

Energized Electrical Work Permit: Verification Checklist

A pre-task validation checklist for NFPA 70E / CSA Z462 energized electrical work

A subcontractor inserted a 30-amp breaker into an energized 480V panel to avoid shutting the system down. No energized work permit was filed, no arc-flash risk assessment was done, and he wore cotton — not arc-rated PPE. The arc flash burned him over half his body. Every barrier that would have stopped the job was an unchecked box on a permit no one required.

Use this checklist before authorizing any energized electrical work. It walks the mandatory NFPA 70E / CSA Z462 gates — justification, risk assessment, boundaries, PPE, and a qualified safety watch. Sign each line. If any item cannot be verified, the work is not authorized.

COMPANION RCA

The Speed of Culture: Arc Flash in an Energized 480V Panel

AUDIENCE

E&I technicians, contractors, supervisors, permit authorizers

STANDARDS

NFPA 70E Art. 130, CSA Z462, OSHA 1910.333, IEEE 1584

Complete this checklist before any energized electrical work and attach it to the Energized Electrical Work Permit. Each item must be verified by a qualified person and approved by the authorizing manager. If de-energizing is feasible, energized work is not justified — stop and establish an electrically safe work condition.

1. JUSTIFICATION FOR ENERGIZED WORK

☐ **De-energizing is infeasible or introduces a greater hazard.**

Confirm one of the two NFPA 70E 130.2(A) conditions: de-energizing introduces additional or increased hazards, or is infeasible due to equipment design or operational limitations. "Inconvenience," "downtime," and "production schedule" are not valid justifications.

☐ **Justification documented and approved by management.**

The written justification is recorded on the permit and signed by the authorizing manager — not the worker performing the task. Multi-level sign-off where site policy requires.

☐ **Energized Electrical Work Permit issued before work begins.**

EEWP completed per NFPA 70E 130.2(B) with scope, justification, results of the risk assessments, boundaries, PPE, and required approvals. No permit, no work.

2. SHOCK & ARC-FLASH RISK ASSESSMENT

☐ **Shock risk assessment completed.**

Determine voltage, the limited and restricted approach boundaries, and shock PPE per NFPA 70E 130.4. Identify exposed energized parts and the methods used to protect against contact.

☐ **Arc-flash risk assessment completed and incident energy determined.**

Calculate incident energy and the arc-flash boundary per NFPA 70E 130.5 using IEEE 1584 methodology. Verify the equipment arc-flash label is present and current.

☐ **Equipment condition and likelihood of an arcing fault evaluated.**

Assess condition of maintenance, door/cover state, and the task itself (e.g., inserting a breaker onto a live bus) when judging the likelihood of an arcing fault.

PASS CRITERIA — BOUNDARIES & PPE RATING

Document for the specific equipment: arc-flash boundary (distance at **1.2 cal/cm²** incident energy) and the limited and restricted approach boundaries for shock. Arc-rated PPE (ATPV) must

meet or exceed the calculated incident energy at the working distance. Record all values on the permit.

3. BOUNDARIES, BARRICADES & PPE

☐ **Arc-flash boundary established and barricaded.**

Physically barricade the arc-flash boundary. Only qualified persons in proper PPE permitted inside; unqualified personnel kept clear.

☐ **Arc-rated PPE matched to the calculated incident energy.**

Arc-rated FR clothing, arc-rated face shield or hood, and head protection with an arc rating at or above the calculated incident energy at working distance per NFPA 70E 130.5(G) / Table 130.7(C)(15). No cotton or untreated synthetics.

☐ **Insulated tools and rated equipment in use.**

Insulated/insulating tools rated for the voltage; voltage-rated gloves with leather protectors where shock exposure exists; test instruments of the correct category (CAT) rating.

☐ **Egress and adjacent energized parts assessed.**

Confirm a clear escape path and that nearby energized parts will not be contacted during the task.

4. PERSONNEL & SAFETY WATCH

☐ **Only qualified persons perform the work.**

Workers are qualified for the specific equipment and task per NFPA 70E 110.3 — trained on the hazards and the safe work practices the job requires.

☐ **A dedicated, qualified safety watch is stationed.**

A qualified electrical worker acts as the attendant/standby at or outside the boundary per NFPA 70E 130.3 — never a general laborer.

☐ **Safety watch trained in emergency response.**

Standby trained in safe release of a person in contact, equipment isolation/de-energization, and CPR/AED. Means of summoning aid confirmed before work starts.

5. PRE-JOB BRIEFING & AUTHORIZATION

☐ **Job briefing conducted with the full crew.**

Cover hazards, procedures, boundaries, PPE, and emergency response per NFPA 70E 110.5(I). Document the briefing on the permit.

☐ All approvals in place before work starts.

Permit signed by all required parties, risk assessments attached, boundaries and PPE verified on site, and stop-work authority confirmed with every worker.

REFERENCE STANDARDS

- **NFPA 70E Article 130** — Work involving electrical hazards — permit, risk assessment, boundaries, PPE
- **NFPA 70E 130.2** — Energized work permit and the two valid justifications for energized work
- **NFPA 70E 130.4 / 130.5** — Shock risk assessment; arc-flash risk assessment and incident energy
- **NFPA 70E 130.5(G) / Table 130.7(C)(15)** — Arc-rated PPE selection
- **CSA Z462** — Workplace electrical safety (Canada) — energized work permits and boundaries
- **OSHA 29 CFR 1910.333** — Selection and use of work practices; de-energize before work on live parts
- **IEEE 1584** — Guide for performing arc-flash hazard calculations

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Codes, standards, and regulations are revised periodically and vary by jurisdiction. **Verify the current edition of all referenced codes (CEC, NEC, CSA, NFPA, API, OSHA) and any provincial, state, or local amendments that apply to your work site before relying on the items listed here.** Where any conflict exists between this checklist and the applicable code, regulation, or your employer's safe work procedure, the code, regulation, or procedure governs.

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GET THE FULL RCA AND THE NEXT CHECKLIST

This checklist accompanies the full incident analysis at safetyblog.eli-intelligence.com. New incident RCAs and field checklists publish every Friday. Subscribe at the site footer to get them in your inbox the morning they go live.