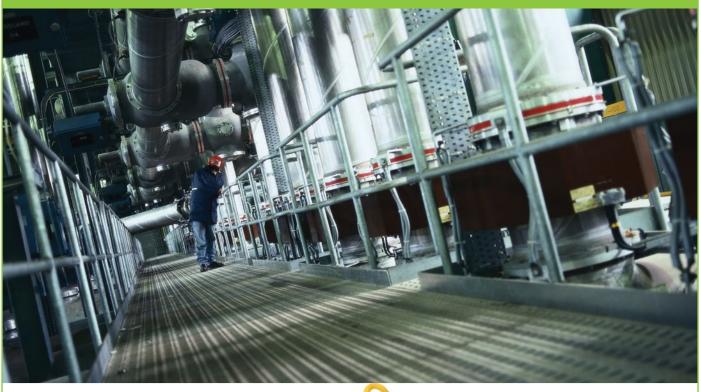


Facility Safety

Identify & correct potential electrical safety hazards & maximize machine uptime in the workplace







Personnel Protection

Hazard: Permanently installed non-GFCI receptacles installed in wet or damp

indoor locations, on roofs or other outdoor locations.

Summary: The National Electrical Code requires GFCI protection for power outlets

in all wet or damp locations, such as bathrooms, kitchens, garages, outdoor areas, rooftops, locker rooms, etc. Use Leviton SmartLock Pro

GFCI receptacles to satisfy this code requirement.

Remedy: Install GFCI receptacles in all such locations. Leviton's SmartLock Pro

GFCI receptacles are available with safety features such as tamperresistant shutters, pilot and guide lights and weather-resistant

construction for outdoor locations.

Applicable Standards: NEC Article 210.8(B), OSHA 29 CFR PART 1910.304(b)(3),

1926.304(b)(3), NFPA 70E Article 110.4(C)



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Portable Personnel Protection

Hazard: Portable power tools being used on circuits without GFCI Protection.

Summary: A portable GFCI must be able to trip if a neutral wire is open. Leviton's patented SmartLock Pro GFCI technology will trip if an open neutral is detected, and prevent reset until it is fixed. Leviton provides GFCI protected cord sets and field attachable plugs for 15A and 20A, 120V

applications that will satisfy this code requirement.

Remedy: Use GFCI cord-sets or install user-attachable plugs on equipment. Leviton

GFCI cord sets are available in both automatic and manual reset, and

provide required open-neutral protection for added safety.

Applicable Standards: UL 943 section 6.7.2.1, OSHA 29 CFR PART 1926.404(B)(1),

NFPA 70E Article 110.4(C)



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Temporary Power Distribution

Hazard: Temporary power systems not providing sufficient over-current or

GFCI protection.

Summary: OSHA requires that all 120V, single-phase 15A and 20A receptacle outlets

on construction sites be GFCI protected. The 2011 NEC expands that to 120/240V and up to 30A. Leviton's The Box™ Series Power Distribution Boxes will satisfy these code requirements. They are constructed of reinforced metal housing and legs which can withstand heavy abuse, ideal for temporary use in industrial and commercial applications.

Remedy: Utilize Leviton power distribution centers that provide individual

over-current and GFCI protection for each line.

Applicable Standards: NEC Article 590.6, OSHA 29 CFR PART 1926.404(B)(1)



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Power Pendants

Hazard: Using standard electrical boxes that are not listed for use as pendants.

Summary: NEC Article 110.12 requires that unused openings in boxes be closed

off to provide the same level of protection they would get from a wall. Using wall boxes as pendants violates this provision. Use of Leviton's non-metallic portable outlet boxes satisfies both NEC and OSHA requirements. Additionally, Leviton offers cover plates with weather-resistant flip lids, providing NEMA 3R protection to

receptacles while not in use.

Remedy: Use Leviton non-metallic portable outlet boxes that are designed

for this purpose.

