

NERC OPERATIONS & PLANNING COMPLIANCE

The Compliance Program built by the engineers who make the evidence

A complete NERC O&P compliance service package for generator owners and operators, transmission owners and operators, and distribution providers — registration through audit, mitigation and the technical studies that sit underneath every requirement.

Most NERC findings are not compliance failures. They are engineering artifacts that were never produced, or were produced and never retained.

A relay setting justification, a model verification record, a facility rating basis, a ground grid study, a cold weather constraint calculation — the evidence a NERC auditor asks for is engineering work product. Keentel Engineering builds and runs O&P compliance programmes **and** produces the technical evidence behind them, so the programme is not a binder describing work someone else has to do. That combination is the service package.

13	7	6	30+
O&P STANDARD FAMILIES OUTSIDE CIP	ERO-WIDE CMEP RISK ELEMENTS FOR 2026	NERC REGIONAL ENTITIES COVERED	YEARS ACROSS TRANSMISSION, GENERATION & STORAGE

O&P FAMILIES

BAL · COM · EOP · FAC · INT · IRO · MOD · NUC · PER · PRC · TOP · TPL · VAR

THE SERVICE PACKAGE

01 Assess Registration, applicability, gap assessment and risk profile.	02 Build Programme documentation, controls, responsibility matrix and calendar.	03 Evidence The technical studies and records each requirement actually demands.	04 Operate Self-certifications, data submittals, monitoring and change management.	05 Defend Audit and spot check preparation, response and evidence presentation.	06 Remediate Self-reports, mitigation plans, milestones and completion evidence.
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START A SCOPE ›› Tell us your registered functions, your Region and what is coming — an audit, a new registration or a finding — and we return a scoped fee and schedule.

THE LANDSCAPE

What O&P Compliance Covers

Thirteen standard families sit outside cyber security — and almost every one of them rests on an engineering deliverable.

FAMILY	SUBJECT	WHAT IT GOVERNS	THE EVIDENCE BEHIND IT
BAL	Resource & demand balancing	Frequency control, area control error, contingency reserves, frequency response obligations	Performance data, response measurement, operating procedures
COM	Communications	Interpersonal communication capability and three-part communication protocols for operating instructions	Procedures, training records, capability documentation
EOP	Emergency preparedness & operations	Emergency plans, load shedding, restoration and blackstart, event reporting, extreme cold weather preparedness	Plans, cold weather temperature calculations, constraint declarations, corrective action plans
FAC	Facilities design, connections & maintenance	Interconnection requirements, facility ratings methodology, vegetation management, system operating limits	Ratings methodology and calculations, as-built verification, inspection records
INT	Interchange scheduling	Evaluation, arrangement and implementation of interchange transactions	Scheduling records and coordination evidence
IRO	Interconnection reliability operations	Reliability Coordinator authority, wide-area view, operational analyses, data specifications	Data provision records, analysis outputs, procedures
MOD	Modeling, data & analysis	Steady-state and dynamic model data, generator model verification, demand and energy data, system model validation	Model files, verification test records, disturbance-based validation, submittal records
NUC	Nuclear	Coordination between nuclear plant operators and transmission entities	Agreements and coordination records
PER	Personnel, training & qualification	Operator certification, systematic training programmes, operating personnel capability	Training programme design, delivery and competency records
PRC	Protection & control	Protection system maintenance and testing, misoperation analysis, relay loadability, load shedding schemes, ride-through	Settings and calculations, coordination studies, maintenance records, misoperation analyses
TOP	Transmission operations	Real-time operations, limit monitoring, operational planning analyses, data specification	Analyses, data specifications and provision, operating procedures
TPL	Transmission planning	Planning assessments, contingency performance, geomagnetic disturbance and extreme temperature planning	Planning assessment reports, study cases, corrective action plans
VAR	Voltage & reactive	Voltage schedules, reactive resource control, automatic voltage regulator status	Schedules, capability verification, status reporting

CIP is the fourteenth family and covers cyber security — a separate discipline outside this package's scope. Where a project needs both, we scope the O&P side and coordinate with your cyber security team.

Applicability is per requirement

A standard applies to a function; a requirement often applies to a subset. The unit of analysis is the requirement, not the standard — which is why an applicability matrix is the first deliverable.

Evidence has a shelf life

Each standard carries its own data retention section. Retaining everything forever is expensive; retaining the wrong thing is a finding.

Versions move under you

Standards are revised, retired and consolidated continuously. Tracking the version in force for your functions is a control, not a subscription.

THE POINT Look down the right-hand column. Ratings calculations, model verification, protection settings, planning studies, cold weather calculations — the compliance evidence is engineering work product. That is why we run compliance programmes from an engineering practice rather than a paperwork one.

WHERE IT STARTS

Registration & Applicability

Registration decides which of roughly a hundred standards apply to you. Getting it wrong in either direction is expensive.

