



● STANDING UP A DEFENSIBLE IR PROGRAM

Condition-monitoring program *starter kit.*

A practical framework for building an infrared condition-monitoring program the standard would recognize as compliant. The difference between a compliant program and a folder of thermal images is the structure around the camera: scope, qualification, intervals, criteria, and a corrective-action loop.

01 / FOUNDATIONS The seven pillars

PILLAR 1

Written program

A signed, dated document defining scope, personnel qualification, frequency, procedures, acceptance criteria, and corrective-action workflow. The first artifact an auditor asks for.

PILLAR 2

Qualified personnel

Certified to ASNT SNT-TC-1A. Level I inspects under procedure; Level II interprets, writes procedure, and trains; Level III owns oversight. Most programs need a Level II in-house and Level III advisory.

PILLAR 3

Defined scope & frequency

NFPA 70B Table 9.2.2 as the floor. Critical distribution, switchgear, and MCCs typically annual; criticality and history tighten the interval. Document the logic.

PILLAR 4

Calibrated equipment

Imagers on annual traceable calibration per ASTM E1934, certificates on file. Verify field performance against a known reference before critical inspections.

PILLAR 5

Documented procedures

Written per ASTM E1934 and E1213: environmental conditions, emissivity, reflected-temperature compensation, load requirements (40% minimum typical), safe distance, and image-capture standards.

PILLAR 6

Reporting & severity

Every finding gets a severity rating tied to a defensible standard. Reports carry a visual and thermal image, emissivity and reflected temperature, load, and a corrective-action recommendation.

PILLAR 7 • THE ONE THAT GETS SKIPPED

Corrective-action loop

A finding without a work order is not a finding. Track from identification through repair, then re-inspect to confirm the anomaly cleared. This closed loop is what an audit actually cares about — high-resistance connections do not fix themselves.



02 / FIRST 90 DAYS

A build sequence that holds

DAYS 1-30 · SCOPE & PEOPLE

Identify the program owner (maintenance or reliability leadership). Draft the equipment scope list with criticality ratings. Identify a Level I candidate and engage a Level III to guide setup. Draft the written program document.

DAYS 31-60 · CAPABILITY

Select and procure the imager — match resolution and sensitivity to the smallest target at the greatest distance in scope. Schedule Level I training. Establish calibration and verification. Finalize procedures, severity criteria, and the reporting template.

DAYS 61-90 · FIRST CYCLE

Run the first pass on highest-criticality equipment. Establish thermal baselines for repeatable comparison. Route findings through corrective action. Review with Level III oversight and adjust intervals and procedures from what you found.

03 / PITFALLS

Five things that sink internal programs

- ✓ **Buying equipment first.** The imager arrives before the program document exists, and findings pile up with no framework to act on them.
- ✓ **Skipping Level II / III oversight.** Level I certification is a starting point, not a program. Interpretation and procedure development require higher qualification.
- ✓ **No calibration cadence.** An imager without traceable calibration is a compliance liability. Budget annual calibration from day one.
- ✓ **Reports without context.** Findings must document emissivity, reflected temperature, load, and environment, or they are indefensible during an incident review.
- ✓ **No corrective-action tracking.** If findings do not close, the program is a documentation exercise, not a maintenance function.

04 / STANDARDS

Quick reference

STANDARD	WHAT IT GOVERNS
NFPA 70B (2023)	Electrical equipment maintenance. Establishes IR inspection as a required condition-monitoring activity.
NFPA 70E	Electrical safety in the workplace. Governs PPE, approach boundaries, and energized-work permits during live IR inspection.
ASNT SNT-TC-1A	Personnel qualification and certification, including thermography Levels I, II, and III.
ASTM E1934	Standard guide for examining electrical and mechanical equipment with infrared thermography.
ASTM E1213	Minimum resolvable temperature difference for thermal imagers. Basis for imager performance verification.
NETA MTS / Infraspction	Acceptance criteria and temperature-rise thresholds used for severity classification.

INDEPENDENT SECOND READ

Building the program in-house and want an outside check before an audit, or a blind re-analysis of existing findings? Look Management Group advises on scoping, equipment, procedure, and Level II/III oversight — with no equipment to sell and no inspection contract to protect.