



Office of Compliance
Safety and Health
FAST FACTS

Exposed Energized Wiring and Electrical Components

Energized wire can be incredibly hazardous, as it may lead to electrocutions or fire if left unprotected. Exposed energized wiring and electrical components have become reoccurring hazards on every Office of Compliance (OOC) Capitol Hill inspection.



Figure 1: Electrical junction box without a cover.

energized wiring, broken electrical outlets or switches, and displaced modular furniture components that exposed live wires.

Open Junction Boxes

The most common type of exposed wiring is open junction boxes, as seen in Figures 1 and 2. When junction boxes are left uncovered—typically after maintenance or installation—employees can easily bump into or touch the energized wires and become vulnerable to electric shock. In addition, if combustibles such as paper are stored near energized wiring, a spark or electric current could easily start a fire.

Both the Occupational Safety and Health Administration (OSHA) and the National Electrical Code NFPA 70 require that electrical wiring be kept free from all recognizable hazards, and that energized wiring be covered to prevent contact with other conducting materials. The Code of Federal Regulations (CFR) and the National Fire Protection Association (NFPA) also both require that live parts of electric equipment operating at 50 volts or more be guarded against accidental contact by approved enclosures, locations, and partitions. Warning signs that forbid unqualified persons from entering hazardous areas are also acceptable outside switch gear or transformer rooms. During the 108th Biennial Safety and Health inspections, OOC inspection staff found a total of 280 hazards that violated these regulations. Specifically, inspectors found uncovered



Figure 2: Electrical wiring exposed in high-traffic area

Outlets and Switches Without Covers

Other exposed wiring hazards include electrical outlets and switches that have either missing or broken covers, as seen in Figures 3 and 4. This hazard creates a risk of electrocution for any employee plugging in an appliance or turning on a light switch. Figure 3 especially demonstrates this hazard, as a person could easily be electrocuted while reaching around this corner to turn on the switch.



Figure 3: Electrical outlet without a cover.



Figure 4: Electrical outlet with a broken cover.

Light Fixtures Missing Covers

OOC inspectors have also frequently found uncovered light fixtures and open light bulb sockets. Light fixtures, especially fluorescent light fixtures, have energized wiring beneath their covers. Therefore, a cover must always be installed following installation or maintenance in order to prevent electrocution or fire. Figure 5 shows a fluorescent light fixture that does not have a cover, presenting a serious electrical shock hazard to all employees working in this area. Additionally, when a light bulb is broken or burns out and the socket is left open, the electrical parts inside the socket remain energized. For this reason, a defective bulb should always be left in a socket until the bulb is replaced.

Electrical Panels

Electrical panels contain many junctions of live wires and other components, and they are required to be accessible at all times. These panels are also required to have a “dead front,” per CFR 1910.305(d). NFPA 70 describes a dead front as “without live parts exposed to a person on the operating side of the equipment.”(CFR 1910.305(d)) All live components must be



Figure 5: Uncovered fluorescent light fixture exposing live wires.

covered in this way so that anyone using the circuit breaker is safe from electric shock. The large electrical panel pictured in Figure 6 displays the hazard of a missing dead front. Not only are all the live components in this panel exposed, but also the panel's door lock is broken so that anyone might open the panel. Electrical panel boxes in commercial buildings should be locked and accessible by trained personnel only. The panel in Figure 6 is also located in a large dishwashing area, where a wet floor may lead to electrocution. Inspectors informed this employing office that this hazard presents imminent danger, and should be corrected immediately.



Figure 6: electrical panel with all live components exposed in dishwashing areas.



Figure 7: Same electrical panel after abatement. This panel now has a "dead front."

Reporting a Hazard

All exposed wiring hazards should be reported as soon as possible. Employees should contact a supervisor, but should also know that the hazard must be reported to the organization responsible for building maintenance. In the meantime, employees should exercise caution and avoid the hazard. It is imperative that all these laws and regulations are followed for the safety of everyone in the workplace.

FAST STATS

- The Bureau of Labor and Statistics reported that electric current caused 110 fatalities and approximately 1,870 injuries in 2003.
- The National Fire Protection Association (NFPA) reported that electric devices in offices caused an annual average of approximately 100 fires and \$2.2 million worth of damage from 1994 to 1998.
- The NFPA reported that electric devices in homes caused an annual average of approximately 4,600 fires, 31 deaths, 141 injuries, and \$58.4 million worth of damage from 1994 to 1998.

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