
March 2002

Industry alert on temporary ground connection

During testing of some temporary ground connections, it was found that when subjected to available fault currents the ground connections failed violently. This could potentially injure people in the vicinity. ESA has no known accidents or injury data involving temporary ground connections and their failure, but the potential of a serious injury or fatality exists.

Purpose of temporary ground services

Temporary ground, safety grounds are conductors which serves two purposes;

1. to pass current to ground in case of the line becoming inadvertently energized and cause a protective device to operate, and
2. to drain any induced current that may be present from other lines in the vicinity that are still energized.

The current carrying capacity of the temporary ground must be at least the same as the lines that it is being attached to, preferably larger to provide a safety factor

Suggested Guidelines

When installing temporary ground connections, ensure that it complies with the OSHA section 42, of the Industrial Regulations. In addition, a very comprehensive Work Protection Code to prevent injuries must also exist.

The Work Protection Code must have the following;

1. All precaution to ensure that lines are de-energized and that hot sticks and gloves are used to ensure your safety in case the line was still energized.
2. Provision to ensure the power supply to electrical installations, equipment or conductors are disconnected, locked out of service and tagged before any work is done, or when while it is being done on or near live exposed parts of the installations, equipment or conductors.
3. Making the length of safety ground as short as possible to minimize the violent effect

In certain cases, locking out may not be required and these are the conditions

- (a) if the conductors are adequately grounded with a visible grounding mechanism; or
 - (b) if the voltage is less than 300 volts and there is no locking device for the circuit breakers or fuses and procedures are in place adequate to ensure that the circuit is not inadvertently energized.
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