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THE FIVE-STATE EVIDENCE MODEL

Reconstructing Infrastructure Transitions Without Overstating the Documentary Record

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RESEARCH NOTE

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Summary

The Narragansett Electric Company, later doing business as Rhode Island Energy (RIE), was acquired on May 25, 2022; on the same day, it entered into a transition services agreement (TSA) with National Grid entities. A Northeast Power Coordinating Council (NPCC)-led team reviewed specified Transmission Operator functions in January 2024. PPL/RIE later reported an August 2024 IT-transition milestone and the exit of 135 transition services by September 30. The records describe connected events, but they answer different questions about ownership, service arrangements, technical change, and the scope of a review.[123]

The **Five-State Evidence Model** offers a way to reconstruct those relationships without assigning the entire transition a single status. It tracks five dimensions separately and ties each material conclusion to the sources, objects, dates, configurations, and record versions that support it—a practice called **claim-level evidence binding**. Documentary links are used where they exist; questions requiring additional evidence or a more specifically scoped link remain open.

Other cases examine the timing of reported proxy exercises and DTE delivery events (Powin/DTE), overlap between an issuer's test-completion claim and a testing provider's equipment list (Taihan), and corrections to disclosure fields (Hanjung NCS). Whether this approach improves decision quality—and at what cost in reviewer effort and information requests—remains untested. RheMatrix proposed a bounded, matched-case pilot to evaluate that trade-off in its October 2026 response to DOE's bulk-power-system security RFI.[13]

1. One transition, several questions

An acquisition may be complete even though contracts, services, technical systems, and review obligations are still changing. The dates associated with those developments may also differ from the dates on which they become publicly visible.

A reader examining a transition therefore faces several distinct questions: **Who owns the asset? What contractual rights and obligations apply? Who is providing or accessing a service? What technical configuration is in use? What has been tested, reviewed, or accepted—and for which object?** A single label such as *transferred* or *qualified* cannot answer all five.

The difficulty is not simply that records are incomplete. The documents may be accurate within their own scope yet concern different entities, services, versions, or periods. A contract can describe an obligation accurately while saying nothing about performance on a particular day; a technical review can accurately describe the functions examined while leaving later changes outside its stated scope. Reconstructing the relationship requires a way to keep those differences visible, while still drawing conclusions wherever the records provide a sound connection.

2. Five dimensions, not five sequential stages

The labels S1–S5 refer to separately tracked dimensions of an infrastructure relationship. They need not change together or in a fixed order and do not exhaust infrastructure risks. Here, *model* means an analytical representation for documentary reconstruction, not a statistical, predictive, causal, or risk-scoring model.

Dimension	What is tracked	Important distinction
S1 — Transaction / Ownership	Legal ownership of an entity or asset, and the date of a transaction	Closing establishes a transaction; it says little by itself about subsequent service or system changes.
S2 — Instrument & Rights	Contractual, financing, governance, and licensing rights and obligations	A right may be contingent, exercisable, exercised, or terminated; the instrument may separately be executed, amended, expired, or superseded.
S3 — Service & Access	Provision, support, maintenance, and access for a defined function	Contractual service coverage and evidence of services actually provided are separate questions; service responsibility is not a record of each technical privilege.

Dimension	What is tracked	Important distinction
S4 — Technical Configuration	Installed hardware, software, firmware, control systems, and operating configuration	A reported IT-program milestone is not a device-by-device configuration or cutover record.
S5 — Qualification / Acceptance	The object, scope, result, and continuing applicability of a specified test, review, certification, commissioning, or acceptance action	There is no universal *qualified* stage: different evaluations can concern different objects and decisions.

S5 is not the endpoint of S1–S4. A testing result, a commissioning decision, and purchaser acceptance may each have different conditions. The relevant object might be a prototype, a model family, a particular installed unit, or an operator function. The standard, configuration, location, and date can therefore determine what a favorable review actually covers. Whether one system or service can serve the same operational role as another—*operational substitutability*—is a further decision-specific judgment that may depend on service, configuration, evaluation, and project evidence together.

The five dimensions describe substantive relationships and evaluation actions. **The evidence about them has its own history.** A document issued in 2026 may describe an event in 2024; its publication date is not the event date.

