



Declaring Power Plant Controllers in QSA

(Previously presented at
[April RIWG](#) and
[September IBRWG](#))

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Power Plant Controller (PPC)

ISSUE:

- ERCOT has observed significant difference between the “as-built” model performance versus model assumed in FIS / QSA studies
 - Change in PPC appears to be a leading cause. “As built” PPC sometimes less capable than initially assumed, for example, some PPCs appear unable to meet MQT performance requirements
 - Potential compliance issue and project delay due to substantial changes not reported in a timely manner, which may trigger a restudy of the FIS and QSA processes [Planning Guide Section 5.3.2.5(9)]

SOLUTION:

- IEs/REs required to report hardware changes with a new model [PG 6.2(6)] within 30 days [PG 6.2.1(2)]
- **Starting April 21, 2025 ERCOT will require reporting of PPC make and model number whenever a dynamic model is provided.**
 - This is already required reporting for the turbines/inverters OEM.
 - Answering “**Undecided**” is allowed for FIS, however note:
 - Please update your models as soon as equipment is known so ERCOT/TSPs can decide if restudy is needed
 - Aligns with current practice when changing wind turbines or changing solar inverters
 - Fill in answer in the new Dynamic Model Templates (picture below) and mention in MQT report
 - If using an old Template, place note in the comments box.
 - TSPs, please indicate PPC assumption in FIS stability study reports

Do the main transformers have on-load tap changers (OLTC)?	(Make Selection)
IBRs, What is the OEM and model # of your Power Plant Controller (PPC)?	
IBRs, what is the firmware version and date of the PPC? (required for PVR)	

PPC Update – Must Report Manufacturer (OEM)

- Must fill out PPC OEM / version in Template to enter May 1st 2026 QSA
 - PPC should be known upon QSA unless there is an extenuating circumstance
 - Changing PPC is allowed but may trigger a restudy per PG 5.2.1(1)(iii) and PG 5.3.2.5(9) (these are existing requirements)
 - PSCAD model manual must show control block diagram illustrating field-adjustable controls as per DWG Procedure Manual 3.1.4 (applies to all IBRs and includes the inverter, PPC, and any other dynamic devices)
 - Custom-built PPCs should reference the model manual showing the block diagram if unable to specify the OEM / version number
- Very important to study realistic PPC during FIS
 - Some PPC models appear to have unrealistic gains and communication delays
- PPC OEM / version to be confirmed prior to energization
 - Changing PPC OEM after QSA may require restudy and delay energization

Reminder!

- Submit **realistic** PPC models for **FIS**, QSA, and commissioning
 - Realistic gains and communication delays
- Specify PPC to enter QSA
 - Fill out PPC question in Template
 - PSCAD model manual should show high-level control block diagrams of PPC and inverter
- Re-submit Models, Template, Manuals, and MQT before energization
 - Existing Planning Guide 5.5(1) requirement
- Changes are allowed but restudies may be necessary
 - Please resubmit models and send an email to your RI engineer as soon as you become aware of a significant change
 - ERCOT will determine if restudies are needed per existing requirements

Thank You!

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