

Main electrical switchgear / service section annual maintenance checklist

The annual main switchgear service is the deep pass: the measurements, cleanings and tests a quarterly round doesn't reach. This checklist keeps the full service on record with the photos that make it defensible later. Work is commonly verified against NETA guidance, NFPA 70B. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: A qualified electrical testing crew, coordinated with facilities for the required outage. When: Once a year, scheduled well ahead of time since it requires de-energizing the section and an approved outage window.

Outage planning

- ☐ **Outage plan agreed with the owner before the shutdown**
Switching, window, loads, temporary power and restoration agreed with the owner in writing, and a utility disconnect or meter pull booked where the service section is in scope. No photo required
- ☐ **Infrared scan under load in the days before the outage**
Fresh scan at normal load through viewing ports, doors closed, to recheck the quarterly hot spots and mark each joint the de-energized crew must open and remake. 1 photo required

Preparation and access

- ☐ **Section de-energized, locked out and verified with a meter**
Zero energy confirmed at all accessible conductors before any panel is opened. 1 photo required
- ☐ **Interior compartments opened and cleaned**
Dust, debris and any signs of pest intrusion removed; compartments vacuumed, not blown, to avoid spreading dust. 2 photos required

Connections and insulation

- ☐ **Bus and cable connections inspected and torqued**
No discoloration or pitting at lugs and bus joints; torque verified or connection resistance measured per the testing standard or manufacturer, re-torqued only where found loose. 3 photos required
- ☐ **Insulation resistance tested on major components**
Megohm readings recorded per component and compared against baseline or manufacturer minimums. 1 photo required
- ☐ **Insulating barriers and supports checked for tracking or cracking**
No carbon tracking, chalking or physical damage on standoffs and barriers. 1 photo required
- ☐ **Contact resistance tested on bus joints and breaker poles**
Micro-ohm readings recorded by the testing firm and compared across phases and with the last outage, with any high joint cleaned and remade. 1 photo required

Breaker exercise

- ☐ **Each breaker manually exercised open and closed**
Mechanism operates smoothly without binding, trip and close indicators function correctly. 2 photos required
- ☐ **Protective relay settings and trip units reviewed**
Settings match the current coordination study, not the panel's out-of-date factory defaults. 1 photo required

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| ☐ | Breakers trip-tested by the testing firm
Trip times at each test point recorded by primary or secondary injection and compared with the maker's time-current curve and the study settings. | 1 photo required |
| ☐ | Protective relays tested where the gear uses them
Relay pickup and timing tested by injection and the trip output shown to open its breaker, with results compared with the coordination study. | No photo required |

Return to service

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| ☐ | Compartments cleared and covers bolted back before re-energizing
No tools, grounds or debris left inside, barriers and covers bolted back, and each lock and tag removed by the person who hung it. | 1 photo required |
| ☐ | Gear re-energized to the switching plan and voltage confirmed
Sections re-energized in the agreed order, metering shows normal voltage on each phase, loads restored and the owner told the outage is closed. | 1 photo required |
| ☐ | Testing firm's report received and filed with the owner
Report lists every test result against the last outage, open deficiencies and settings as found, and goes to the owner for acceptance. | No photo required |