Registered Functions

- **Generator Owner and Generator Operator.** The functions most of our clients hold, and the ones whose obligations expanded most in 2025 and 2026.
- **Transmission Owner and Transmission Operator.** Ratings, vegetation, protection, operations and planning obligations.
- **Distribution Provider.** Registered where the entity meets the registry criteria — commonly through peak load, or through ownership of load shedding schemes or protection systems.
- **Balancing Authority, Reliability Coordinator, Planning Coordinator, Transmission Planner, Transmission Service Provider, Resource Planner.** The system-level functions.
- **Group registrations** for coordinated resource, restoration and frequency response arrangements.
- Two functions — Purchasing-Selling Entity and Interchange Authority — were removed under the risk-based registration reform, and Load-Serving Entity ceased to be a standalone registration.

Registration follows the facility, not the org chart

Aggregation at the point of interconnection decides whether a facility registers. Ownership structure and operating limits do not change the test, and a phased build-out can cross a threshold mid-project — which is the most common way an owner is surprised by registration.

The Inverter-Based Resource Category

- **A second Generator Owner and Operator category** now captures inverter-based resources that sit below the traditional bulk electric system threshold.
- **The test, all four together:** aggregate nameplate capacity of **20 MVA or more**; connection at **60 kV or above**; a system designed primarily to deliver that capacity to a common point of connection; and inverter-based technology interfacing with the bulk power system.
- **How it aggregates.** Reactive devices do not count toward nameplate; operational limitations are disregarded; in a hybrid plant only the inverter-based capacity aggregates; and multiple owners at one site each register if the site total meets the threshold.
- **The date has passed.** Regions processed these registrations in batches through 2025 and early 2026, with registrations taking effect **15 May 2026** — which is also when generating availability data reporting obligations begin for these owners.
- **Obligations phase in** standard by standard rather than all at once, which is why the applicability calendar matters as much as the registration itself.

Computational Load — Coming

- **Two new functions are proposed** — Computational Load Owner and Computational Load Operator — with draft registry criteria around aggregate connected load capability, connection voltage and hosted computational load.
- **A federal deadline is set.** NERC was directed in July 2026 to file standards, glossary definitions and registration criteria by **31 December 2026**, with a further work plan filing in early 2027.
- **Three foundational standards are in ballot** covering interconnection and modeling data, operational data and communications, and protection coordination and disturbance monitoring.
- **A Level 3 alert was issued in May 2026** — NERC's most urgent tier — directing planners and operators to act on large load risk ahead of the standards.

Registration assessment

Applicability matrix by requirement

Region liaison and submission

Aggregation analysis for phased sites

HOW YOU ARE ACTUALLY MONITORED

The Compliance Monitoring Programme

METHOD	HOW IT WORKS	WHAT WE DO
Compliance audit	Risk-based, on-site or off-site, conducted to professional auditing standards, with scope set by your risk profile rather than a fixed checklist	Pre-audit readiness review, evidence assembly, mock audit, on-site support and response drafting
Self-certification	You attest to your compliance status; the Region reviews and may request documentation. By volume this is the dominant monitoring activity	Substantiating the attestation before it is made, rather than defending it afterward
Spot check	Region-initiated document review with a minimum submission window and a draft report you may comment on	Scoping the request, assembling evidence, drafting the response and the comments on the draft report
Self-report	You report your own noncompliance, with risk assessment, cause and mitigation	Risk and extent-of-condition assessment, root cause, and drafting the report so it supports lesser-risk disposition
Self-logging	Approved entities log minimal-risk noncompliance rather than self-reporting each one	Eligibility assessment, application, and the control evidence the programme is granted on
Periodic data submittal	Data required by a standard's own schedule or on Region request	Calendar, data preparation, validation and submission
Compliance investigation	Triggered by a disturbance, complaint or suspected noncompliance; may include interviews	Technical analysis, event reconstruction and response support
Complaint	Third-party allegation raised to the Region or NERC	Technical response and evidence

Risk-Based Monitoring — How Your Scope Is Set

- **Inherent Risk Assessment.** The Region assesses your entity-specific risk — assets, registered functions, prior performance and compliance history — and determines which standards and requirements warrant monitoring.
- **Compliance Oversight Plan.** The output: which monitoring tools will be used, at what scope, over what period.
- **Then the tool is selected.** Audit, spot check, self-certification or data submittal, matched to the risk rather than applied uniformly.
- **Which means your scope is negotiable in one direction only** — by demonstrating lower inherent risk and stronger controls, before the plan is written rather than after.

CHANGED IN DECEMBER 2025

Internal Controls Evaluation No Longer Exists

The ERO Enterprise's revised internal controls guidance removed the standalone Internal Controls Evaluation. Internal controls are no longer assessed through a separate voluntary engagement — they are now evaluated **inside every compliance monitoring activity**, across design, implementation and effectiveness, and they shape your oversight plan, your audit depth and your monitoring frequency.