3. From documents to supported claims

The second part of the approach addresses a practical question: how far does a particular source allow the reader to go? The unit of assessment is a **material claim**—a proposition about a specified object, relationship, or action at a relevant time that matters to the analysis. A document may support several such claims, and several documents may be needed for one claim.

For each material claim, the review follows four steps:

1. **Specify the claim.** Identify the actor, object, time, and relevant dimension or dimensions. A label assigned to a whole filing is not evidence for every proposition inside it.
2. **Bind the source.** Record who made the statement, what kind of record contains it, the version relied upon, and the object and period to which it applies. A company's response filed with a regulator remains the company's account.

3. **Check the connection.** When a conclusion reaches across dimensions, objects, configurations, periods, or record versions, identify the documentary link that supports that extension.
4. **Set the evidentiary limit.** Record the strongest proposition supported by the reviewed material—its *claim ceiling*—and any consequential missing, withheld, conflicting, or differently scoped evidence.

The date of an event, the date relevant contractual terms took effect, and the date a participant learned of the event may differ. A record's filing date and the date it became publicly observable can also differ from those dates—and from each other. For corrections, retain each changed field's earlier and revised values. Source specificity does not establish independence: a detailed company filing remains the company's account. Conflicting accounts remain attributed to their authors unless evidence resolves the difference. **A missing documentary link establishes neither completion nor failure of the underlying action.**

Technical authority is one application of this approach, rather than a sixth dimension. A contract may confer a right (S2), a service provider may perform a function (S3), and a system may permit privileged operations (S4).

Credentials, remote-access roles, firmware-update rights, software-release authority, and cryptographic signing authority raise distinct technical-authority questions and require separately scoped evidence. A new holder's authorization, for example, is not itself evidence that a previous holder's authorization was revoked or expired.

4. Rhode Island Energy: a bounded reconstruction

RIE's records show where a documentary connection is established and where further evidence would be required to extend a conclusion. On May 25, 2022, PPL Rhode Island Holdings acquired The Narragansett Electric Company, subsequently doing business as Rhode Island Energy. The acquisition and TSA are expressly linked in contemporaneous filings. Subsequent transition reports and a separately authored certification assessment describe other parts of the same evolving relationship.[123] These records served different purposes—transaction disclosure, service management, certification, and regulatory inquiry. Reading them together enriches the chronology without erasing the scope of each.

Event and relevant dimension	What the record shows	What remains outside that record's scope
May 25, 2022 — Acquisition and TSA (S1/S2)[1]	PPL's contemporaneous Form 8-K reports the acquisition closing; the TSA establishes a post-closing service arrangement tied to that transaction. This is a **documented ownership–agreement link**.	The agreement does not identify every later service exit or individual access-right removal.
From closing — Contractual service coverage (S2)[12]	The TSA defines contractual services. PPL's transition-report series tracks **130 services at closing and five added afterward: 135 in total**.	A service inventory is not a performance audit or a ledger of technical privileges.
2022–2024 — Reported service provision (S3)[2]	PPL/RIE reports that National Grid Service Company continued providing transition services and describes progress toward service exit.	The filings do not independently document performance or access disposition for each function.
January 23–24, 2024; report April 9 — Certification review (S5)[3]	The NPCC-led team assessed defined Transmission Operator procedures, personnel, operating tools, communications, and energy-management-system (EMS) capabilities. It found reasonable assurance that RIE had the processes, tools, training, and personnel to reliably perform the Transmission Operator function, recommended that NPCC approve certification and forward it to NERC for final review, and reported that all identified completion items were closed to its satisfaction before the final report.	The scope of that assessment cannot automatically be carried forward to every later configuration.
August 19, 2024 — Reported IT milestone (S4-related; S3 context)[2]	In an April 2026 response, RIE identifies this as completion of its National Grid-to-PPL IT transition for the stated IT-investment classification purpose.	This program-level report is not a component-by-component configuration, account, or cutover record.
September 30, 2024 — Reported TSA service exit (S3; S2 context)[2]	The final transition update, dated October 21, reports that all **135 identified TSA services** had exited by September 30.	Service exit is a different object from the revocation of each technical privilege or acceptance of each subsequent system configuration.

