



Electrical Evidence Preservation Checklist

What to secure after an electrical fire, equipment failure, or arc flash incident, before anyone resets, cleans, repairs, or scraps anything. Critical information may be lost within the first few days if not retrieved in a timely fashion.

Not every item on this checklist will be available, or even applicable, in every investigation. These are items commonly requested during an electrical power forensic investigation.

On the shortest clock: relay, meter, and SCADA event records overwrite on a rolling buffer, sometimes within days. Download them before doing anything else on this list.

01 RECORDED DATA – FIRST 24 HOURS

- ☐ **Protective relay event records** and COMTRADE waveform captures, from every relay that saw the event, not only the one that tripped.
- ☐ **Meter and power-quality monitor logs**, including sag, swell, and transient captures.
- ☐ **SCADA, historian, and BMS data**, with a written request to suspend the normal retention purge.
- ☐ **UPS, generator controller, ATS, and battery monitoring logs**.
- ☐ **As-found relay and trip-unit setting files**, exported before anyone resets or re-commissions the equipment.
- ☐ Alarm and sequence-of-events logs, operator logs, and access-control records for the space.

03 DOCUMENTS – LITIGATION HOLD

- ☐ **As-built one-line diagram** and the equipment submittals approved for construction.
- ☐ **Short-circuit, coordination, and arc flash studies** of record, including superseded revisions.
- ☐ **Maintenance and test records:** relay and breaker tests (and whether primary or secondary injection), infrared surveys, insulation resistance, power factor, and transformer oil analyses.
- ☐ Work orders, switching logs, and recent modifications or settings changes.
- ☐ Commissioning reports, warranty and service records, and manufacturer correspondence.
- ☐ Utility outage and fault reports, and lightning data where weather is in question.

02 PHYSICAL EVIDENCE – THE SCENE

- ☐ **Do not re-energize**, even to test. It destroys the as-found state and can create new arc damage indistinguishable from the original.
- ☐ **Do not clean, wash, or vacuum.** Soot patterns, beads, and conductive deposits are evidence.
- ☐ **Photograph as found**, with a scale, before removal — including the interior of every compartment and the position of every switch and breaker.
- ☐ **Preserve the whole assembly** where practical, not only the suspected component. Origin arguments often turn on what did not arc.
- ☐ Tag, bag, and label anything removed, and record it on the evidence log (page 2).
- ☐ Store evidence secured, dry, and unaltered, with one person responsible for access.

04 BEFORE ANYONE DISASSEMBLES

- ☐ **Give notice to all potentially interested parties** — owner, insurers, manufacturers, contractors, and the utility where applicable.
- ☐ **Agree a joint inspection and examination protocol** in writing, so no party can argue evidence was altered outside their presence.
- ☐ Establish chain of custody for every item that leaves the site.
- ☐ No destructive testing without agreement of all parties and a written test plan.
- ☐ Collect and preserve items consistent with ASTM E1188 and examine them consistent with ASTM E860; follow NFPA 921 where a fire is involved.
- ☐ Retain an electrical engineer **before** the equipment is moved, not after.



Evidence Log

MATTER / CLAIM NO.	SITE / LOCATION	DATE OF INCIDENT
COMPANY	PREPARED BY	PHONE / EMAIL

ITEM NO.	ITEM DESCRIPTION	DATE	STORAGE LOCATION	STORED BY	NOTES / COMMENTS
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Record every item removed from the site or placed in storage, including data exports (note the file name and who downloaded it). Photograph each item with its item number before it is bagged.