Framed on the five COSO components — control environment, risk assessment, control activities, information and communication, monitoring

Design, implementation and effectiveness are tested separately — documenting one is not documenting the other three

Effective controls change the nature, extent and timing of testing — and support lesser-risk disposition of findings

Any programme still built around "ICE readiness" is out of date — the work is now continuous, not episodic

NOTE Monitoring frequency is set by risk-based processes rather than a fixed calendar cycle by function. We confirm your Region's current approach and your own oversight plan at the start of an engagement rather than assuming a schedule.

WHAT THE ERO IS LOOKING AT THIS YEAR

The 2026 CMEP Focus Areas

Seven ERO-wide risk elements. Four of them are cyber; the three that are not are where O&P entities should be spending their preparation.

RISK ELEMENT	STANDARDS CALLED OUT	WHAT THE ERO SAYS IT IS LOOKING FOR
Grid Transformation NEW FOR 2026	TPL-001 · MOD-025 · MOD-026 · MOD-027 · MOD-031 · MOD-032 · FAC-001 · FAC-002 · PRC-005 · PRC-024 · PRC-027	Consistent interconnection requirements for inverter-based resources; inverter-based resources included in generator-supplied models; resources staying online and set to the correct frequency protection zone; modeling data obligations reaching the new resource category from May 2026
Facility Ratings	FAC-008	That ratings reflect the most limiting element and the as-built configuration — a perennial finding area
Extreme Weather Response	EOP-011 · EOP-012 · FAC-003	That generator owners have implemented extreme cold weather mitigation; emergency operating plans; and vegetation inspection performance. Wildfire and pre-emptive de-energization are explicitly named
Communication Protocols	COM-002 · IRO-001	Three-part communication and operating instruction protocols, and the authority relationships behind them
Remote Connectivity	CIP series	Cyber security scope — outside this package
Supply Chain	CIP series	Cyber security scope — outside this package
Physical Security	CIP series	Cyber security scope — outside this package

What changed from 2025

Incident Response was removed after a data-driven assessment showed low and stable risk. **Grid Transformation was added** as a new umbrella element, absorbing the former standalone transmission planning and modeling element and the inverter-based resources element, and broadening to cover resource expansion, new large loads, resource adequacy and energy policy uncertainty.

Your Region adds its own

Regional Entities publish their own focus areas alongside the ERO-wide plan, and you are subject to both. We check the current regional plan for your Region as part of the annual programme review.

How We Use the Focus Areas

- **As the annual preparation priority.** Evidence for the named requirements is reviewed and refreshed first, because that is what will be asked for.
- **As a self-certification filter.** The attestations most likely to be tested are the ones we substantiate hardest.
- **As a controls test.** If a focus-area requirement has no owner, no procedure and no recurring evidence production, that is a control gap regardless of whether it has ever produced a finding.
- **As a mock audit scope.** Where a full mock audit is not proportionate, the focus areas are the defensible subset to test.
- **As a board-level briefing.** A short, honest read on where the regulator's attention is this year and how the entity stands against it.

Annual focus-area gap review

Self-certification substantiation

Mock audit against the focus areas

Board and management briefing

AS OF the 2026 ERO Enterprise CMEP Implementation Plan. The plan is reissued annually and regional plans are published alongside it — both are checked at the start of each compliance year.

WHAT HAPPENS WHEN SOMETHING GOES WRONG

Enforcement, Penalties & Disposition

THE NUMBER THAT FOCUSES ATTENTION

\$1,584,648 per violation, per day

That is the current statutory maximum civil penalty, set by the January 2025 inflation adjustment. Note that it did **not** rise in 2026 — the government-wide inflation adjustment was cancelled that year because the underlying price index data was not produced, so the 2025 level continues to apply. In practice the great majority of noncompliance never reaches a penalty at all — which is the point of the rest of this page.

~85% of noncompliance is self-identified by registered entities rather than found by a regulator

~83% of dispositions are Compliance Exceptions — recorded, tracked, no penalty

~14% are Find, Fix, Track and Report — the moderate-risk path

The Enforcement Path

- **Notice of alleged violation and proposed penalty.** States the standard, the date and time, the facts and the proposed penalty. You have **30 days** to respond.
- **Your response.** Accept, contest the penalty, or contest the violation. No response within the window is deemed acceptance.
- **If contested.** A conference is scheduled within ten business days, with a defined period to resolve before a hearing may be requested.
- **Settlement** is available at any point and remains confidential until approved.
- **Notice of penalty** is issued after acceptance, decision or approved settlement, then filed with FERC, and takes effect on expiry of the federal review period.

The window that matters most is the first one

How a self-report or a response is framed — risk, extent of condition, root cause, mitigation already underway — substantially shapes the disposition. That framing is a technical exercise before it is a legal one.

