



PGRR-109 (approved & effective)

Jonathan Rose
ERCOT Transmission Planning

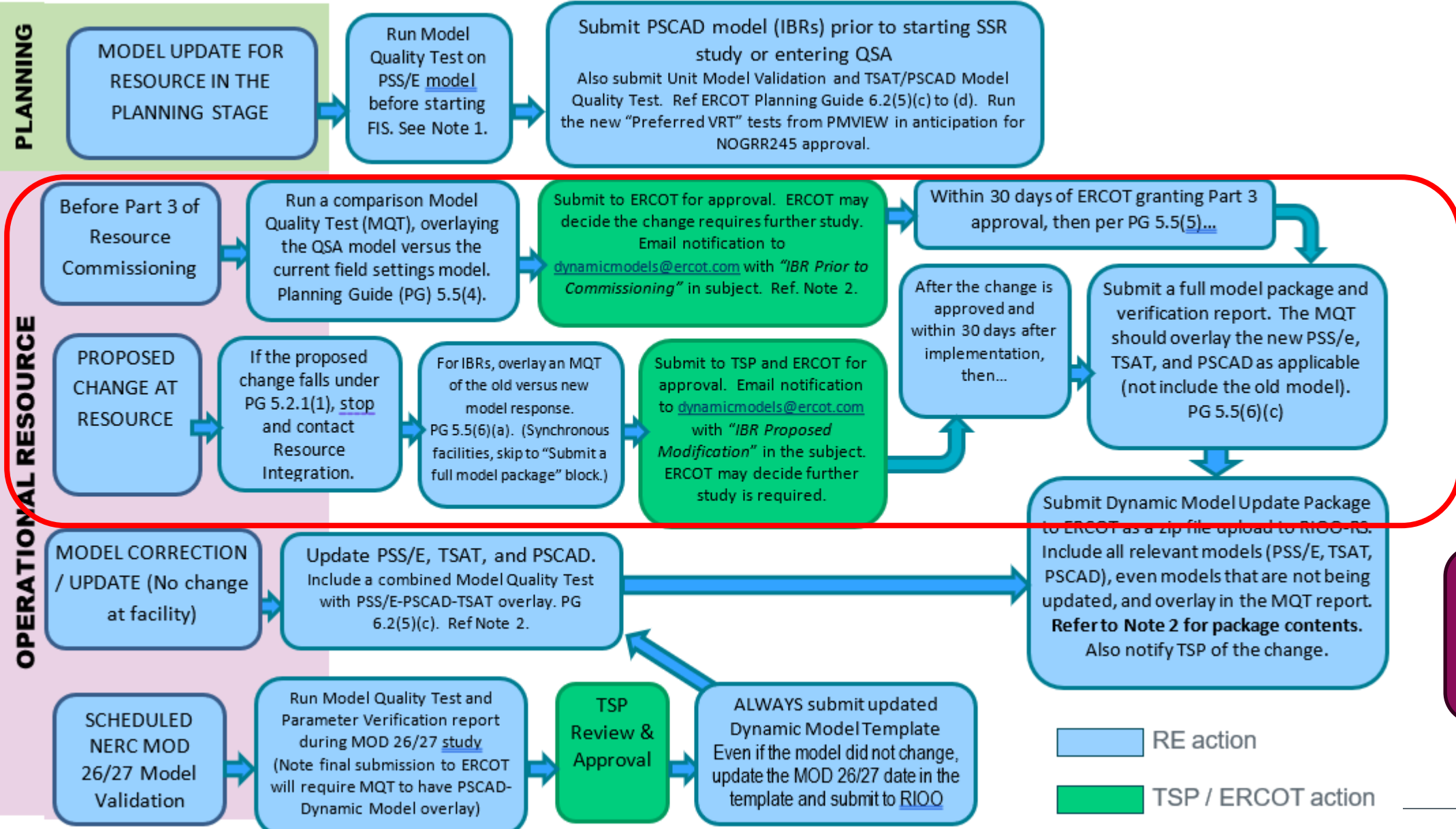
RIWG, August 21, 2024

Background – PGRR-109 (approved, effective May 2024)

