



TEXAS RE

MOD-026-2 Updates

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August 27, 2026





Background of MOD-026

Implementation Plan (IP)

SGAS Material

Q&A Responses

Resources





Background of MOD-026-2

Public

Consolidates MOD-026-1 and MOD-027-1

- Unifies voltage/reactive power and frequency/active power control model verification

Strengthens modeling requirements for inverter-based resources (IBRs)

Improves modeling of conventional generation and Transmission system equipment

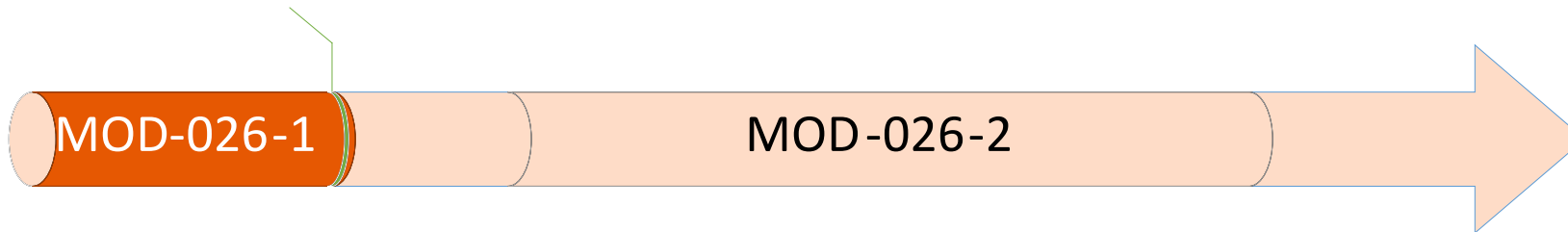




Implantation Plan (IP)