The Lesser-Risk Paths — All Three Are Live

- **Compliance Exception.** For minimal-risk, mitigated noncompliance. Recorded and tracked, but no enforcement action and no penalty, generally not treated as an aggravating factor and not counted in compliance history. This is where most findings land.
- **Find, Fix, Track and Report.** For minimal or moderate risk. Still actively used, principally for the moderate-risk items that do not qualify as exceptions.
- **Self-logging.** An entity-specific approval that lets you log minimal-risk noncompliance rather than self-reporting each instance, with logged items receiving presumed exception treatment. Granted on demonstrated capability to identify, assess, root-cause and mitigate your own issues — and on evidence of management engagement.
- **What changed in 2026.** Self-log submission is now **mandatory through the ERO's workflow tool**, all six Regions apply **unified eligibility criteria**, and Regions now review logs **on submission** rather than in the former quarterly batches. Approval carries a **three-year re-evaluation**, with probation or revocation possible.

HOW FINDINGS ARE ACTUALLY DISPOSITIONED

- **Risk drives everything.** Minimal, moderate or serious risk to the bulk power system determines which disposition path is even available — before any argument about the merits.
- **Mitigation status matters at the point of assessment.** A noncompliance already mitigated when reported is treated differently from one still open.
- **Controls are an input.** Demonstrated internal controls support lesser-risk treatment; their absence removes that argument.
- **Compliance history is weighed.** Which is why closing a finding at the cause protects the disposition of the next one.
- **Self-identification is favoured.** The regulator's own reporting treats a high self-identification rate as evidence of a healthy programme.
- **Framing is technical.** Risk, extent of condition and root cause are engineering judgments that determine the commercial outcome.

THE STRATEGIC READ The ERO treats a high self-identification rate as evidence of good detective controls and a strong compliance culture — and rewards it through disposition. A programme that finds its own problems is not just safer; it is measurably cheaper.

CLOSING A FINDING PROPERLY

Mitigation

A mitigation plan that fixes the instance but not the cause will be back — and the second finding is not treated like the first.

Activities Versus Plans

- **Mitigating activities** are the corrective actions themselves.
- **A mitigation plan** is the formal written submission containing them, which requires Region acceptance.
- **Minimal-risk items** handled through the exception or self-logging routes are typically resolved with recorded mitigating activities rather than a formally accepted plan.
- **Submission deadline.** Within **30 days** of being served notification of an alleged violation — or within ten business days of a written decision, where the entity contested and did not prevail.

What a Plan Must Contain

- Technical and authorized points of contact
- The identified noncompliance
- **Root cause** — the part most often done thinly
- Activities to correct the noncompliance itself
- **Activities to correct the cause and prevent recurrence** — a separate obligation from the line above
- Anticipated impact on bulk power system reliability
- A timetable with a completion date and **milestones typically no more than three months apart**

Completion and Evidence

- **Complete by the accepted date.** Extensions are available for good cause, requested through the workflow tool, but they are not routine.
- **Certify completion** and retain documents, data and information sufficient for the Region to verify it.
- **Verification may come later** — by spot check or at audit — which is why retention matters. Where verification lags, the expectation runs to around **eighteen months**.
- **Milestones, extension requests and verification** are all managed in the ERO's workflow tool rather than by correspondence.

Where we add the most value

Root cause and extent of condition. Most technical findings are symptoms — a setting that was never justified, a model that was never verified, a rating that drifted from as-built. Finding how many other assets share that cause, before the Region asks, is the difference between one finding and a programme-level problem.

And the engineering to actually fix it

A mitigation plan that requires a coordination study, a model validation or a ratings recalculation needs someone who can produce those. We write the plan and do the work.

ROOT CAUSE — THE QUESTIONS WE WORK THROUGH

What failed, precisely, and at which requirement?

When did it start, and how was it detected?

Why did the control not catch it?

Was there a control at all?

How many other assets share the same cause?

Is the cause procedural, technical or organisational?

What prevents recurrence, not just repetition?

What evidence will prove the fix held?

Milestones every three months

A plan with a single completion date twelve months out will not be accepted. Milestones are the Region's visibility, and missing one is its own event.

Extensions are not routine

Available for good cause, requested through the workflow tool, and better avoided by proposing a realistic timetable in the first place.

Verification comes later

Completion is certified by you and verified by the Region afterward — sometimes much later, which is why retention runs well past the completion date.

THE RECURRING OBLIGATIONS

Tools, Evidence & Data Submittals

The ERO's Workflow Tools

- **Align** is the single workflow platform used by NERC, the Regions and registered entities. It carries findings and enforcement processing, mitigation management with activities, milestones, extension requests and verification, self-reports and self-logs, periodic data submittal tracking and attestation, audit and spot check documentation, the standards module and entity registration information.
- **The Secure Evidence Locker** is the separate, integrated platform where compliance evidence is placed for Region review rather than transmitted — and it interfaces with the workflow tool.
- **Housekeeping matters.** From 2026 accounts left inactive for several quarters are automatically deactivated, which is a quietly effective way to lose access the week an audit notice arrives.
- **Evidence should be built to land there.** Naming, indexing and structure planned for the reviewer's workflow, not for your own file server.

