

# Human-Reviewed Transformer Evidence Pack Template

A controlled pilot template for source-linked evidence, AI-assist boundaries, reviewer signoff, and audit-ready transformer APM handoffs.

## Purpose

Use this template to package transformer evidence before a GridAPM pilot. It helps teams separate source records, AI-drafted working notes, qualified engineering review, and final customer decisions.

## When to use it

- A maintenance or asset team wants to evaluate local-first, human-reviewed AI workflows for transformer APM.
- Evidence exists across DGA, PRPD/PD, SFRA, loading, inspections, maintenance history, CMMS/EAM, historian, and document repositories.
- Security, OT, data, and engineering stakeholders need a clear no-autonomous-control boundary before a pilot starts.

## Boundary statement

- This template is not a compliance certification, cybersecurity assessment, diagnostic standard, operating procedure, or substitute for engineering judgment.
- It does not authorize switching, protection changes, maintenance action, or final diagnostic conclusions.
- AI outputs should remain draft material until a qualified reviewer approves, edits, rejects, or escalates them.

## CTA

Package transformer evidence for a human-reviewed GridAPM pilot, then request a scoping conversation at <https://www.gridapm.com/pilot/>.

# 1. Evidence Pack Cover Sheet

Complete this cover sheet without putting confidential identifiers into public copies. Internal versions can reference asset IDs and system records according to customer policy.

Pilot sponsor	
Asset population	Transformer class, station group, voltage class, or maintenance program.
Primary use case	CBM evidence review, maintenance-window planning, large-load planning, DER/load visibility, event handoff, or another bounded workflow.
Data handling boundary	Local-first workbench, approved files only, offline workflow if required, no public tool uploads.
Reviewer roles	Transformer SME, maintenance planner, asset manager, operations/protection contact, data/security owner.
Decision boundary	What the pilot can recommend, what it can only draft, and what remains out of scope.
Approval status	Draft / reviewer returned / approved for pilot / paused.

## Out-of-scope examples

- Autonomous control of transformers, protection settings, breakers, tap changers, or switching actions.
- Production work-order approval without existing customer maintenance governance.
- Final condition diagnosis without qualified engineering review and applicable standards context.

## 2. Source Provenance Table

Traceability is the foundation of a credible pilot. Every recommendation draft should point back to source family, owner, timestamp, units, and quality notes.

DGA / oil quality			Lab method, sample conditions, units, trend continuity.	[ ]
PRPD / partial discharge			Measurement setup, pattern record, operating context.	[ ]
SFRA / electrical tests			Instrument, connection setup, baseline trace, comparison owner.	[ ]
Thermal / loading			Load history, ambient context, thermal assumptions.	[ ]
Inspection notes			Photos, field observations, defects, unresolved findings.	[ ]
Maintenance history			Work orders, closeout notes, parts, repeated actions.	[ ]
Criticality / operations			Customer impact, redundancy, spares, outage exposure.	[ ]
Reviewer / approval path			Named role, decision status, escalation route.	[ ]

### Evidence rule

If source provenance cannot be shown, the pilot package should mark the claim as unsupported, uncertain, or excluded from decision language.

### 3. AI-Assist Boundary Map

Agentic AI should help with evidence organization and draft preparation. For critical infrastructure, it should not silently turn a draft into an operational decision.

Evidence intake	Normalize field names, flag missing timestamps, group source families.	Which records are approved for use and whether quality is sufficient.
Evidence review	Summarize trends, cite source records, highlight inconsistencies.	Whether evidence supports a diagnostic interpretation or requires more testing.
Work-package draft	Draft rationale, gap list, reviewer questions, and suggested next review actions.	Final maintenance scope, priority, outage plan, and work authorization.
Report preparation	Assemble source-linked draft and decision log.	Approved language, distribution, and reportable conclusion.
Closeout learning	Capture lessons and map them to future evidence requirements.	Whether lessons change procedures, standards interpretation, or maintenance policy.

