



Abstract of an Accident

92-15

ACCIDENT TYPE: Electrical Flash-Over
INJURY: 1st, 2nd & 3rd Degree Burns Over 25-30% of Body
TYPE OF WORK: Post-PM System Check
EQUIPMENT: 2.3KV Circuit; 50JR Motor Controller,
Simpson 260 Multi-Amp Meter
SAFETY EQUIPMENT: Eye/Face Protection & Electrical Hazard Safety Shoes
OSHA INVESTIGATION: None; Inquiry Received

DESCRIPTION OF THE ACCIDENT:

20 year old male HV Electrical Worker (Worker) assisting HV Electrician (Journeyman) in operational system check on pump motor switch gear starter after annual preventive maintenance. Compartment heater element found inoperative. Journeyman went to review schematic to trace heater wire; Worker used 250V multi-meter to check fuses and circuitry. Mix of high and low voltage circuits in unlabeled interior of compartment; only one area over 11.5KV had a barrier. Worker thought set of fuses was low voltage; fuses were 2.3KV. Fuses mounted with printed voltage ratings facing back of compartment; not visible to Worker. Worker did not verify voltage with Journeyman prior to testing. He touched meter probes to fuses, causing meter to fault and explode. A violent flash-over was produced, severely burning Worker. Journeyman uninjured physically; lost one workday due to acute anxiety reaction. Worker hospitalized 21 days; had skin grafts on both hands. Anticipate 90 lost workdays minimum. Permanent partial disability probable.

DIRECT CAUSE:

- No warning signs or barriers inside compartment identifying all high voltage components to differentiate from similar-appearing lower voltage components
- Fuses mounted with printed ratings turned away from clear view
- HV Electrical Worker lacked experience with high voltage electricity; only 9 months on-the-job experience and one formal training class (wathour meter reading)
- Unfamiliarity of both electricians with this particular system
- Lack of communication between Journeyman and Worker; no clear and concise instructions as to which components to check

LESSONS LEARNED:

- Ensure all HV fuses and other components are installed in such a manner to ensure that rated voltages and interrupting capacity are clearly visible
- Supervisors must ensure inexperienced/new personnel receive adequate training prior to being sent out to work on equipment/systems; properly document training
- Ensure good communication between workers, especially in high hazard areas
- Install fuses in such a manner to ensure rated capacity is clearly visible
- Ensure emergency response personnel are provided specific instructions as to location of mishap to prevent potential delay in response time (Emergency personnel were at scene of accident within 4 minutes)

Your **SAFETY** contact is...