Where Programmes Slip

- **Nobody owns the calendar.** Data submittals are periodic, unglamorous and easy to miss when the person who used to do them changes role.
- **Evidence is reconstructed rather than produced.** Assembling a record after the request arrives is slower, weaker and visible to the reviewer.
- **Applicability changes go unnoticed.** A standard's applicability extending to a new resource category is a change management event, not a news item.
- **Access is stale.** Tool accounts, contact records and delegate authorities that were correct two years ago.

THE RECURRING DATA CALENDAR

PROGRAMME	WHO REPORTS	CADENCE	NOTE
GADS Generating availability	Conventional, wind and solar generating capacity above the programme thresholds	Quarterly — mid-May, mid-August, mid-November and mid-February with prior-year updates	Obligations began for the new inverter-based resource category in May 2026
TADS Transmission availability	Transmission Owners	Annual, due in February	The underlying data request was revised in late 2025
MIDAS Misoperations	Transmission Owners, Generator Owners and Distribution Providers	Quarterly, within 60 days of quarter end	Composite operation summary, misoperation detail, or a waiver
GMD data	Entities with geomagnetic disturbance exposure	On significant events, plus an annual confirmation in January	Event-driven
Cold weather data	Generator Owners	Annual	Moving to an automated portal process
DADS Demand response	Demand response providers	Currently suspended	Retain enrollment and event data pending a replacement platform
Section 1600 requests	As specified in each request	As specified	Mandatory and enforceable even though not a Reliability Standard

Build evidence once

Produced as part of the engineering work, indexed on creation, and stored where the reviewer will look for it — rather than assembled under a twenty-day clock.

Name an owner per requirement

Every applicable requirement needs a named individual, a procedure and a recurring output. Anything without all three is a control gap waiting to be found.

Test your own controls

Sampling your own evidence on a schedule is how self-identification rates get high — and self-identification is what the disposition rewards.

WHAT IS COMING, AND WHEN

The Standards Calendar

The single most useful compliance artifact an entity can hold is an accurate answer to "what changes for us, and on what date."

DATE	STANDARD	WHAT IT MEANS FOR A REGISTERED ENTITY
Already in force	PRC-028 — disturbance monitoring for IBRs	Effective since April 2025, with the capability build-out phased over several years
April 2026	TPL-008 — extreme temperature planning	A new planning assessment obligation for extreme temperature events
15 May 2026	MOD-032, IRO-010, TOP-003, VAR-001, VAR-002, PRC-012, PRC-017 and a regional balancing standard	Applicability extended to the new inverter-based resource registration category — the date a large number of resources acquired obligations they had never carried
1 October 2026	PRC-024 — frequency and voltage protection settings	Scope narrowed to synchronous machines, synchronous condensers and older wind types
1 October 2026	PRC-029 — IBR ride-through	Performance-based ride-through obligation for inverter-based resources
1 October 2026	PRC-030 — unexpected IBR event mitigation	A fixed analysis and corrective action clock following an unexpected real-power change
1 October 2026	TOP-003 — data specification	Revised operator and balancing authority data specification and collection
April 2027	BAL-007 — near-term energy reliability assessment	New energy assurance assessment obligation
April 2028	MOD-032 revised	The updated modeling data standard
April 2029	IRO-010 and TOP-003 revised	Further data specification revisions
In development	MOD-026 revised	Consolidates and retires the separate turbine-governor standard; requirements phase in at twelve and thirty-six months from effectiveness, against a federal directive for full implementation by 2030
Awaiting modification	MOD-025, FAC-001, FAC-002, FAC-003, FAC-008, COM-001, COM-002, EOP-004, EOP-005, EOP-012, IRO-001, TOP-001, TPL-007, PER-005, PER-006 and much of the PRC family	A long list of standards that must be modified before they apply to the new inverter-based resource category. No compliance dates are set yet — which is a planning point, not a reprieve
31 December 2026	Computational load standards	Federal deadline for NERC to file the new standards, glossary definitions and registration criteria

Applicability change monitoring

Quarterly compliance-date review

Implementation planning per standard

Board-level deadline reporting

Dates set the engineering schedule

Ride-through remediation may need settings changes, OEM engagement or an exemption with documentation behind it. Twelve weeks before the date is late.

"No date yet" is not "no obligation"

Standards awaiting modification for a new resource category will land. Building the evidence practice now is cheaper than a compressed implementation later.

Implementation plans matter as much as dates

Most standards phase requirements at different intervals from the effective date. The plan, not the headline date, is what belongs on your calendar.