#### AI status labels

- Draft - generated from approved evidence but not reviewed.
- Needs source - claim lacks sufficient source traceability.
- Needs SME review - technical interpretation requires qualified approval.
- Rejected - reviewer found unsupported, unsafe, stale, or misleading content.
- Approved for pilot record - accepted for controlled pilot documentation only.

## 4. Human Review Workflow

Use this workflow to keep AI-generated working material separate from approved engineering decisions. It maps well to local-first workbench deployments where utility teams control evidence access.

1. Evidence package opened	Source list, owner, timestamp, data handling boundary.	Evidence approved for pilot use.
2. AI draft generated	Draft summary, gap list, source links, uncertainty notes.	Draft clearly labeled and routed to reviewer.
3. Engineer review	Reviewer comments, edits, rejected statements, extra evidence requests.	Reviewer approves, rejects, or escalates.
4. Work-package handoff	Approved rationale, open questions, maintenance planning context.	Customer governance determines any action.
5. Closeout capture	Outcome, lessons learned, evidence gaps, future data improvements.	Learning stored for future review.

### GridAPM role

GridAPM helps structure evidence, draft reviewable outputs, and preserve approval state. It does not replace the customer authority that decides maintenance, operations, procurement, compliance, or safety actions.

# 5. Audit-Ready Recommendation Page

Use one page per proposed recommendation or next review action. This format keeps the evidence trail visible and prevents unreviewed AI text from becoming a decision by accident.

Recommendation draft	Plain-language draft prepared from approved evidence. Mark AI-generated content as draft until reviewed.
Evidence supporting the draft	Source record IDs or internal links, timestamps, units, trends, uncertainty notes, and data owner.
Evidence against or unresolved	Conflicting records, missing tests, stale readings, low-confidence measurements, reviewer concerns.
Reviewer decision	Approved for pilot record / edited / rejected / escalated / more evidence required.
Maintenance or planning handoff	If approved by customer governance, describe the downstream work-package owner and the non-AI approval route.
Closeout learning	What should be captured after inspection, test, maintenance, or monitoring action is complete.

## Reviewer signoff fields

- Reviewer name/role and date.
- Decision status and reason.
- AI statements edited or rejected.
- Evidence gaps to resolve before broader deployment.
- Customer approval route for any downstream action.

## 6. Pilot Governance Checklist and Source Context

The final page should be reviewed by engineering, data/security, and pilot sponsors before source data enters a controlled GridAPM evaluation.

### Governance checklist

- No public tool uploads, file uploads, asset IDs, feeder records, or server submissions are used during public calculator steps.
- Pilot evidence is approved by the customer and handled according to customer retention and confidentiality rules.
- OT/security boundary is documented; the pilot does not send autonomous commands or alter protection/control settings.
- AI draft outputs are clearly labeled and cannot become reportable decisions without human review.
- Reviewer approval, rejection, edits, and escalation path are preserved in the evidence pack.
- Success metrics focus on evidence quality, traceability, review time, rework, and package consistency unless customer-approved financial modeling exists separately.

### Source context

NIST AI Risk Management Framework: <https://www.nist.gov/itl/ai-risk-management-framework>

NIST Cybersecurity Framework 2.0: <https://www.nist.gov/cyberframework>

NIST SP 800-82 Rev. 3, Guide to Operational Technology Security: <https://csrc.nist.gov/pubs/sp/800/82/r3/final>

DOE Large Power Transformer Resilience Report: <https://www.energy.gov/sites/default/files/2024-10/EXEC-2022-001242%20-%20Large%20Power%20Transformer%20Resilience%20Report%20signed%20by%20Secretary%20Granholm%20on%207-10-24.pdf>

IEEE C57.104-2019, dissolved gas interpretation guide: <https://standards.ieee.org/ieee/C57.104/7476/>

IEC 60599:2022, dissolved and free gas interpretation: <https://webstore.iec.ch/en/publication/66491>

#### Next step

Use the GridAPM Tools Hub at <https://www.gridapm.com/tools/> to choose the first calculator, then bring this evidence pack template to a pilot scoping call.