The closing records establish the acquisition–TSA link. PPL/RIE's reported exit of all 135 transition services is not a record of individual privilege revocations; likewise, NPCC's defined certification scope does not automatically cover later configurations. Neither gap establishes continuing access or invalidates the earlier assessment. If the disposition of a particular access privilege could affect a material decision, proportionate follow-up may involve seeking function-specific transition or authority-disposition records from an appropriate record holder, using safeguards appropriate to the sensitivity of the information.[13]

5. Other documentary problems

Powin and DTE: rights, exercise, and the information clock

In a declaration filed in Powin's bankruptcy case on **June 10, 2025**, chief restructuring officer Gerard Uzzi described a proxy instrument dated **October 25, 2024** that provided rights exercisable upon default. His account then distinguished a **March 24, 2025** default notice and account-control actions, an **April 25** exercise of proxy rights that changed Powin's governance and appointed an independent manager, and a further **June 8** exercise that amended the LLC agreement to permit up to two independent managers and appointed John R. Brecker as an additional manager.[4] Those dates distinguish the asserted instrument from its reported uses; they are drawn from a party-filed declaration, not a judicial determination of each event. The original proxy was not separately examined.

DTE Electric's separate filing describes a missed **April 30, 2025** equipment-delivery milestone for the Trenton Channel battery project and its **May 19** termination of the supply agreement.[5] The two accounts can be placed on one chronology. That chronology shows neither that the lenders' actions caused the missed delivery milestone nor when DTE learned of the financing or governance changes. An event, its public disclosure, and a particular counterparty's knowledge remain different questions.

Taihan: a reported test and an unconfirmed match

Taihan Cable & Solution's August 2026 half-year report provides a specific company account of testing activity. It marks a **March 2025** seismic test for **"U.S. PG&E 500kV AL 2750kcmil EBA"** as complete, naming **WEGAI**. Elsewhere in the same list, Taihan reports **February 2026** KEMA prequalification (PQ) test certification for a **320-kV voltage-source HVDC 3000 mm²** cable and **March 2026** KEMA type-test certification for a **320-kV compact voltage-source HVDC 3000 mm²** cable. HVDC stands for high-voltage direct current. These are separate testing propositions with different dates and objects.[6]

WEGAI's published shake-table experience list contains **"500kV | Cable Termination | Taihan Electric Wire Co. | IEEE 693."**[7] Taihan's documented **2021 change of English corporate name** explains the name difference.[8] The manufacturer and voltage class align, but the WEGAI list supplies no PG&E identifier, AL 2750kcmil EBA specification, March 2025 date, test specimen, report number, or reported result. Taihan's separate **2022 announcement** concerning a 500-kV HVDC cable-system KEMA certification refers to another evaluation.[9]

The result is a useful partial match, not an exact one. The filing establishes what Taihan reported, and WEGAI separately publishes a relevant equipment-experience entry; the two public records stop short of identifying the same test. The underlying laboratory reports were not reviewed. This leaves the exact-match question open without implying that a test failed or never occurred. Qualification or purchaser acceptance of a delivered configuration would require evidence tied to that particular configuration and decision.

A record-version comparison: Hanjung NCS

A March 26, 2026 Hanjung NCS guarantee filing concerning a U.S. subsidiary contained an internal inconsistency: its top-level debtor-relationship field said **subsidiary**, but a detailed field said **largest shareholder**. A same-day correction, described by the issuer as correcting clerical errors, brought the detailed field into line and also changed the creditor field (from Hanjung NCS to two named bank branches) and the debtor's address.[10]

A second correction on **April 6**, which the issuer attributed to execution of agreements, changed the reported guarantee period from **April 10, 2026–April 10, 2033** to **April 6, 2026–April 6, 2033**.[10] The first revision records corrections to published fields; it does not, by itself, establish that the creditors, the debtor's address, or the corporate relationship actually changed that day. The second contains a reported agreement-linked date change, although the underlying executed instruments were not reviewed. This is a comparison of **record versions**, not an assessment of the operating state of a U.S. bulk-power asset.

6. What these reconstructions contribute

The examples yield different kinds of findings: a documented acquisition–TSA link at RIE, an attributed chronology across Powin and DTE, overlap between Taihan's issuer-reported test and WEGAI's equipment-experience list without an established exact-test match, and field-level corrections at Hanjung. The method keeps these results distinct rather than collapsing them into a single status or conclusion.