NOTE NERC publishes a compliance-dates document for generator owners and operators that is updated quarterly — tracking it is a control, not an administrative task. Dates above reflect the position as of August 2026 and are re-confirmed at each programme review.

THE FAMILY THAT HITS GENERATORS HARDEST

Cold Weather & Extreme Events

What EOP-012 Requires of a Generator Owner

- **Calculate extreme cold weather temperatures per unit**, with a documented methodology — including how data gaps are handled.
- **Declare generator cold weather constraints** where the unit cannot meet the requirements, validated by your Region rather than simply asserted.
- **Produce corrective action plans** after a cold weather reliability event, with defined remediation windows — two years for existing freeze protection issues and four years for new freeze protection measures, with Region approval required for any extension.
- **Review constraint declarations every three years.**
- **New units entering service after October 2027** must meet the stringent freeze protection requirements or declare a valid constraint — which makes this a design requirement on projects being engineered right now.

This is an engineering deliverable, not a form

The temperature calculation, the freeze protection assessment and the constraint justification are technical work products that a Region will test. They are also exactly the kind of evidence that is easiest to produce once and hardest to reconstruct three winters later.

Per-unit temperature calculation	Freeze protection assessment
Three-year constraint review	Design compliance for new units

- **The methodology is testable.** How extreme cold weather temperature was derived, what data source was used and how gaps were handled will all be examined — so document the method, not just the number.
- **Constraints must be validated, not declared.** A constraint the Region does not accept leaves the unit exposed to the full requirement.

The Wider Extreme Weather Family

- **EOP-011** requires transmission operators to identify and prioritise designated critical natural gas infrastructure load, and balancing authorities to exclude it from demand response and emergency load shedding during extreme cold weather. Distribution providers and transmission owners develop the corresponding load shedding plans.
- **TOP-002** requires balancing authorities to establish extreme cold weather operating processes, including identification methodology, reserve margins and multi-day forecasting.
- **TPL-008** brings extreme temperature events into transmission planning assessment obligations.
- **FAC-003** vegetation management is a named 2026 focus area, with wildfire and pre-emptive de-energization explicitly identified alongside it.
- **A Canadian-specific revision** of the cold weather standard is in development.

Both Cold Weather Standards Are 2026 Focus Areas

- The ERO named both the emergency operating plan standard and the cold weather preparedness standard in its 2026 focus areas, with specific requirements identified.
- The ERO has run repeated advisory sessions and training on cold weather preparedness through 2025 and 2026 — which is usually a signal about where findings are being seen.
- Annual cold weather data submission obligations run alongside the standard itself.

Constraint declaration and justification	Post-event corrective action plan
Annual cold weather data submission	Emergency plan and load shedding support

- **Corrective action windows are fixed.** Two and four years respectively, with extensions requiring approval — which makes post-event engineering a scheduling problem as well as a technical one.
- **New units carry a design obligation.** Projects being engineered now for service after the 2027 threshold should be designed to it rather than retrofitted to it.

IF YOU REGISTERED IN 2026

The Newly Registered Entity's Problem

Several hundred inverter-based facilities acquired a compliance obligation this year that their owners had never carried before.

What Landed, and When

- **Registration took effect in May 2026** for facilities meeting the inverter-based resource criteria — 20 MVA or more in aggregate, at 60 kV or above, behind a common point of connection.
- **Eight standards became applicable on that date**, spanning modeling data, real-time operating data, voltage control, protection system maintenance and misoperation obligations — plus generating availability data reporting.
- **Ride-through and event mitigation follow in October 2026** for bulk-system resources, with non-BES resources phasing in from January 2027.
- **Disturbance monitoring builds out over several years**, to full coverage by 2030.
- **A long list of further standards is awaiting modification** before it applies to this category — with no dates set yet.

Why this is harder than it looks

A developer or independent owner with a fleet of mid-size plants may now hold registered functions across several Regions, with no compliance department, no evidence retention practice and equipment settings that were never documented against a standard. The obligation is real from day one; the programme has to be built retrospectively.

The First Ninety Days

- **Confirm the registration and the functions.** Which entity, which facilities, which Region, which functions — and whether the aggregation was assessed correctly.
- **Build the applicability matrix.** Standard by standard, requirement by requirement, with an owner named against each.
- **Find out what evidence already exists.** Commissioning records, settings files, models, test reports — usually scattered across the EPC, the OEM and the asset manager.
- **Fix the gaps that are already accruing.** Modeling data, voltage schedules and protection maintenance intervals do not wait for the programme to be ready.
- **Set up the tools and the calendar.** Workflow tool accounts, delegate authorities, evidence locker structure and the recurring submission dates.
- **Get the ride-through position understood** before the October obligation, because remediation may involve settings changes, OEM engagement or an exemption request with documentation behind it.

