



Generator Interconnection Queue Improvements (PAC-2023-1)

Standardizing Generator Interconnection Application Model Data

Updated 7/21/2026 – Slide 20
Correction to example regarding
how the PSSE model should
represent shared facilities

Interconnection Process Working Group (IPWG)

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Purpose & Key Takeaway



Purpose

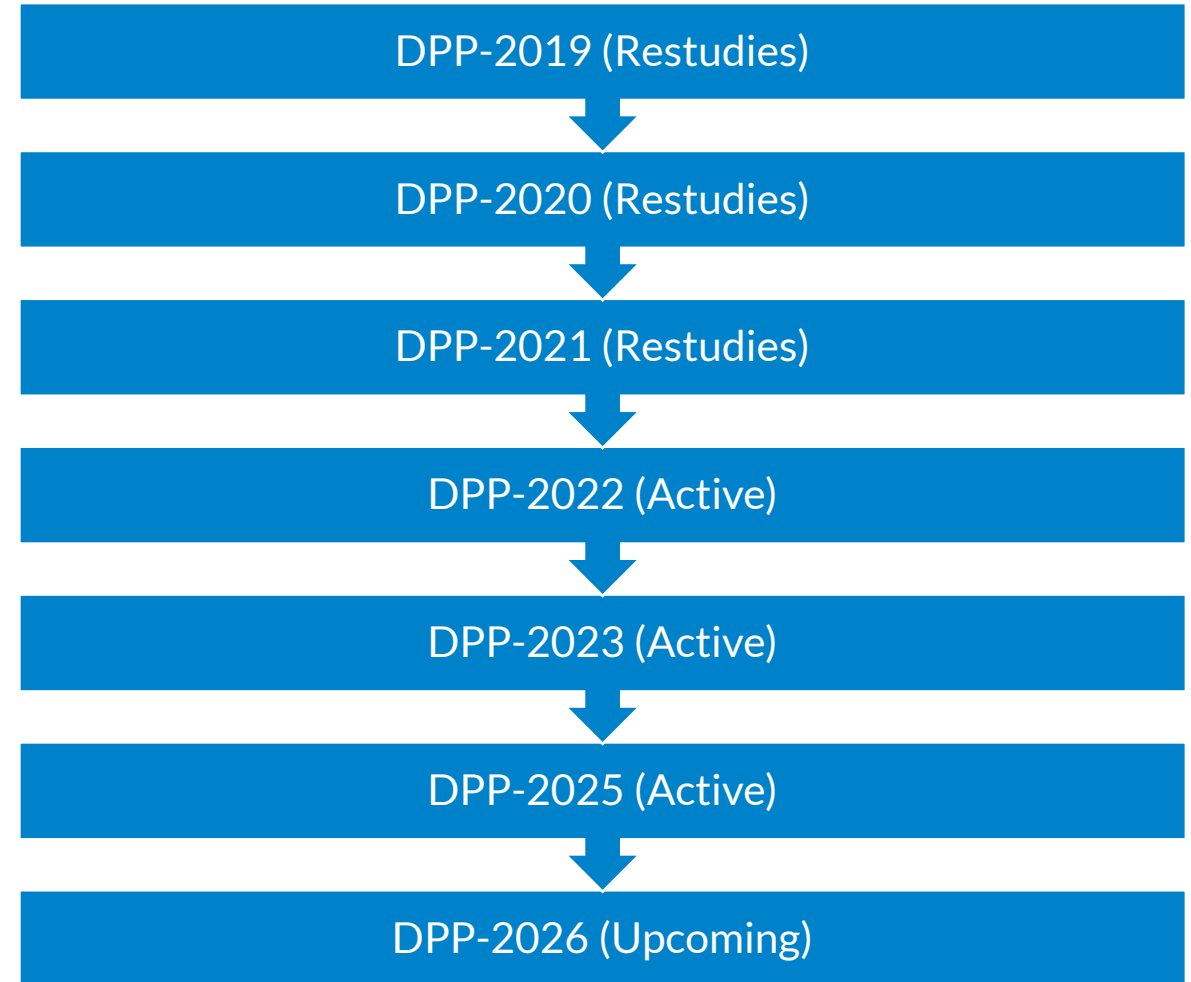
Reintroduce the need to standardize collection of power flow modeling data in the Generator Interconnection Queue Process