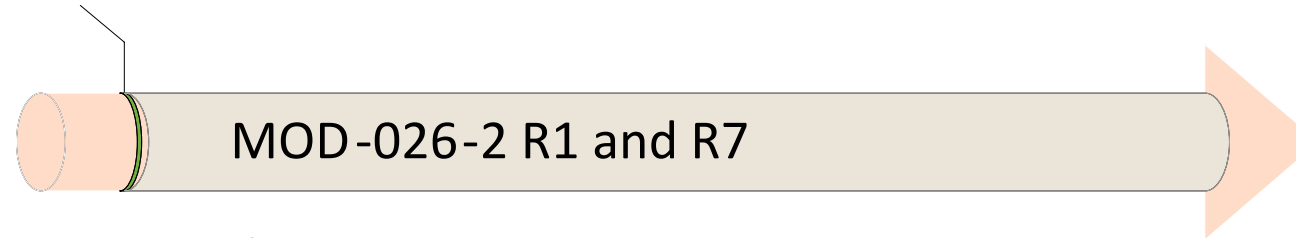
April 1, 2026

MOD-026-2 Effective Date of Standard



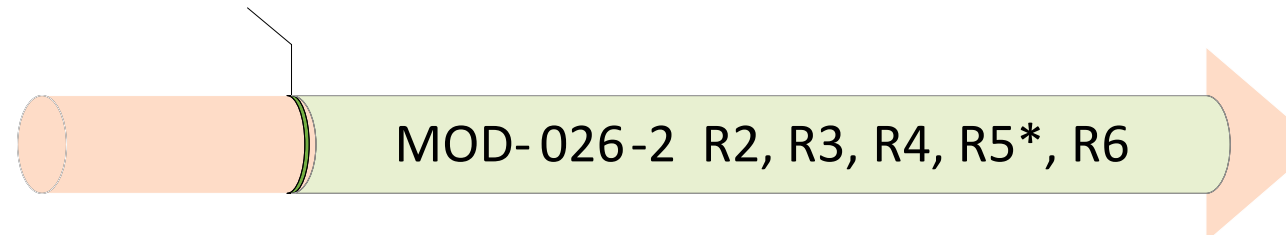
April 1, 2027

Requirement Mandatory Compliance Date



April 1, 2029

Requirement Mandatory Compliance Date

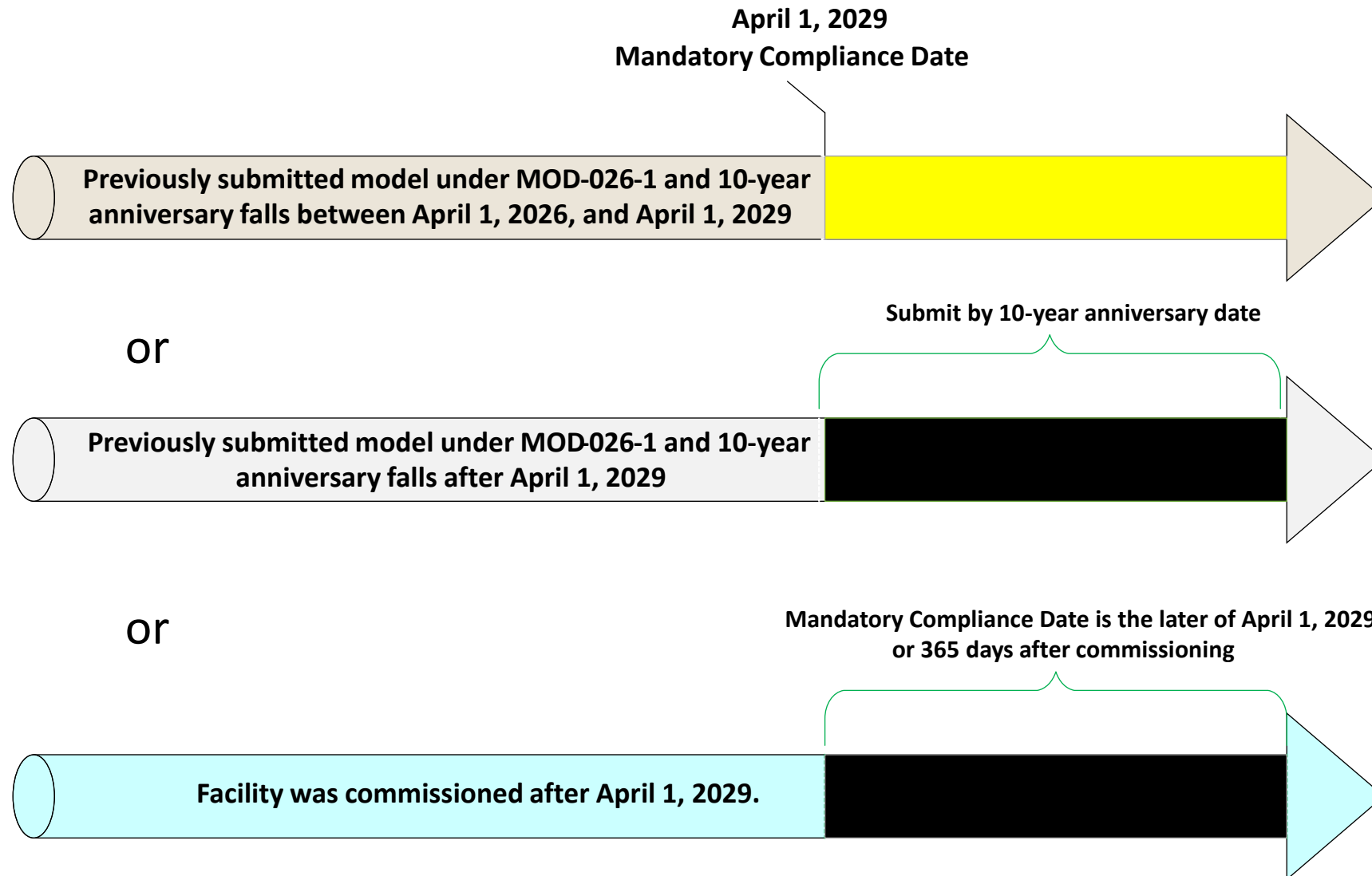


*In R5 there are certain conditions listed under “Initial Performance” section of the Implementation Plan

Source: [08-10-2026 SGAS - New IBR Resources Related Standards 2026-2027](#)



IP For R2 and R3 – Mandatory Compliance Dates



Source: [08-10-2026 SGAS - New IBR Resources Related Standards 2026-2027](#)

