NDT Field Inspection
Tech Best Practices by Method

General (All Methods)

- [ ] Confirm equipment calibration against approved standards before first use
- [ ] Check batteries, cables, and connectors for wear or intermittent faults
- [ ] Wipe surfaces clean of oil, paint, rust, or dirt before starting
- [ ] Verify acceptance criteria from the applicable code or procedure — don’t rely on memory
- [ ] Document as you go; don’t trust your head at the end of a shift

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Ultrasonic Testing (UT)

- [ ] Match probe frequency/angle to the weld geometry
- [ ] Use fresh couplant and reapply often on hot or rough surfaces
- [ ] Scan in multiple directions to rule out geometry echoes
- [ ] If signal is unstable, re-check wedge wear and cable connections
- [ ] Always compare suspect signals to calibration block responses

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Radiographic Testing (RT)

- ○ Verify source strength and exposure time with a calculator, not guesswork
- ○ Shield scatter paths with lead or flexible shielding if images look fogged
- ○ Keep film cassettes clean and sealed; dust and light leaks cause false calls
- ○ Confirm correct IQI placement and orientation before exposure
- ○ After processing, check density with a densitometer, not just by eye

Technical NDT Checklists continued . . .

Magnetic Particle Testing (MT)

- [ ] Ensure adequate surface prep: remove scale, paint, and oil
- [ ] Verify magnetization direction covers the flaw orientation of interest
- [ ] Keep particle bath agitated — settlement causes weak indications
- [ ] If indications look fuzzy, reduce background by improving surface contrast
- [ ] Demagnetize parts when required before handing them back

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Penetrant Testing (PT)

- [ ] Make sure surface is bone-dry before applying penetrant
- [ ] Watch dwell times closely — too short misses flaws, too long causes bleed-out
- [ ] Apply developer evenly; clumps will mask fine cracks
- [ ] Confirm light intensity (visible or UV) with a calibrated meter
- [ ] Record and clean thoroughly after inspection — no red hands or glowing fingerprints left behind

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Visual Testing (VT)

- [ ] Confirm proper lighting levels with a lux or foot-candle meter
- [ ] Use magnification where code requires; don't "eyeball" borderline cases
- [ ] Calibrate weld gauges and rulers; worn edges shift measurements
- [ ] Check both sides of a weld or component if access allows
- [ ] Photograph questionable areas for record and peer review

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