Applicable Standards: NEC Article 110.12, OSHA 29 CFR PART 1910.303(b)(1),

1926.403(b)(1)



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Outdoor or Indoor Wet and Damp Locations

Hazard: Plugs and connectors are failing due to contact from moisture and debris.

Summary: Unless identified for use in the operating environment, electrical

conductors must not be used in damp or wet locations where they may be subjected to liquids, vapors, or other deteriorating agents having a deteriorating effect on the conductors. Leviton's Wetguard® watertight devices feature environmental ratings of NEMA 4, 4X, 6 & 6P and IEC IP66 & IP67, and are constructed of materials that satisfy these Standards' requirements.

Remedy: Utilize Leviton Wetguard® watertight plugs and connectors in areas that

are exposed to moisture.

Applicable Standards: NEC Article 110.11, OSHA 29 CFR PART 1910.303(b)(6),

1926.432



Receptacles in Damp or Wet Locations

Hazard: Receptacles mounted outdoors or in wet or damp locations are subject to

corrosion and damage from water and UV exposure.

Summary: All 15A and 20A, 125V and 250V receptacles installed in damp or wet locations

must be listed as weather resistant. Leviton offers a comprehensive line of weather-resistant receptacles, both standard and GFCI that satisfy this

requirement.

Remedy: Use Leviton weather-resistant receptacles.

Applicable Standards: NEC Article 406.9(A) and (B)

Hazard: Receptacles mounted in damp or wet locations do not have appropriate

covers installed.

Summary: All 15A and 20A, 125V and 250V receptacles installed outdoors in a

location protected from weather or in other damp locations must be protected with a weatherproof cover when not in use.

protected with a weatherproof cover when hot in use.

If they are installed in wet locations, they must be protected by a cover

that is weatherproof both while-in-use or not in use.

Remedy: Use Leviton weatherproof covers.

Applicable Standards: NEC Article 406.9(A) and (B)







Wire Management

Hazard: Cable connections pull out or become damaged due to

excessive motion or vibration.

Summary: Flexible cords must be connected in such a way that strain relief

is provided which will prevent pull from being directly transmitted to joints or terminal screws. Use of Leviton's comprehensive offering of wire mesh support grips provides compliance with

these Standards.

Remedy: Utilize Leviton wire mesh cable support grips to reduce strain on

cable connections.

Applicable Standards: NEC Article 400.10, OSHA 29 CFR PART 1926.405(G)(2)

Hazard: Standard clamp type strain reliefs used on bus drops may not provide sufficient strain relief or cable bend control.

Summary: Flexible cords are permitted for use in bus drops for portable

or stationary equipment, provided that appropriate strain relief grips are provided at the busway plug-in device and equipment terminations. Leviton offers a variety of strain relief grips with straight, 45 degree and 90 degree bends to help comply with this provision.

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Remedy: Utilize Leviton wire mesh cable strain relief grips to reduce

strain on cable connections and control bend radius.

Applicable Standards: NEC Article 400.10, OSHA 29 CFR PART 1910.305(g)(2),

1926.405(g)(2), NFPA 70E Article 205.14(2)

Hazard: Cable entrance to boxes, enclosures, cabinets and pushbuttons are

not adequately protected from water ingress or cable strain.

Summary: Liquidtight Flexible Nonmetallic Conduit is frequently used in

outdoor and direct burial applications where protection of the contained conductors from vapors, liquids and other debris is required. Only fittings listed for use with LFNC can be used. Leviton offers a comprehensive line of cord sealing grips, with a choice of either non-metallic or stainless steel mesh.

Remedy: Utilize Leviton cord sealing grips to reduce strain on cable

connections and control bend radius.

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Applicable Standards: NEC Article 356.42, OSHA 29 CFR PART 1926.405(G)(2)





Motor Control

Hazard: Motor driven machines have not been placed in an electrically

safe work condition for servicing.

Summary: NFPA 70E mandates that machines must be completely

disconnected from all sources of power, and be prevented from being re-energized until work is complete. Powerswitch® safety disconnect devices provide the means for disconnecting power, and have provisions for compliance with OSHA and NFPA

mandated lockout/tagout programs.