Ten Year Calendar For R2 and R3

Year of Last Verified Model MOD-02X-1	Periodicity (Years)	MOD-02X-1 R2 Projected Compliance (latest date)	MOD-026-2 Effective Date	MOD-026-2 R2 and R3 Compliance
2016 (prior to 4/1/2016)	10	3/31/2026	4/1/2026	12/31/2036
2016 (4/1/2016 until EOY)	10	12/31/2026	4/1/2026	4/1/2029
2017	10	12/31/2027	4/1/2026	4/1/2029
2018	10	12/31/2028	4/1/2026	4/1/2029
2019 (Up until 3/31/2019)	10	3/31/2029	4/1/2026	4/1/2029
2019 (4/1/2019 until EOY)	10	12/31/2029	4/1/2026	12/31/2029
2020	10	12/31/2030	4/1/2026	12/31/2030
2021	10	12/31/2031	4/1/2026	12/31/2031
2022	10	12/31/2032	4/1/2026	12/31/2032
2023	10	12/31/2033	4/1/2026	12/31/2033
2024	10	12/31/2034	4/1/2026	12/31/2034
2025	10	12/31/2035	4/1/2026	12/31/2035
2026 (Prior to 4/1/2026)	10	3/31/2036	4/1/2026	12/31/2036
2026 (4/1/2026 until EOY)	10	12/31/2036	4/1/2026	12/31/2036

Any models submitted April 1, 2026, and beyond are to meet MOD-026-2 modeling requirements. The split in 2019 is due to the “10-Calendar years” date in -1 versions and the MOD-026-2 Implementation Plan Initial Performance date of April 1, 2029, for R2 and R3.

Source: [08-10-2026 SGAS - New IBR Resources Related Standards 2026-2027](#)



365 Day Calendar For R2 and R3

Applicable Facilities Before/After April 1, 2026 (365 calendar day “Triggering” perspective)				
Commercial Operations Date (COD) MOD-026-1, MOD-027-1 Or MOD-026-2	Periodicity (Calendar days)	MOD-02X-1 R2 Compliance	MOD-026-2 Effective Date	MOD-026-2 R2 and R3 Compliance
3/2025 (Version 1)	365	3/2026	4/1/2026	10 calendar years after submittal
4/2025 (Transition to Version 2)	365	N/A	4/1/2026	4/1/2029
2026 (Up until 3/31/26)	365	N/A	4/1/2026	4/1/2029
2026 (April 1 and beyond until March 31, 2028)	365	N/A	4/1/2026	4/1/2029
2028 (April 1 and beyond)	365	N/A	4/1/2026	365 calendar days after commercial operations date

Source: [08-10-2026 SGAS - New IBR Resources Related Standards 2026-2027](#)



ERCOT MOD-026-2 Requirements Mapping Table to DWG PM

Requirement	Description	Mapping to Planning Guide or Procedure Manual
R1	Develop dynamic model requirement	DWG, TSPs, and ERCOT will address R1 through updates to the DWG Procedure Manual and post the ROS-approved version within 2026.
R1.1	Positive sequence dynamic model requirements, models and function in Attachment 1 (Sync generator/plant, synchronous condensers)	DWG PM 3.2 Dynamic data for equipment owned by RE, 3.2.1 and 3.2.2 Dynamic data requirements for new and existing equipment
R1.1.1	Specification of limiting and protective functions listed in Attachment 1 Table 1.1 are required to be represented in the model	DWG PM 3.2.1.1 (e.g., exciter, v/Hz etc) DWG PM 4.4.4 Generator Protection Assumptions
R1.2	For IBRs, FACTs, LCC HVDC, and VSC HVDC	DWG PM 3.2.1.2 IBRs and WGRs PG6.2(4) and 6.2.3 TSP equipment or DC tie DWG PM 3.4.5 TSP equipment or DC Tie
R1.2.1	Identification of legacy facilities that require electromagnetic transient (EMT) model(s) under Requirement R3 accompanied by a statement of need	DWG PM 3.1.2 Dynamic Models (e.g., 2015)
R1.2.2	Specification of acceptable EMT models, format, and level of detail	DWG PM 3.1, 3.1.1, 3.1.2, and 3.1.4: PSCAD model requirements PG 6.2(5) MQT and UMV Model Quality Guide (Link provided in DWG PM 3.1.4 and 3.1.5)
R1.3	Any additional requirements not listed under Requirement R1, Parts 1.1 and 1.2 used by the Transmission Planner	DWG TSP to discuss as R1.3 as is related to additional requirement used by each individual TP

Source: [Electric Reliability Council of Texas](#)