- PGRR-109 (now part of Planning Guide 5.5(4) and Planning Guide 5.5(6)(a)) implemented a process to review changes to the Inverter-Based Resource (IBR) at two key times:
 - Before Resource Commissioning Date (change must be approved in order to gain Part 3 approval)
 - Any proposed change by the RE after commissioning (change must be approved prior to implementation)
- The goal is to provide ERCOT and TSPs a chance to review changes that may impact system stability
- To help with the review, ERCOT requests MQT overlays before and after the change, as well as a description of what is being changed and why (a table of changed model parameters is very helpful)
- Depending on the nature of the change, ERCOT may request the TSP perform a limited stability, may request a full stability study, or may even request evaluation through the Gen Interconnection Process for changes in the scope of Planning Guide 5.2.1.
- Request submission to dynamicmodels@ercot.com . Include key phrases in the email subject:
 - *“IBR Prior to Commissioning”* for requests before Resource Commissioning Date
 - *“IBR Proposed Modification”* for requests after Resource Commissioning Date
 - Review the [Model Quality Guide](#) checklist to ensure you have put together a complete submission

Flowchart from Model Quality Guide

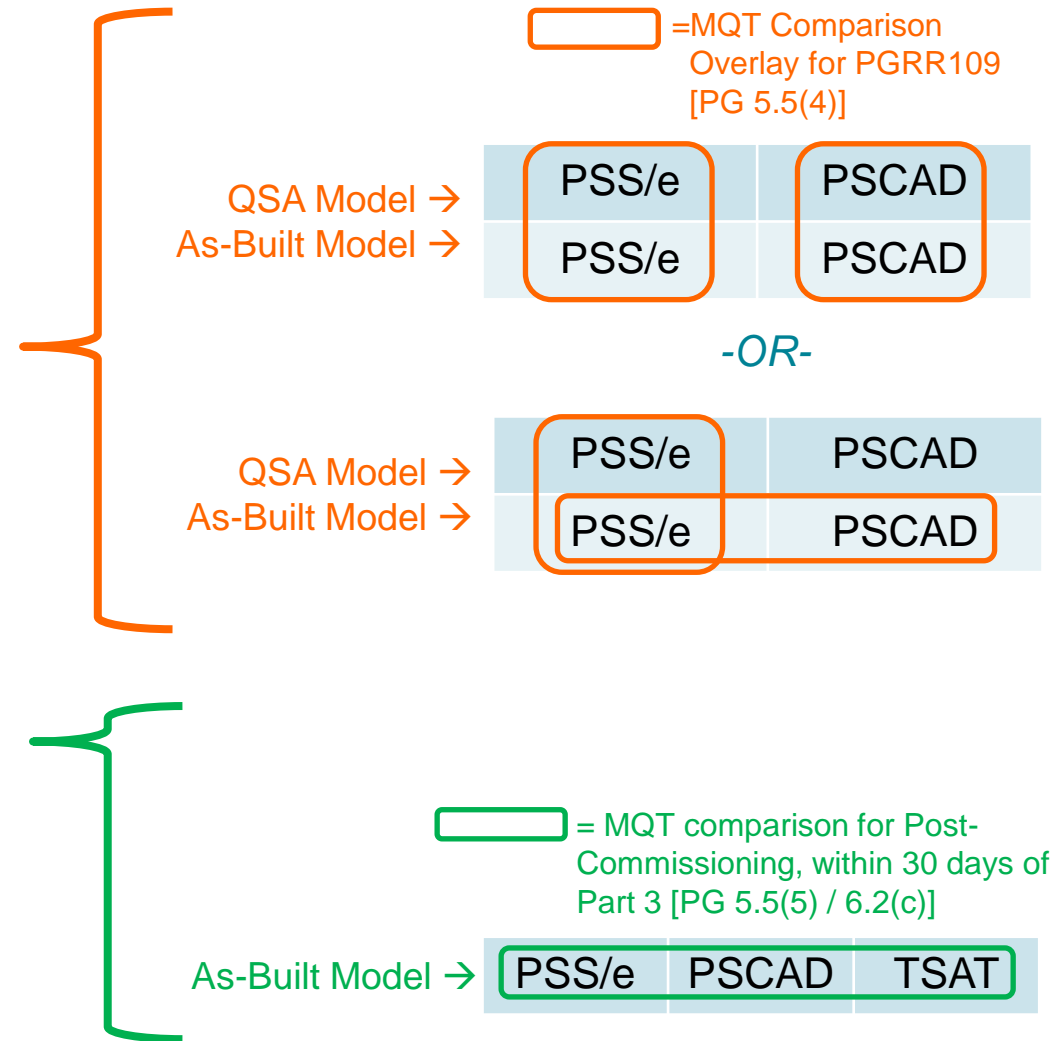
Model Quality Guide is posted at:
<https://www.ercot.com/services/rq/re>



