



013: Circuit Breaker Panelboards

Why this is important

Working in energized panelboards poses a shock and flash risk to the installer. With today's 24/7 operations, it is unlikely you will be able to de-energize a panel, unless it is a new installation.

Inspection

Before removing the covers from an energized panelboard, note the position of each branch circuit breaker.

If any circuit breaker is in the tripped position for no apparent reason, notify your foreman before proceeding with work.

The two preceding steps may prevent you from being wrongly accused of knocking down a branch circuit, or from inadvertently causing harm by closing a breaker that is on a faulted circuit.

Note the rating and type of circuit breakers the panelboard will accept. Verify the circuit breaker you are installing will fit in the panelboard.

Before adding breakers, verify that the interrupt rating of each circuit breaker to be installed exceeds the available fault current at the panelboard. Do not install a circuit breaker that does not meet or exceed the available fault current in the panelboard.

The available fault current at any location in the facility is generally not posted, but you can make a quick check by looking at other breakers in the panelboard. Question installing a breaker rated at 10 KAIC in a panelboard full of breakers rated at 25 KAIC.

Cover removal & replacement

Removing and replacing panelboard covers is a two-person job.

Store all screws, bolts and other hardware used to secure the covers so they will not be lost. Replace any missing hardware with equivalent devices. The hardware that holds covers in place is designed to keep the covers from blowing off should a fault occur in the enclosure. Missing hardware may allow a door or panel to become a projectile in a fault condition. The result may be the loss of life, limb and property.

If you open a circuit breaker accidentally, do not reset it. Notify your foreman or the operations people immediately. You may do more damage by resetting a breaker than by leaving it open.

Raceway, wire and terminations

The installation of new circuits often requires you to drill holes in the enclosure for new raceway fittings. Careful drilling, with proper covering and catch materials, will prevent metal chips from falling on energized bus.

Use knockout punches where possible to prevent burrs.

Use a small magnet to remove metal shavings from the enclosure.

Metallic raceway is part of the grounding system. Tighten the locknut so the connection is snug.

Discussion leader duties for this session:

Obtain several different styles and ratings of circuit breakers and possibly a panelboard nameplate to visually show where to find pertinent information.

What this Safety Talk covers:

The general safety rules when working in panelboards and what information to know before installing circuit breakers. This discussion focuses on energized panelboards in occupied facilities, but many of these principles also apply to new construction.

Discussion notes :