Key Takeaways

- Reforms are needed to ensure data is collected in a consistent manner, maintained to reflect the latest project assumptions throughout the cycle, and can be used to facilitate the automation of the model build
- Automating the model build will enable MISO to produce highly accurate, complex models quickly and help meet Tariff timelines
- MISO is requesting feedback on proposed data rules by August 4

Why Data Improvements Now?

- FERC Order 2023 requires Attachment X studies to be completed within Tariff timelines or face financial penalties
- Until MISO can close out older DPP cycles, MISO will continue to support work multiple cycles simultaneously
- MISO must find ways to build complex models accurately and quickly to support existing Tariff timelines



What does the roadmap to success look like?

- Utilize the existing GI portal to serve as the “source of truth” for the latest project design assumptions from the time a project is submitted until it obtains a GIA
- Share proposed data and file rules with stakeholders, collect feedback, and iteratively refine the rules until consensus on the rules is met
- Once approved, post the data/file rules in the MISO Help Center Knowledge Base under Generation Interconnection’s Knowledge Articles
- Audit data/files in the GI portal to identify discrepancies between the latest project assumptions and what MISO has on record
- Coordinate with customers to revise data/files in the GI portal to support automated model build efforts

Why does MISO need a PSSE model?

- Currently, the GI portal does not store modeling data in a way that is conducive to model building
 - Data is collected in multiple locations (ex. main step-up transformer data collected in application and supplemental documents (A-6))
 - Connectivity information (i.e. how elements relate to one another) is not captured
 - Shared facilities information is often not clearly specified in the Shared Facilities Consent Agreement

How will MISO use the PSSE model?

- MISO will leverage the Interconnection Customer (IC) provided PSSE model (.raw) in the automated model build
- MISO will download the PSSE model from the Interconnection Request's document section and merge that file into the starting MTEP model to create the BASE model
- To ensure the PSSE model will be merged correctly, each Request Type will be required to adhere to specific rules
- MISO is soliciting feedback on the proposed rules. Based on the feedback, MISO will review and revise the rules so that they are easy to understand, consider most Interconnection Request designs, and can be incorporated into the model build automation logic

Why invest the effort to make older projects abide by these new rules?

- The automation can quickly (~30 minutes) identify input file errors (POI data, PSSE model, and dispatch data) and provide valuable insight as to why the model build (or dispatch) failed for hundreds of projects
- Automating the model build requires clear and concise inputs. These inputs can be shared with ad-hoc group members during the study process for detailed review.
- Automating the bench and study model build (i.e. dispatching hundreds of projects) is often accomplished within a few hours
- If backbone upgrades are needed, the automation has the capability to propose temporary solutions (HVDC or SVC) until coordination with the Transmission Owner can occur

Additional Benefits

- PSSE model clearly shows shared facilities behind the same POI (leading to less confusion regarding interconnection facility costs)
- When facility modification requests are approved, the Interconnection Customer will update the portal to reflect the updated assumptions within 10 Business Days (BD). This ensures the latest project assumptions are ready for the next phase/build.
- Potential time savings for the Generation Interconnection Agreement (GIA) team as negotiators would be able to trust portal data/files as opposed to hunting down the latest data
- Potential improvement to public queue as POI and service type would reflect the latest project assumptions

Next Steps

- Review proposed rules for the collection of portal data and files
 - Portal data rules impact Request Type, Service Type, Service Amount, and POI Data
 - Portal file rules impact one-line diagram and PSSE model (.raw)