What We Can Produce Directly

- Modeling data packages and model verification records
- Ride-through capability assessment and settings reconciliation
- Protection system maintenance programmes and coordination studies
- Facility ratings methodology and calculations
- Disturbance monitoring design and data retention architecture
- Event analysis and corrective action plans

Multi-Region portfolio management

Fleet-wide applicability matrix

Evidence recovery from EPC and OEM

Ride-through position assessment

Evidence usually exists somewhere

Commissioning records, settings files, factory tests and models are typically held by the EPC, the OEM or the asset manager rather than the owner. Recovering them is the first task, not rebuilding them.

Obligations accrue from day one

Modeling data, voltage schedules and protection maintenance intervals do not pause while the programme is being built.

Fleets share causes

A settings or documentation gap on one plant is usually a gap on all of them — which makes fleet-wide assessment cheaper than plant-by-plant discovery.

THE HONEST FRAMING Registration is not a filing. It converts study assumptions and vendor settings into auditable obligations — and the evidence generally has to have been created during design, commissioning and model validation. Where it was not, it has to be recreated properly rather than asserted.

THE OFFERING

The Service Package

Five modules. Take one, take the set, or start where the pain is.

01 Establish

NEW OR NEWLY
REGISTERED ENTITIES

Stand up a defensible compliance programme from nothing.

INCLUDES

Registration and applicability assessment · standard-by-standard applicability matrix with named owners · gap assessment against every applicable requirement · programme documentation and governance · internal controls design to the five-component framework · evidence architecture and retention schedule · annual compliance calendar · workflow tool and evidence locker setup · initial training

OUTPUT

A working programme, a prioritised remediation plan, and a defensible answer to "what applies to us"

02 Operate

RETAINED
PROGRAMME SUPPORT

Run the programme so it does not decay between audits.

INCLUDES

Annual compliance calendar execution · self-certification substantiation · periodic data submittals · standards and applicability change monitoring · controls testing and evidence sampling · internal compliance reporting · annual refresh against the current CMEP focus areas · training refresh · management and board briefing

OUTPUT

Continuous readiness rather than a scramble when a notice arrives

03 Defend

AUDIT & ENGAGEMENT
SUPPORT

Get through an audit, spot check or investigation intact.

INCLUDES

Inherent risk assessment and oversight plan engagement · pre-audit readiness review · mock audit against the year's focus areas · evidence assembly and indexing to the audit worksheets · on-site or remote audit support · data request response · draft report review and comment · spot check and investigation response

OUTPUT

Evidence a reviewer can follow, and answers that do not create new questions

04 Remediate

FINDINGS &
MITIGATION

Close a finding once, at the cause.

INCLUDES

Self-report drafting · risk and extent-of-condition assessment · root cause analysis · mitigation plan development and submission · milestone management and extension requests · the technical remediation work itself · completion certification and evidence package · self-logging eligibility and application

OUTPUT

A closed finding, a corrected cause, and a record that supports lesser-risk disposition

MODULE 05 — THE DIFFERENTIATOR

The Technical Evidence Itself

Most compliance consultancies write the plan and hand you a list of engineering work to procure elsewhere. We do the engineering.

Protection. Coordination studies, relay settings and justification, loadability, misoperation analysis, maintenance programme design

Planning. Transmission planning assessments, contingency and extreme temperature studies

Voltage & reactive. Capability verification and schedule compliance

Modeling. Steady-state and dynamic model data, EMT models, model verification testing and recalibration

Cold weather. Temperature calculations, freeze protection assessment, constraint justification

Monitoring. Disturbance monitoring design, data capture and retention architecture

Ratings. Facility ratings methodology, calculations and as-built reconciliation

Interconnection. Requirements documentation, studies and the compliance record behind them

COVERAGE, CAPABILITY AND THE FIRMS WE WORK FOR

Who We Serve

REGISTERED FUNCTIONS WE SUPPORT

Generator Owner	Generator Operator	Transmission Owner	Transmission Operator
Distribution Provider	Transmission Planner	Planning Coordinator	Resource Planner
Balancing Authority	Transmission Service Provider	IBR Category 2 GO / GOP	Multi-function registrations