These cases show that claim binding can be applied to different public records through inspectable source-to-claim links. They do not establish that the parties made erroneous decisions, how often comparable evidentiary issues arise, or whether the method improves decision quality; independent replication and comparative validation remain untested. NERC **CIP-013-2** and **CIP-010-4** set requirements within their respective applicability scopes for supply-chain cybersecurity and configuration-change management, while NIST **SP 1326** offers ICT-supplier due-diligence guidance.[11][12] This documentary method does not replace those frameworks.

Against existing change-management, diligence, and evidence-management practices, does explicit claim binding help reviewers detect unsupported closure **and** unwarranted escalation, retain material unknowns, or reach more consistent judgments—and at what cost in time and information requests? RheMatrix's October 2026 DOE response proposed a bounded pilot comparing baseline and structured reviews of matched case materials under equivalent access conditions and a pre-agreed rubric, with an independent source-based reference assessment. Negative-control cases—cases in which apparent concerns are resolvable through existing evidence or immaterial to the specified decision—would test unwarranted escalation.

Separately, targeted requests for new records would be evaluated after the initial comparison as a distinct feasibility stage; any resulting changes in findings or next actions would be reported separately from the initial review-format results rather than automatically attributed to the format. The proposed measures include justified material findings, significant omissions, reproducibility, unnecessary requests, reviewer effort, and protected-information burden. The proposal calls for revising or discontinuing the pilot if it adds burden without defensible improvement in material decisions or fails to detect consequential authority or configuration changes.[13]

There is also a practical stopping rule. A missing link may justify targeted verification when it could change a material legal, safety, reliability, technical, or procurement decision. Otherwise, recording the uncertainty may be enough. The purpose is to support judgments that fit the evidence, not to collect more evidence indiscriminately.

Methods, sources, and relationship to the DOE submission

RIE, Powin/DTE, and Taihan were **purposively selected** to illustrate different questions about the scope of infrastructure records; Hanjung serves as a cross-record-system comparator for filing corrections. The selection is neither representative nor a blind holdout. Material factual propositions were checked against the cited public records through November 7, 2026. Checking a company's or declarant's statement against its original filing establishes what that source reported, not independent verification of every underlying event or result. The document search was purposive rather than exhaustive.

The note did not undertake site inspections, laboratory retesting, interviews, privileged-access reviews, or inspection of confidential operational material. Unrecovered public or private documents are not assumed nonexistent.

This note **formalizes and illustrates the documentary-reconstruction approach that informed** RheMatrix Institute's **October 9, 2026** response to the Department of Energy's *Securing the United States Bulk-Power System* RFI (Docket **DOE-HQ-2026-1123**, submission **DOE-HQ-2026-1123-0120**). The response addressed decision-relevant records and proportionate verification; this note explains the research approach. It does not amend the submitted response.[13]

Sources and public references

English translations of Korean-language subsection headings and field values are used for navigation and description; the cited DART filings retain the original Korean-language entries.

1. **PPL Corporation**, Form 8-K, May 25, 2022, Introductory Note and Item 1.01; **National Grid USA Service Company, National Grid USA, and Narragansett Electric**, Transition Services Agreement, Exhibit 10.1, May 25, 2022, recitals and §§1.2, 3.2. Together they document the acquisition closing and closing-linked TSA arrangement. ← Back to text
2. **Rhode Island Energy**, Responses to Rhode Island Attorney General's Third Set of Data Requests, Book 1, RIPUC Docket 25-45-GE, April 2, 2026: RIAG 3-2, response p. 2 / PDF p. 3 (IT milestone); Attachment RIAG 3-2-1, PDF pp. 7–8 (130 + five service inventory); Attachment RIAG 3-2-6, final *Transition Update Report*, October 21, 2024, PDF pp. 145–148 (September 30 service-exit account). The transition accounts are company-authored and were filed with the regulator; the docket does not turn them into independent audits of individual systems or privileges. ← Back to text
3. **NPCC-led Certification Team**, NERC Transmission Operator Certification Final Report: Narragansett Electric Company d/b/a Rhode Island Energy, April 9, 2024, site visit January 23–24; PDF pp. 4–5 (evaluation scope, conclusions, recommendation, and completion-item disposition), p. 11 (Attachment B, completion-item list). This is an assessment with a defined scope, not a blanket later-configuration finding. ← Back to text

