

Washington FACE

Fatality Assessment &
Control Evaluation

Important Things to Remember:

- Only qualified electricians should work on electrical systems.
- Electrical circuits must be tested to assure they are de-energized before performing work.
- Make sure that appropriate testing devices are used and that personnel are knowledgeable and trained in their safe operation.
- One should not rely on “as built” electrical drawings to determine current electrical system design and operation.
- Proper lock-out/tag-out procedures should be used for any system that may contain electrical energy.

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FACE FATAL FACTS

Electrocution Hazard from Overhead Lighting Systems

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Maintenance Worker Electrocuted Changing Light Bulb

On October 5, 2004, a maintenance worker at an assisted living facility in Washington State was electrocuted while attempting to change a metal halide light bulb. The bulb broke off in the fixture when the victim first tried unscrewing the bulb. After this, he studied the “as built” facility wiring plans and shut off the electrical breaker to the lights in the area.

The victim turned the light switch off and placed tape over the switch. He then went up above the suspended ceiling where he removed the can-light housing containing the bulb. At this point the victim was likely electrocuted when he touched the energized bulb filament while grounding

himself to the metal housing or ceiling grid. He was trying to remove the bulb stem with metal pliers. The broken light was wired to a separate emergency circuit designed to maintain lighting in the event of loss of electricity.

Metal halide and other high intensity bulbs frequently used in commercial and high occupancy buildings use higher voltages and current than common household light fixtures. These systems present hazards that licensed electricians are trained to recognize, but that others may not.

These systems contain capacitors that store energy and generate high temperatures that can make it difficult to remove old bulbs. However, hanging a

light bulb may normally be done safely by maintenance personnel if done with care. But other work, including removing a broken light bulb, should be performed by a licensed electrician familiar with the type of system installed.



Photos: The light fixture and type of bulb involved in the incident.

How to Prevent Similar Incidents

The following recommendations could help prevent a similar incident:

- Only qualified electricians should work on electrical systems. Employers should assure that other workers are specifically instructed not to perform any type of work on electrical circuits.
- Electrical systems and components must be tested to assure they are de-energized before performing work. Light switches and breakers for components cannot be assumed. If you can't test, let it rest.
- Proper lock-out/tag-out procedures should be used when work is done on any system that may contain electrical energy.
- Tools for de-energizing circuits should not be supplied to untrained personnel. Make sure appropriate testing devices are used and that personnel are knowledgeable and trained in their safe operation. In most cases it is recommended that a licensed electrician perform the testing.
- One should not rely on “as built” electrical drawings to determine current electrical system design and operation. Systems must be verified in place by testing and tracing the actual configuration.
- The accident prevention program for facilities with these types of lighting systems should describe this electrocution hazard for maintenance personnel.
- Electrical breakers should be clearly labeled to indicate their action location and purpose.