ERCOT Limiting and Protective Functions Scope

ERCOT expanded the baseline initialization and Model Quality Testing (MQT) flat-start window to 20 seconds to address critical shifts in grid behavior driven by IBRs like wind, solar, and battery storage, alongside the rapid integration of massive large electronic loads (LELs) (such as data centers and crypto mines). Historically, older thermal generation-dominated grids only required short initialization windows (often 3 to 5 seconds) because traditional synchronous machines settled quickly. The shift to a mandatory 20-second window was driven by several engineering realities:

☐ Detecting Slow Control Interactions and Instabilities

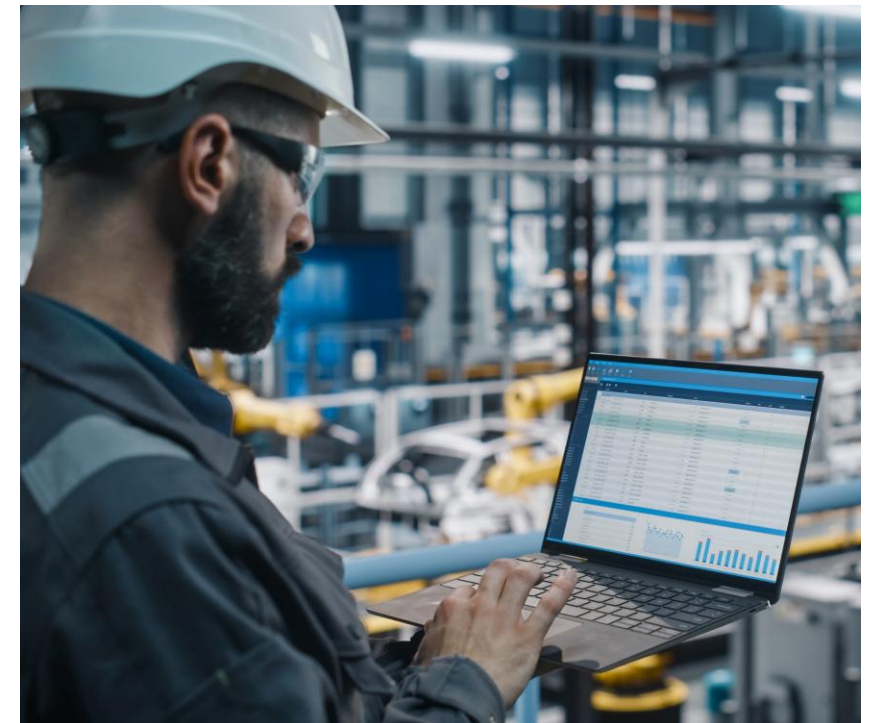
- ☐ Identifies control-loop oscillations, phase-locked loop (PLL) issues, and model drift not visible in the first few seconds
- ☐ Confirms model stability before disturbances are applied

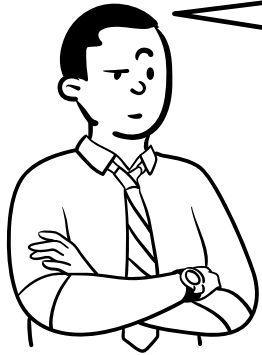
☐ Capturing Complex Load Recovery and Co-located Assets

- ☐ Reflects behavior of data centers, battery systems, cooling loads, and composite load models
- ☐ Ensures internal controls reach true steady-state conditions

☐ Compliance with Rigorous MQT Standards

- ☐ Improves confidence in PSS/E and PSCAD model accuracy
- ☐ Rejects models that drift during a 20-second undisturbed simulation
- ☐ Reduces planning risk from inaccurate or unstable models

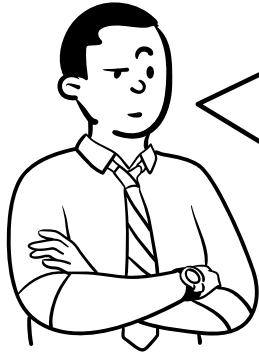




Question: I failed to submit applicable MOD-026-1 and MOD-027-1 R2 Models in a timely manner and missed a deadline. How should I proceed?

Response: Contact Texas RE enforcement and we will discuss specifics and most likely create an internal report similar to what you would have entered into Align. We will ask you to keep related records (such as evidence you would have uploaded to the SEL, if there were an open enforcement action), at least until your next audit. We would also like to see that you are on track and have a plan to meet the compliance deadlines of MOD-026-2.