Stakeholder Feedback Request

- MISO requests feedback on **Standardizing Generator Interconnection Application Model Data (PAC-2023-1)** by August 4, 2026
 - Please provide feedback on the following:
 - Proposed data rules
- Feedback requests and responses are managed through the Feedback Tool on the MISO website: <https://www.misoenergy.org/engage/stakeholder-feedback/>



For support, please contact the
MISO Help Center
<https://help.misoenergy.org/support>

Appendix

Data Rules: Request Type

- Each Interconnection Request must specify a request type
- “Increase in the generating capacity or a Material Modification of an Existing Generating Facility” may not be selected if the Existing Generating Facility does not have an executed GIA

Data Rules: Service Type, Service Amount, and Decision Point Elections

- The service amount (MW and MVAR) specified in the GI portal must align with the latest Decision Point Election (if applicable)
- Network Resource Interconnection Service (NRIS) may not exceed Energy Resource Interconnection Service (ERIS)
- Existing ERIS is required when requesting NRIS Only

Data Rules: Point of Interconnection

- Reference bus numbers must be provided
 - If POI Type = Substation
 - MISO expects one and only one bus number
 - Bus number may be an existing MTEP bus or an active, higher queued five-digit bus number
 - If POI Type = Transmission Line
 - MISO expects two and only two bus numbers
 - Bus numbers must be existing MTEP bus numbers
- Exceptions may be made on a case-by-case basis (ex. a conventional generator has two POIs at different kV levels)

Data Rules: Point of Interconnection

- The “lower” MTEP bus number will be considered “Bus A” and the “higher” MTEP bus number will be considered ‘Bus B”
- Reference distance A will correspond to Bus A
- Reference distance B will correspond to Bus B
- The sum of the reference distances should equal the MTEP reference branch
- The POI submitted in the portal data must align with the one-line diagram (ex. reference distances)

File Rules: PSSE Model

New Interconnection Requests

- Bus names follow the following convention: J1234_GEN1, J1234_PAD1, J1234_COL1, J1234_TER1, J1234_SUB, J1234_POI. The lowest project number is used for facilities shared by more than one project. If the project number (i.e. J#) is not known, the project ID may be used.
- If temporary bus numbers have not yet been assigned, use bus numbers ranging between 1-99. Otherwise, use the temporary bus numbers assigned. If more are needed, please consult with MISO.
- There is one and only one "grid" bus of type 3. There is an infinite generator at this bus.
- No dummy buses or branches included

Example

- J1111 and J2222 are sharing J1111's gen-tie. DPP bus numbers have not yet been assigned.
 - J1111_POI (Bus 8)
 - J1111_SUB (Bus 7)
 - J1111_COL1 (Bus 3), J2222_COL1 (Bus 6)
 - J1111_PAD1 (Bus 2), J2222_COL1 (Bus 5)
 - J1111_GEN1 (Bus 1), J2222_GEN1 (Bus 4)

File Rules: PSSE Model

New Interconnection Requests

- No existing MTEP bus numbers included
- PSSE model only includes facility information from generator to POI (i.e. does not show branches to adjacent substations, if applicable)
- Topology and equipment are modeled as in-service
- Generator ID denotes fuel type for renewables (PV, WT, or ES)
- PSSE model parameters align with data and files in GI portal (ex. one-line)
- The number of projects included in the PSSE model should reflect the shared facility assumptions submitted for the current study DPP cycle.

Example

- Project A is queued to DPP22, Project B and C are queued to DPP23, and Project D is queued to the DPP25. A, B, C, and D will all share a common gen-tie.
- Project A's PSSE model would only contain Project A
- Project B's PSSE model would contain Projects A, B, and C. (.raw for B and C would be the same)
- Project C's PSSE model would contain Projects A, B, and C. (.raw for B and C would be the same)
- Project D's PSSE model would contain Projects A, B, C, and D.