

THE DT-SECONDARY SITE ASSESSMENT CHECKLIST

13 questions to ask before your team calls a distribution transformer site “assessed.”

For DISCOM O&M, Distribution & Field Engineering Teams | RMC Switchgears Limited

RDSS has moved two things forward in a meaningful way: consumer-level smart metering, and DT-level energy monitoring for AT&C loss audits. Both are measurement systems. They tell you how much energy moved, and where it was lost — typically down to a 15-minute interval.

Neither was built to answer a different question: what is physically happening, right now, at the DT secondary — the LT Distribution Box — between the transformer and the network downstream of it? That gap doesn’t show up in an energy audit. It shows up on site.

Before your team marks a DT site as assessed, here are 13 questions worth answering honestly — not from memory, from the system.

A. FEEDER-LEVEL LOAD VISIBILITY

- ☐ Can you state the live current on each individual outgoing LT feeder from this DT — not the DT’s combined load — without a site visit?

Why it matters: A DT-level smart meter reads one aggregate number. It cannot tell you which of the 4–8 feeders coming off the LTDB is actually stressed.

- ☐ Do you know which feeder is running closest to its rated capacity, and for how long it has held that load?

Why it matters: Sustained overload on a single feeder is one of the most common precursors to a burnout — and it is invisible at the DT aggregate level.

B. PHASE BALANCE

- ☐ Has phase balance across this DT’s feeders been measured in the last 30 days — or is it assumed from the commissioning report?

Why it matters: Load composition on the ground shifts (new connections, seasonal load, informal extensions). Commissioning-day balance rarely holds a year later.

C. TOUCH & EARTH-LEAKAGE SAFETY

- ☐ Is leakage current at this LT panel monitored continuously — or only checked during a scheduled inspection?

Why it matters: Between inspections, a developing earth fault is a live safety hazard for the next person who opens that panel, or the next monsoon.

- ☐ If a field technician opens this panel today, do you know its current leakage / earth-fault status before they touch it?

D. THERMAL CONDITION

- ☐ Do you know the busbar and termination temperature inside this LTDB right now?

Why it matters: Loose LT connections run hot well before they fail. A visual inspection during a routine visit will not catch a joint that overheats only under peak load.

- ☐ Does this box have any history of hot joints, discoloration, or thermal stress at terminations?

E. PHYSICAL SECURITY & BYPASS

- ☐ Would you know if this LTDB’s door was opened outside a scheduled visit — today, last night, last week?

Why it matters: A smart meter secures the point before the LTDB. It has no visibility into what happens inside the box itself, downstream of the meter.

- ☐ Between the meter and the downstream network, is there a junction inside this box where a connection could be diverted without being logged?

F. EVENT HISTORY

- ☐ If a consumer disputes an outage, or a safety incident is reported at this DT, can you produce a time-stamped record of what happened at the LTDB — or does the record begin and end with the last physical visit?

G. ENCLOSURE & ASSET HEALTH

- ☐ What condition is the enclosure in — corrosion, paintwork, IP rating intact? When was it last physically inspected, and by whom?

Why it matters: Metal LTDBs in the field carry a recurring repainting and corrosion-management cost that rarely gets attributed back to the asset.

H. RESPONSE TIME

- ☐ From the moment something goes wrong at this DT secondary — overload, leakage, tamper — to the moment your team finds out, is that gap measured in minutes, or in “until someone happens to visit”?

READING YOUR SCORE

If you answered “no” or “we don’t know” to more than three or four of these, that is not a diligence gap in your team — it is the normal state of most LT interfaces across India today. Conventional LTDBs were designed purely as junction and protection enclosures. Nothing in them was built to answer these questions, and nothing in the smart-metering rollout was meant to either.

That is the specific gap this checklist is meant to surface: the DT secondary sits between two systems that were built to measure consumption — with nothing built to watch over the interface itself.



PULSEBOX

WHERE PULSEBOX FITS

Smart meters are the measurement layer — accurate consumption data at the consumer and DT level, essential for billing and AT&C loss audits. PulseBox™ is the action-and-protection layer at the DT secondary itself, replacing the conventional LT Distribution Box with:

- Per-feeder current monitoring, not just DT-level aggregate load
- Continuous earth-leakage monitoring at the LT interface
- Busbar and transformer-secondary temperature monitoring
- Bypass and physical tamper detection inside the LTDB itself
- Remote, time-stamped event logging — available on demand, not only after a site visit

It doesn’t compete with smart metering, and it isn’t a new component to procure alongside the LTDB — it replaces it. It answers the questions this checklist just asked, ones smart metering was never designed to answer.

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