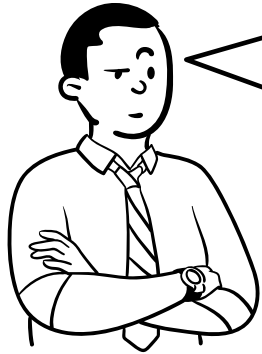


Question: I need clarification on how to interpret the MOD-026-2 implementation plan, specifically on R2 for generating units that are due for periodic model submissions under the retired MOD-026-1. The implementation plan states that units scheduled for 10-year model submission (per retired MOD-026-1 & MOD-027-1) between April 1, 2026, and April 1, 2029, would not need to comply with R2 until 36 months after the MOD-026-2 effective date (April 1, 2029). Is the intent to delay R2 (and other existing requirements) compliance by 36 months for all such units?

Response: The submission date for this scenario would be 04/01/2029 to submit the models. However, it is strongly recommended an entity update its Model Verification and Model Validation as soon as possible to meet MOD-026-2 and not wait 10 calendar years to do so, as this would impact the accuracy of the modeling data used in system operation and planning studies.

Entities should work with ERCOT on this early submittal. However, there is no requirement for the TP to review and respond to "early" MOD-026-2 submissions before they have established their dynamic model requirements. As you note, models provided before a TP/PC has provided its new requirements per R1 may not be acceptable to the TP, which would involve R5 and R6.

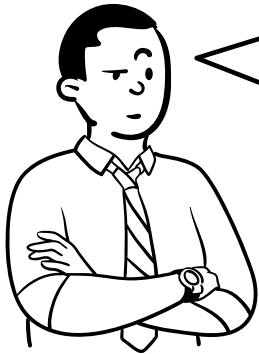




Question: The last test completion date for validation of excitation, PSS and protection models per MOD-026-1 was September 2016. Following the 10-year periodic requirement, that would mean the next test validation should be September 2026. As the compliance date for R2 is April 1, 2029, does that mean the GO has until 4/1/2029 to provide its TP the dynamic models?

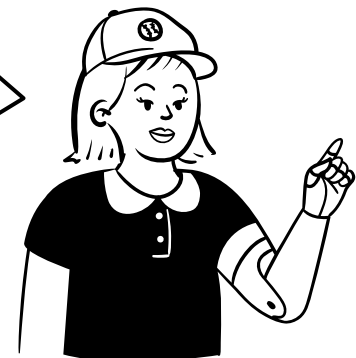
Response: The compliance date establishes when entities are expected to comply with the new requirements; however, the compliance date would not defer an otherwise applicable regional verification obligation that comes due before the compliance date. Therefore, if the September 2026 verification results indicate model updates are needed, those updated dynamic models should be provided to the associated Transmission Planner and Planning Coordinator in accordance with the applicable model reporting requirements and timelines.

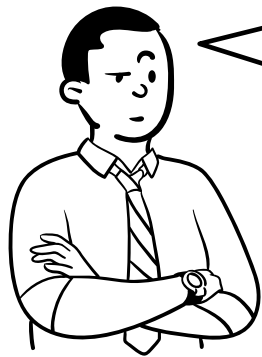




Question: If in November 2026 a GO performs an update to a unit that alters the dynamic response, according to MOD-026-2 R4, it should provide updated models to its TP within 180 days, but since the compliance date for that requirement is April 1, 2029, does that mean the GO has until 4/1/2029 to provide its TP the dynamic models?

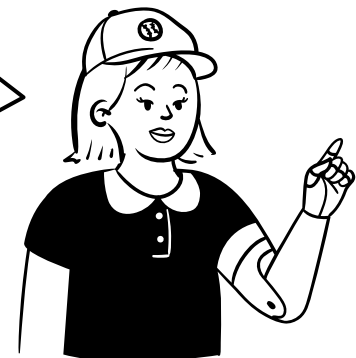
Response: If a generating unit modifies its dynamic performance in November 2026, the updated model information should be provided to the TP by April 1, 2029. Generator Owners may have separate obligations under ERCOT planning guides, protocols, operating guides, DWG procedures, interconnection agreements, or other data reporting requirements that require model updates to be submitted when facility changes occur. Those requirements would need to be evaluated independently of MOD-026-2. Generator Owners should review any applicable ERCOT requirements to determine whether updated dynamic models are required to be submitted before that date.