Remedy: Install a Leviton Safety Disconnect Switch.

Applicable Standards: NEC Article 430.75(A), 430.102, 430.103,

OSHA 29 CFR PART 1910.303(f)(1), 1910.305(j)(4), 1910.147,

NFPA 70E Article 120

Hazard: Equipment power feeds are not placed close enough to controlled

equipment to satisfy line-of-sight requirements.

Summary: The NEC requires that a disconnecting means for a motor and controller

be located within line-of-sight (50 feet) of the controlled equipment. Leviton's Powerswitch® line of disconnect switches provide a safe disconnecting means and adequate lockout/tagout protection as

required by the Standards.

Remedy: Install a Leviton Safety Disconnect switch between the power feed

and controlled equipment.

Applicable Standards: NEC Article 430.102, OSHA 29 CFR PART 1926.417

Hazard: The space available around equipment does not allow compliance with the

line-of-sight disconnecting means.

Summary: The Standards require that you must supply a means for disconnecting

the circuit to a controller, as well as provide a means for isolating a motor from other loads on the circuit. Leviton's Powerswitch® line of manual motor controllers, listed as suitable for motor disconnect, allow the use

of a single switch to perform both functions.

Remedy: Install a Leviton Manual Motor Controller that is also rated "Suitable As

Motor Disconnect".

Applicable Standards: NEC Article 430.102, UL 60947-4-1 (supersedes UL 508),

OSHA 29 CFR PART 1926.417





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Mechanical Interlocks

Plugs and connectors are disconnected under load, potentially

damaging or shortening the lifespan of both the connectors and

connected equipment.

Summary:	Not all disconnecting devices are rated for interrupting load currents. Disconnecting "live" circuits can result in arcing that can damage the device and connected equipment, while at the same time creating a safety hazard for the operator. Powerswitch® mechanical interlocks provide the required level of safety by preventing the unplugging of a device under load – the safety disconnect will de-energize the circuit before allowing the plug to be disconnected.	
Remedy:	Install a Leviton Powerswitch® Mechanical Interlock, available for both IEC 60309 and NEMA configured plugs and receptacles.	
Applicable	Standards: NEC 430.102(B), 430.109(F), UL 60947-4-1 (supersedes UL 508), NFPA 70E Article 120	
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Control of Hazardous Energy (Lockout/Tagout)

Hazard: Workers performing service or maintenance on machinery may be exposed to injuries from the unexpected startup of the machinery.

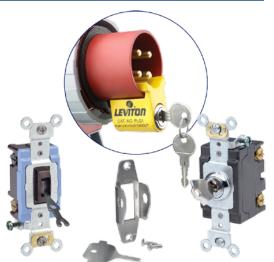
Summary: Employers must establish an energy control program, consisting of energy control procedures, employee training, and periodic inspections to ensure that before service and maintenance is performed, machines and equipment that could unexpectedly startup are isolated from their energy

source(s).

Leviton offers a variety of devices that can be used to prevent accidental Remedy:

reenergization of equipment.

Applicable Standards: NFPA 70E Article 120, OSHA 29 CFR PART 1910.147



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Surge Protection

Hazard: Machine controls, computers and other sensitive electronic equipment

damaged by transient voltage spikes and surges.

Summary: Some statistics indicate that as much as 80% of all power source related

downtime can be traced to transient activity. It is also estimated that protecting electrical and electronic equipment from voltage spikes and surges (transients) can increase the normal lifespan by a factor of two or three. These surges are not only generated from outside the facility (e.g. lightning or utility switching), but also inside the facility (motor load switching). Therefore, you must install sufficient protection to reduce the effects of both internally and externally generated spikes and surges.

Remedy: Implement an effective surge protective network – including service

entrance, branch, and point of use protection – that protects the entire facility from the damaging effects of transient spikes and surges.

Applicable Standards: UL 1449, NEC Article 280, Article 285, 700.8



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