

Date: Mon, 14 Aug 2000 16:11:17 -0600
From: Meredith Brown <racer@lanl.gov>
Subject: Yellow Alert: Connector Hazards

Title: Yellow Alert - Common Laboratory Connectors Present Unrecognized Hazards

Date: August 10, 2000 2000-KO-SNL-15000-0002

Lessons Learned Statement: A pregnant researcher was shocked by 200 volts DC while handling a BNC-to-Banana connector. This type of connector has exposed metal parts where a banana jack plugs into the side of the connector or where a threaded knob screws down on a wire connection. Although these metal parts are recessed, fingers can mold into these recesses and make contact.

Discussion of Activities: Voltage measurements were being made from panel mounted BNC connectors. An adapter was used to connect the banana plug leads of a multimeter. The adapter was moved from one panel mount connector to another as voltage readings were taken. After several measurements the researcher grasped the adapter in a manner to contact metal part and receive a shock.

Analysis: Workers routinely overlook the physical characteristics of these connectors because they are most commonly used on 5 volt or 15 volt signals, which are not shock hazards. But when you're troubleshooting a 200 volt circuit, the "exposed, energized part" suddenly becomes apparent when you touch it. ANALYZE and CONTROL these hazards if you are going to PERFORM WORK SAFELY. Pregnant workers must be aware of electrical hazards that could be injurious to the unborn child. Just as a workplace would be monitored for radiation, chemical, and other hazards, the electrical hazard must also be identified. Several medical publications document the tragic death of a fetus when the shock path is from hand to foot through the abdomen of the otherwise uninjured mother. Fortunately, there was no apparent injury from this shock.

Recommended Actions: Don't handle these types of connectors if they are energized above 50 volts. Turn the power off before touching the connector. Pregnant workers should have someone else perform necessary energized work including the quick troubleshooting tasks.

Originator: Sandia National Laboratories

Contact: Hugh Bundy, (505) 845-9806

Authorized Derivative Classifier: Ronald Williams, Sandia National Laboratories, 8/14/00

Priority: Yellow

ISMS Core Functions: Analyze Hazards, Control Hazards, Perform Work

Keywords: connectors, electrical safety