

Add and change electrical panel circuits

COMPANY

PROJECT / LOCATION

DATE

PREPARED BY

Covers adding and changing panelboard circuits in a building under construction, from identifying power sources through restoring power and cleanup. Perform installation work with circuits deenergized; this analysis does not cover energized repairs.

Protective equipment

- Safety glasses with side shields for wire cutting and handling parts.
- Cut-resistant work gloves for handling deenergized conductors and sharp enclosure edges; these do not protect against electric shock.
- Sturdy work boots for footing and protection from dropped parts; these do not replace electrical isolation.

Before you start

- Identify exposed and concealed energized circuits that workers or tools could contact, including sources that could feed the panel from another direction.
- Review the isolation points, tags, warning signs, and protective measures with everyone doing the work.
- Inspect the panel, voltage tester, insulated tools, and cables for damage or other recognized hazards.
- Confirm that conductors and equipment are approved and that no breaker or fuse will be larger than the circuit wiring is rated to carry.
- Confirm there is clear working space in front of the panel and a clear way in and out before opening it.

#	JOB STEP	HAZARDS	CONTROLS
1	Set up the panel work area.	Other workers can enter the work area and contact exposed energized parts. Cords and stored materials can cause trips or block escape from the panel.	- Install barriers so the workspace cannot be used as a passageway while energized parts are exposed. - Post visible warning signs wherever energized circuits create a contact hazard. - Remove cords and stored materials from working spaces and walkways. - Keep the working space in front of the panel and the way in and out clear throughout the task.

2 Disconnect and secure all power sources.	An overlooked feed or someone operating a disconnect can energize conductors during work.	- Disconnect every source that can energize the equipment or circuits being worked on. - Use lockout locks to hold disconnecting devices in the off position and render the circuits inoperative. - Tag every energizing point and every control being deactivated with clear identification of the equipment or circuit.
3 Open the panel and verify absence of voltage.	Panel supply terminals or adjacent circuits may remain energized and cause shock or burns during testing.	- Before working on or near any part of a circuit you could touch, deenergize it and ground it. - If a part must stay energized, such as the panel's supply terminals, guard it effectively with insulation or another cover. - Use a voltage tester suitable for the circuit and verify its operation before and after checking the work points. - Do not treat insulated tools as a substitute for deenergizing or guarding live parts.
4 Install or change conductors and circuit components.	Damaged cables, or a breaker or fuse too large for the wiring, can cause shock, overheating, or fire.	- Do not use worn or frayed cords or cables; replace them. - Use approved conductors and equipment free from recognized hazards. - Do not install a larger breaker or fuse than the existing circuit wiring is rated to carry.
	Sharp enclosure edges and cut wire ends can cut hands or strike eyes.	- Keep hands clear of sharp edges and direct wire offcuts away from people. - Wear cut-resistant gloves when handling deenergized sharp parts. - Wear safety glasses with side shields when cutting wire.
	Installing or removing a fuse while one or both of its terminals are energized can cause shock or burns.	- Open the disconnect ahead of the fuses so neither terminal is energized whenever possible. - If a fuse terminal is energized, use a fuse puller or other tool insulated for that voltage, never bare hands or uninsulated pliers.

5 Check connections and close enclosures.	Metal conduit or boxes that are not solidly joined, or exposed wires, can leave metal parts that shock someone who touches them.	- Join metal raceways (such as conduit), cable armor, and enclosures to all boxes, fittings, and cabinets so they form one continuous electrical path. - Check that boxes completely enclose their conductors and cables. - Reinstall covers and guards before restoring power.
6 Clear the crew and restore power.	Restoring power while someone is still working can cause shock or burns.	- Keep circuits locked out and tagged until all work is complete and exposed parts are enclosed or guarded. - Confirm that everyone is clear and that tools and loose parts have been removed. - Have each worker remove only their own lock and tag before the disconnect is turned on.
7 Clean up and release the work area.	Wire scraps and leftover cords can cause cuts or trips near electrical equipment.	- Collect wire scraps and remove cords from working spaces and walkways. - Remove or cover warning signs promptly when their hazards no longer exist. - Keep barriers and warning signs in place wherever exposed energized parts remain.

Stop work and call the supervisor if

- Stop and call the supervisor if voltage remains, a power source is unidentified, or a circuit cannot be secured against energizing.
- Stop and call the supervisor if exposed energized parts cannot be effectively guarded or the required workspace cannot be kept clear.
- Stop and call the supervisor if the tester, tools, cables, or panel show damage that could cause injury.
- Stop and call the supervisor if a planned breaker or fuse is larger than the wiring is rated to carry, or the wiring rating is unknown.

Sources: 29 CFR 1926.416, General requirements; 29 CFR 1926.417, Lockout and tagging of circuits; 29 CFR 1926.405, Wiring methods, components, and equipment for general use; 29 CFR 1926.403, General requirements; 29 CFR 1926.200, Accident prevention signs and tags

Drafted with AI for review by a competent person. Clever Rook writes from the official regulation text it cites, but it doesn't know your site. Check it against your conditions and your company's safety program before use. Not legal advice.

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COMPANY

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DATE

REVIEWED BY (COMPETENT PERSON)

REVIEW DATE

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