Planning Guide 5.5 requirement from PGRR-109

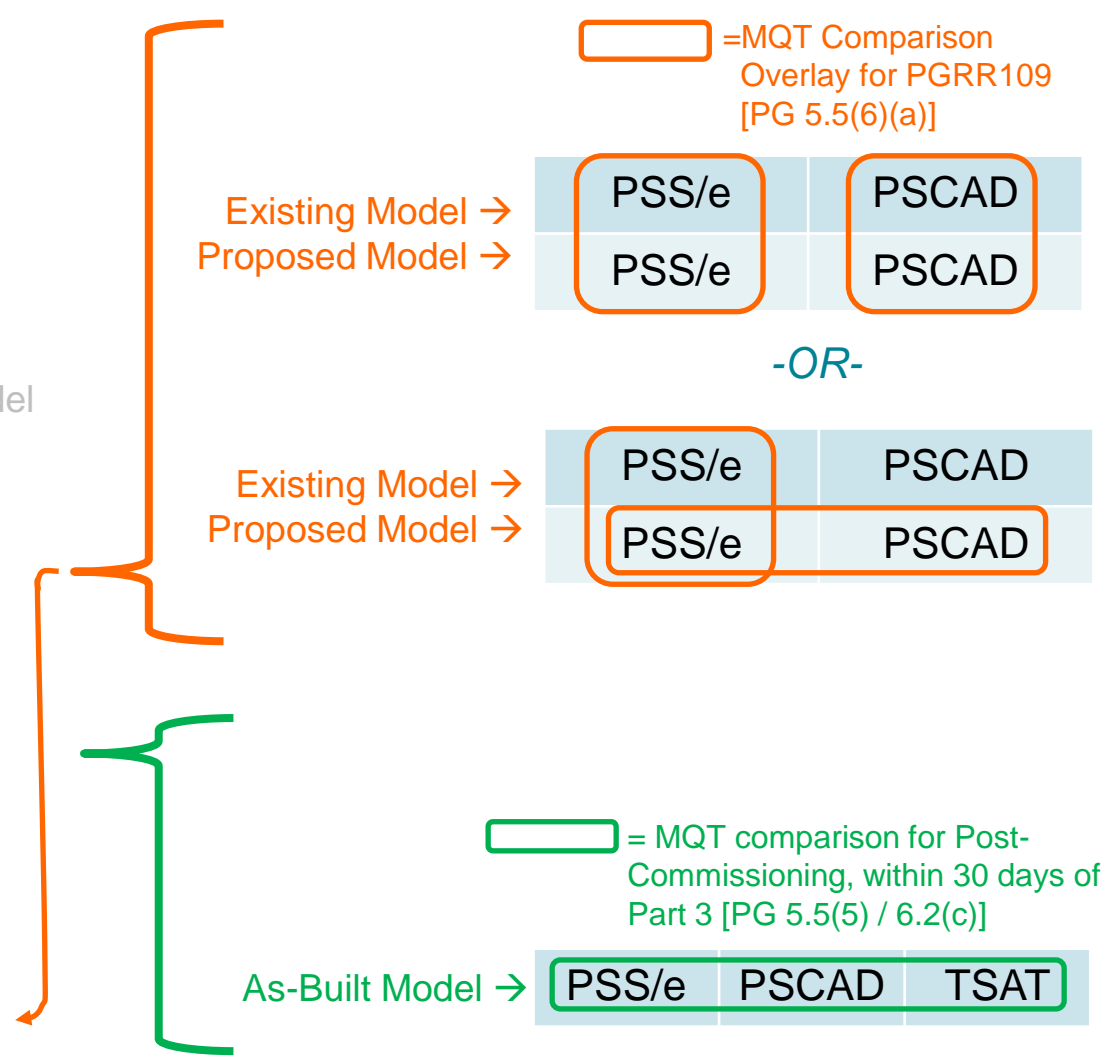
MQT Overlays

- Model submission for QSA:
 - Overlay PSS/e, PSCAD, and TSAT (models of planned settings)
- Model submission for PGRR-109, before Resource Commissioning Date :
 - Overlay the PSS/e of the QSA model versus the PSS/e of the as-built model
 - Either:
 - overlay the PSCAD in a similar fashion (QSA versus as-built) or
 - overlay the as-built PSCAD versus the as-built PSS/e
- For an existing as-built site (due 30 days after Part 3 approval or 30 days after implementing a settings change):
 - Overlay PSS/e, PSCAD, and TSAT (models of actual settings)
- Model submission for PGRR-109: Proposed modification after commissioning
 - Over the PSS/e model before the proposed change versus after
 - Either:
 - overlay the PSCAD in a similar fashion (before versus after) or
 - overlay the proposed PSCAD versus the proposed PSS/e




MQT Overlays

- Model submission for QSA:
 - Overlay PSS/e, PSCAD, and TSAT (models of planned settings)
- Model submission for PGRR-109, before Resource Commissioning Date:
 - Overlay the PSS/e of the QSA model versus the PSS/e of the as-built model
 - Either:
 - overlay the PSCAD in a similar fashion (QSA versus as-built) or
 - overlay the as-built PSCAD versus the as-built PSS/e
- For an existing as-built site (due 30 days after Part 3 approval or 30 days after implementing a settings change):