THE SIX REGIONAL ENTITIES

MRO — Midwest Reliability Organization

NPCC — Northeast Power Coordinating Council

RF — ReliabilityFirst

SERC — SERC Reliability Corporation

Texas RE — Texas Reliability Entity

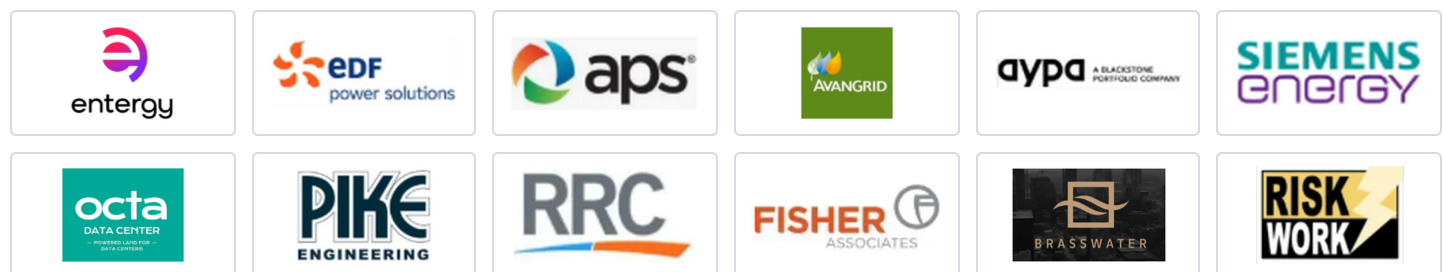
WECC — Western Electricity Coordinating Council

These are the delegated bodies that audit you — the successors to the older Regional Reliability Organization structure, which is legacy terminology. Each publishes its own focus areas alongside the ERO-wide plan, and you are subject to both. Regional variances, interpretations and audit approach differ, so confirming which Region governs is the first question in any engagement.

ENGINEERING PLATFORMS BEHIND THE EVIDENCE



OUR CLIENTS



Independent owners and developers

Registered functions across several Regions without a compliance department — the profile the package was designed around.

Utilities and cooperatives

Supplementing an existing compliance group with technical depth on the engineering-heavy standards.

Asset managers and O&M providers

Carrying compliance obligations on behalf of owners across a diverse fleet.

START HERE

Four Things and We Can Scope It

Your functions — what you are registered as, and for which facilities

Your Region — which Regional Entity governs each registration

Your position — programme in place, partial, or nothing yet

What is coming — an audit, a new registration, a finding or a deadline

WHY KEENTEL ENGINEERING

01 We produce the evidence, not just the plan

Protection settings, model verification, facility ratings, planning studies and cold weather calculations are our own practice areas — so a compliance gap can be closed rather than referred out.

03 Built for the entity that has no compliance department

Independent owners and developers now hold registered functions across several Regions without the staff a utility has. The package is scoped for that, not for a large utility's compliance group.

05 P.E.-sealed and defensible

Florida-registered firm (Reg. No. 36853) with multi-state licensure. Technical evidence written to survive Regional Entity, transmission owner and lender review.

02 Current on a programme that keeps moving

The standalone internal controls evaluation was removed at the end of 2025; the focus areas changed for 2026; a whole resource category registered in May. We track it because the dates decide the work.

04 Findings closed at the cause

Root cause and extent of condition done properly, so one finding does not become a programme-level problem at the next audit.

06 Honest about scope

This is an Operations and Planning package. We say plainly that CIP cyber security is a separate discipline rather than claiming coverage we do not provide.

PRIMARY AUTHORITIES BEHIND THIS PACKAGE

NERC Rules of Procedure. Appendix 4C, the Compliance Monitoring and Enforcement Program, including the monitoring methods, lesser-risk disposition mechanisms, self-logging and mitigation provisions; Appendix 5B, the Statement of Compliance Registry Criteria.

ERO Enterprise guidance. The annual ERO Enterprise CMEP Implementation Plan and the corresponding Regional Entity implementation plans; the ERO Enterprise Guide for Compliance Monitoring; the ERO Enterprise Compliance Monitoring and Enforcement Manual; and the ERO Enterprise Guide for Internal Controls.

Registration. The ERO Enterprise CMEP Practice Guide on application of the registration criteria for the inverter-based resource Generator Owner and Generator Operator category, and NERC's published guidance on that registration initiative.

Standards and dates. NERC's periodically updated compliance-dates publication for Generator Owners and Generator Operators; the NERC Standards, Compliance and Enforcement Bulletin; the Reliability Standards Development Plan; and the individual standards and their implementation plans.

Enforcement. FERC's civil monetary penalty inflation adjustment rules and NERC's penalty inflation adjustment notice; NERC's annual Compliance Monitoring and Enforcement Program report and its annual Find, Fix, Track and Report and Compliance Exception report; and the NERC Self-Logging Program User Guide.

Data programmes. The Generating Availability Data System, Transmission Availability Data System, Misoperation Information Data Analysis System and geomagnetic disturbance data reporting instructions, and NERC Rules of Procedure Section 1600 data requests.

Emerging. The FERC order directing NERC to develop computational load standards, glossary terms and registration criteria; NERC's Large Loads Action Plan and its 2026 Level 3 alert; and NERC's inverter-based resource work plan filings.

Positions, dates and figures described are current as of August 2026 and are provided for orientation only. Nothing here is legal advice. The Rules of Procedure, the implementation plan, the standard revision and the Regional Entity guidance in force for a given entity control, and are confirmed at the start of every engagement.

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