



ELECTRICAL INSPECTION CHECKLIST
High-Level Facility Electrical Infrastructure, Safety & Compliance

Facility / Building: _____

Inspection Date: _____

Inspector: _____

1. SYSTEM SURVEY, PHYSICAL CLEARANCE & ACCESS SAFEGUARDS

Status	Audit Item and Guidance
☐ Pass ☐ Defect	Shop & Lab Master Electrical Shut-Offs: Verify clearly labeled, accessible Master Electrical Shut-Off Switches in woodshops, metal shops, and chemistry labs, complete with posted location maps and emergency signage.
☐ Pass ☐ Defect	Asset & Equipment Identification: Verify electrical assets and equipment (transformers, switchgear, sub-panels, bus ducts, emergency switches, etc.) locations are readily known by pertinent staff. In an emergency event, the safe and immediate identification, location, and deactivation of electrical equipment is necessary to protect occupants and prevent further property damage.
☐ Pass ☐ Defect	36-Inch Panel Clearance Mandate: Ensure a minimum of 36 inches (3 ft) of clear, unobstructed space around all panels, disconnects, and switchgear, strictly prohibiting any storage in the area. The minimum clearance is required to provide safe and immediate access during an emergency event.
☐ Pass ☐ Defect	Vault & Room Physical Security: Confirm primary electrical rooms and vaults are locked against unauthorized entry and free of combustible storage, trash, or custodial supplies. Energized electrical equipment produces heat which can lead to arcing and sparks.
☐ Pass ☐ Defect	Public Area Panel Locks: Verify panel doors in public corridors, classrooms, and common areas are locked and latched securely. There are many important and required building systems that are sensitive to power-outages (fire alarm control panels, carbon monoxide detection systems, sensitive research equipment, food prep, etc.), and loss of power to these systems can endanger building occupants.

2. PREVENTATIVE MAINTENANCE

Status	Audit Item and Guidance
☐ Pass ☐ Defect	Semiannual Cleaning & Breaker Cycling: Verify routine de-energized panel cleaning using non-conductive vacuums or dry air and manual exercising of circuit breakers to prevent mechanical linkage freezing. Removing potentially conductive material from around energized systems is very important, and exercising breakers helps ensure they may work properly when needed.
☐ Pass ☐ Defect	Panel Hardware Audit: Inspect panels for fuse or breaker tampering, physical corrosion, missing knockouts, missing dead-front covers, unlabeled circuits, or exposed live conductors.
☐ Pass ☐ Defect	Infrared Thermographic Survey Compliance: Verify infrared thermographic surveys are completed under normal load by a qualified inspector at least annually. Intermediate inspections should be completed by in-house staff to help identify new issues.
☐ Pass ☐ Defect	Annual Torque Checks & Contact Care: Confirm annual re-torquing of bus bars, lugs, and breaker bolts to manufacturer specs, and check copper contacts for oxide film buildup. This should be conducted simultaneously with the Infrared Thermographic Survey.

3. RECEPTACLES & WIRING RESTRICTIONS

Status	Audit Item and Guidance
☐ Pass ☐ Defect	Receptacle Hardware Integrity: Check wall outlets for faceplate cracks, broken covers, loose mounting boxes, exposed wires, burnt contacts, or charring. We've seen many receptacles with charring evidence indicating excessive load on the system.
☐ Pass ☐ Defect	Wet Area GFCI Protection (<6 Feet): Confirm functional Ground Fault Circuit Interrupter (GFCI) protection on all receptacles within 6 feet of sinks or wet lab areas, and maintain monthly trip testing logs.
☐ Pass ☐ Defect	Extension Cord & Appliance Restrictions: Verify extension cords are not used as permanent wiring substitutes, routed through walls, ceilings, or doorways. When temporarily used, inspect extension cords for sheath and prong damages. Confirm high-wattage appliances (microwaves, space heaters) plug directly into wall outlets, not extension cords or improperly rated power-tap devices..

4. TRANSFORMERS & EMERGENCY GENERATORS

Status	Audit Item and Guidance
☐ Pass ☐ Defect	Transformers: Visually and audibly inspect facility owned/operated transformers. A slight hum is usually normal, but loud buzzing may indicate a malfunctioning transformer. Transformers should also be thermally inspected for inconsistent heat patterns.
☐ Pass ☐ Defect	UPS & Backup Generator Load Testing: Quarterly, verify Uninterrupted Power Sources (UPS) smoothly transition power loads. Emergency generator load tests should be conducted by a qualified vendor. Many electrical claims are related to power-outages where the UPS did not last long enough. The generator's Automatic Transfer Switches (ATS') should be tested monthly to ensure they will activate the emergency generator when needed.

5. EMERGENCY POWER & OUTAGE RECOVERY

Status	Audit Item and Guidance
☐ Pass ☐ Defect	Fire Alarm Standby & Outage Fire Watch: Confirm fire alarm and security panels maintain at least 24 hours of standby battery capacity and verify 24/7 manual fire watch protocols during extended blackouts. Fire alarm batteries are required to be tested annually and are typically replaced every 3-5 years.
☐ Pass ☐ Defect	Surge Protection: Provide surge protection for the facility's highly sensitive and expensive electrical equipment and devices. The state has had many electrical surge claims resulting in damage to HVAC compressors, projectors, etc.
☐ Pass ☐ Defect	Pre-restoration Surge Isolation Protocol: Verify protocols to open main disconnects, or switch off chillers and sensitive electronics before utility re-energization to prevent voltage spike damage (if possible). There have been many electrical claims resulting from power restoration after an outage which caused damage to compressors and other sensitive devices.