Question: For GO units with applicable hardware changes tested under MOD-026-1 & MOD-027-1 prior to April 1, 2026, that supplied the reports/models to the TP, how will the TP evaluate those models after April 1, 2026?

Response: For generating units that completed applicable hardware changes and provided MOD-026-1 and/or MOD-027-1 verification reports and updated models to their Transmission Planner prior to April 1, 2026, the Transmission Planner would generally evaluate those models using the requirements and criteria that were in effect at the time the models were submitted. However, once the applicable compliance dates for MOD-026-2 requirements are reached, future model evaluations and submissions would be expected to satisfy the requirements of MOD-026-2, including any new validation, reporting, or model content requirements that may apply.



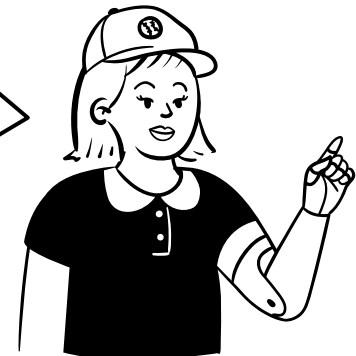


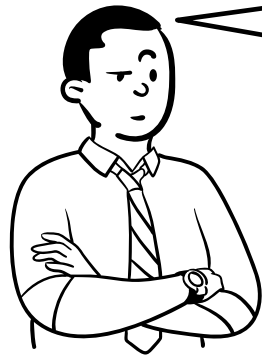
PER-005-2 R4 Questions & Answers (Part 1)



Question: Does Texas RE view simulation-based training as needing to cover each unique IROL mechanism individually? Does this expectation extend to addressing the associated mitigation strategy for each mechanism as well?

Response: The intent of PER-005-2 Requirement R4 is to ensure that personnel are adequately trained to recognize and respond to the reliability conditions within their area of responsibility. Operators should demonstrate a thorough understanding of applicable IROLs, including the ability to identify IROL conditions, monitor associated facilities, assess related risks, apply operating action guidelines, respond to contingency events that could result in an IROL exceedance, and implement appropriate mitigation strategies. The objective is to verify that operators can effectively recognize, evaluate, and mitigate conditions associated with their IROL responsibilities to maintain system reliability.





Question- Is training on general IROL mitigation concepts sufficient when individual IROL conditions cannot reasonably be replicated in available training tools?

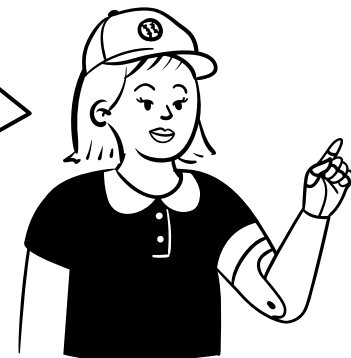
Response- If a specific IROL condition cannot reasonably be modeled in the available training environment, entities should be able to demonstrate that operators are still being trained on the nature of the specific IROLs and associated reliability risks, the contingency conditions that could lead to IROL exceedance, applicable operating plans and procedures, required operating actions, expected operator decision making steps and communications with ERCOT and neighboring TOPs/TOs and mitigation measures. The important aspect is that the applicable entities can demonstrate competency in responding to system conditions based on the emergency operations training they received using simulation technology such as a simulator, virtual technology, or other technology that replicates the operational behavior of the BES.





Question- How would TRE view compliance with R4 for an IROL based on dynamic load ride-through characteristics that cannot be directly simulated in traditional operator training environments?

Response- If an entity has an IROL that depends on dynamic load behavior that cannot be directly simulated in traditional operator training environments, entity should use alternative methods to ensure that the personnel are trained on the conditions that could lead to the IROL exceedances, expected system behavior, applicable operating plans and procedures, required operating actions, expected operator decision making steps and communications with ERCOT and neighboring TOPs/TOs and mitigation measures. Additionally, ERO lessons learned event reviews, engineering studies, planning assessments, actual system events, and tabletop exercises could all be valuable tools for communicating the reliability risks associated with dynamic load ride-through characteristics.





ERCOT Planning Guide

- Section 5.5 (6) (c) – Generation Interconnection or Modification
- Section 6.2(b) – Dynamics Model Development

Dynamics Working Group

- Provides detailed requirements regarding dynamic models
- Section 3 – Dynamic Data

Resource Entities

ERCOT Model Quality Test (MQT) Requirements



Questions?