 - Overlay PSS/e, PSCAD, and TSAT (models of actual settings)
- Model submission for PGRR-109: Proposed modification after commissioning
 - Overlay the PSS/e model before the proposed change versus after
 - Either:
 - overlay the PSCAD in a similar fashion (before versus after) or
 - overlay the proposed PSCAD versus the proposed PSS/e



After completing a modification and after Part 3 approval

- Within 30 days, submit full model package + Verification report [PG 5.5(5), PG 5.5(6)(c), PG 6.2.1(2)]
 - MQT overlay the final models (PSS/e versus PSCAD versus TSAT)
 - Provide a verification report confirming that field parameters match the model

 = MQT comparison for Post-Commissioning, within 30 days of Part 3 [PG 5.5(5) / 6.2(c)]

As-Built Model →

PSS/e	PSCAD	TSAT
-------	-------	------

Questions?



Comments to:

Jonathan.Rose@ercot.com

John.Schmall@ercot.com

Sunwook.Kang@ercot.com

General Reminders:

1. PSCAD models must be submitted in [PSCAD Template format](#)
2. PSCAD models should meet requirements in PSCAD Model Guideline from [Model Quality Guide](#) package
3. Ensure PSS/e and TSAT models match registration for unit aggregation, unit names, and unit definitions.
4. Submit PGRR-109 requests to dynamicmodels@ercot.com. See slide #2 for further instructions.
5. Please start modeling switched shunt and transformer tap controllers; will be required per the [draft DWG Procedure Manual](#)