equipment are deenergized under the provisions of paragraph (m) of this section and shall ensure proper grounding of the lines or equipment as specified in paragraphs (n)(3) through (n)(8) of this section.”



A common practice (as shown left) is to connect from the cluster bar to the neutral, and then from the neutral to the outside phase; however, per OSHA the connection from the neutral should be to the center phase and then from the center phase to the two outside phases.

### DO YOU ALSO KNOW...

- Chance® has been offering temporary grounding equipment since 1937?
- Chance offers the Encyclopedia of Grounding?
- Chance offers Equipotential Grounding Seminars, field training and instructional videos?
- Chance offers an online ground set configurator to quickly design your custom ground set?
- Chance offers a quick ship program to meet your urgent temporary grounding needs?
- Chance has three product demonstrators with over 100 years of combined line maintenance experience?
- Chance offers an easy-to-use, portable DC Ground Set Tester (meets ASTM F2249)?
- Chance manufactures a full line of grounding equipment up to ASTM grade 5H and IEC 35kA for Transmission, Distribution and Substations?
- Chance has a high current test lab with the capability of symmetrical test currents of 125kA for 3 seconds and peak currents exceeding 200kA?

# SUPPLEMENTAL INFORMATION

## **Do you know the last time you reviewed your temporary grounding practices?**

A utility should review its temporary grounding practices periodically per their company policy and whenever there is a change in their system, in OSHA guidelines, or in other industry standards.

## **Do you know your present maximum fault current levels (Transmission, Distribution, Substation)?**

Maximum fault current levels can vary depending on system design, where the work is being performed relative to generation and substations, or other factors. Linemen should know the maximum available fault current level for the work location to insure proper sizing of their temporary grounding equipment. This fault current level should be available from the system engineers.

## **Do you know of any changes to your system affecting the fault current levels?**

Major buildups, addition of substations, increased generation capacity, or other changes could result in increased fault current levels.

## **Do you know the Rating or ASTM grade level of your ground equipment?**

Your ground set rating needs to meet or exceed the maximum available fault current and duration. The lowest rated component determines the overall rating of the temporary grounding equipment. See ASTM F855 Table 1 and 2 for ASTM grade levels.

## **Do you know the condition of your temporary grounding equipment?**

Linemen should inspect their temporary grounding equipment before each use. Things to look for include frayed cable, damaged or cracked components, loose connections, and dirty or corroded clamps. These can all result in inadequate protection. Damaged temporary grounding equipment should be removed from service. The clamp contact area should be cleaned before each use. Ground set deterioration can occur because of poor storage; therefore, ground sets should be stored in protective storage bags to prevent contamination and damage. Also, ground sets that have seen a fault current must be removed from service.

## **Do you know how often your grounding equipment is tested?**

Temporary grounding equipment should be tested periodically. Testing frequency is determined by the utility/user based on company policy, equipment use, environment, work conditions, storage and handling practices, and care and maintenance practices.

## **Do you know industry “best practice” is to test grounding equipment every 12 months?**

The majority of electric utilities test ground sets every 12 months. Many statewide coop groups provide safety trainers to conduct this service for their members.

## **Do you know if your crews are properly trained on equipotential grounding?**

Proper training is critical for lineman safety. Without training and proper equipment, your crews will not be adequately protected.

## **Do you know if you have proper equipotential grounding equipment?**

Converting to equipotential grounding typically only requires the addition of a cluster bar and a personal ground set to your existing temporary grounding equipment.

## **Do you know if your crews are using equipotential grounding?**

Remember that OSHA has mandated equipotential grounding since 1994. It is the best known practice for keeping linemen protected should a fault current occur during de-energized work.



This is what it looks like when an undersized or improperly installed temporary ground set fails.

SF\_09\_087\_E