4. **Gerard Uzzi**, Declaration in Support of Emergency First Day Motions of the Debtors, *In re Powin*, Case 25-16137 (MBK), Bankr. D.N.J., Dkt. 13, filed June 10, 2025, ¶11 (p. 4), ¶¶22–23 (p. 8), ¶¶27–31 (pp. 10–11); see also Uzzi Declaration, Exhibit B to Dkt. 268, July 5, 2025, ¶¶6–8 (Exhibit B pp. 3–4). The account is party-filed, not a judicial finding; the underlying proxy instrument was not separately examined. ← Back to text

5. **DTE Electric Company**, Ex Parte Application for Accounting Authority, Michigan Public Service Commission Case U-21977, September 29, 2025, ¶¶4–7, pp. 1–2. The delivery milestone and contract termination are DTE's reported events, not an adjudicated finding of lender causation. ← Back to text

6. **Taihan Cable & Solution**, Semi-Annual Report (2026.06), OpenDART receipt 20260814003722, filed August 14, 2026, **II. Business Description → 6. Major Contracts and Research and Development Activities → 2-3. Research and Development Results**, English PDF export p. 38 (printed p. 35; subsection begins on PDF p. 37): March 2025 WEGAI PG&E 500kV seismic-test entry; February/March 2026 KEMA 320-kV HVDC certifications. These entries report three distinct test objects or purposes, and remain issuer statements; underlying KEMA/WEGAI laboratory reports, test specimens, and purchaser-acceptance records were not separately reviewed. ← Back to text

7. **W.E. Gundy & Associates (WEGAI)**, High Voltage Substation Equipment list, entry 500kV | Cable Termination | Taihan Electric Wire Co. | IEEE 693, accessed November 7, 2026. The provider list is undated and does not identify the issuer's exact PG&E test or its report. ← Back to text

8. **Taihan Cable & Solution**, Semi-Annual Report (2026.06), **I. Company Overview → 2. Company History → 4. Change of Company Name**, PDF p. 10 (printed p. 7), recording the May 18, 2021 English-name change from *Taihan Electric Wire Co., Ltd.* to *Taihan Cable & Solution Co., Ltd.* ← Back to text

9. **Taihan Cable & Solution**, press release, December 5, 2022, on a separate 500-kV line-commutated XLPE HVDC land-cable-system KEMA certification. The certificate itself was not separately reviewed; the announcement concerns a different object and purpose from the seismic entry. ← Back to text

10. **Hanjung NCS**, *Decision on Debt Guarantee for Others*, original filing, March 26, 2026, receipt 20260326901825; Report of Disclosure Revision, March 26, 2026, receipt 20260326903122; Report of Disclosure Revision, April 6, 2026, receipt 20260406900856. See 3. Reason for Revision and 4. Revised Information in the March 26 revision for the creditor, debtor-address, and debtor-relationship corrections, including a change in the detailed relationship field from identifying the debtor as the company's largest shareholder to identifying it as a subsidiary. The original top-level Relationship to Company field already identified the debtor as a subsidiary. See 4. Revised Information in the April 6 revision for the reported guarantee-period change from April 10, 2026–April 10, 2033 to April 6, 2026–April 6, 2033. The March 26 revision identifies the reason as a clerical entry error; the April 6 revision attributes the guarantee-period correction to execution of the agreement. These are issuer revisions; the executed agreements were not separately examined. ← Back to text

11. **NERC**, CIP-013-2, Cyber Security — Supply Chain Risk Management and CIP-010-4, Cyber Security — Configuration Change Management and Vulnerability Assessments, each within its relevant applicability scope. ← Back to text

12. **NIST**, SP 1326, Cybersecurity Supply Chain Risk Management: Due Diligence Assessment Quick-Start Guide, final July 8, 2026; scoped to ICT-supplier due diligence. ← Back to text

13. **RheMatrix Institute**, DOE bulk-power-system RFI submission page and 47-page filed reading copy ("Main Response and References" on the RheMatrix site), submitted October 9, 2026, comment **DOE-HQ-2026-1123-0120**; DOE's Federal Register RFI notice. See p. 9 (the five-state research distinction and source provenance) and pp. 15–17 (§H-1, the proposed bounded pilot, including the RIE worked illustration on pp. 16–17). The filing supplies research provenance rather than independent factual confirmation of these cases. ← Back to text