

Provisional Interconnection Service in MISO and SPP - Education

Ed Franks

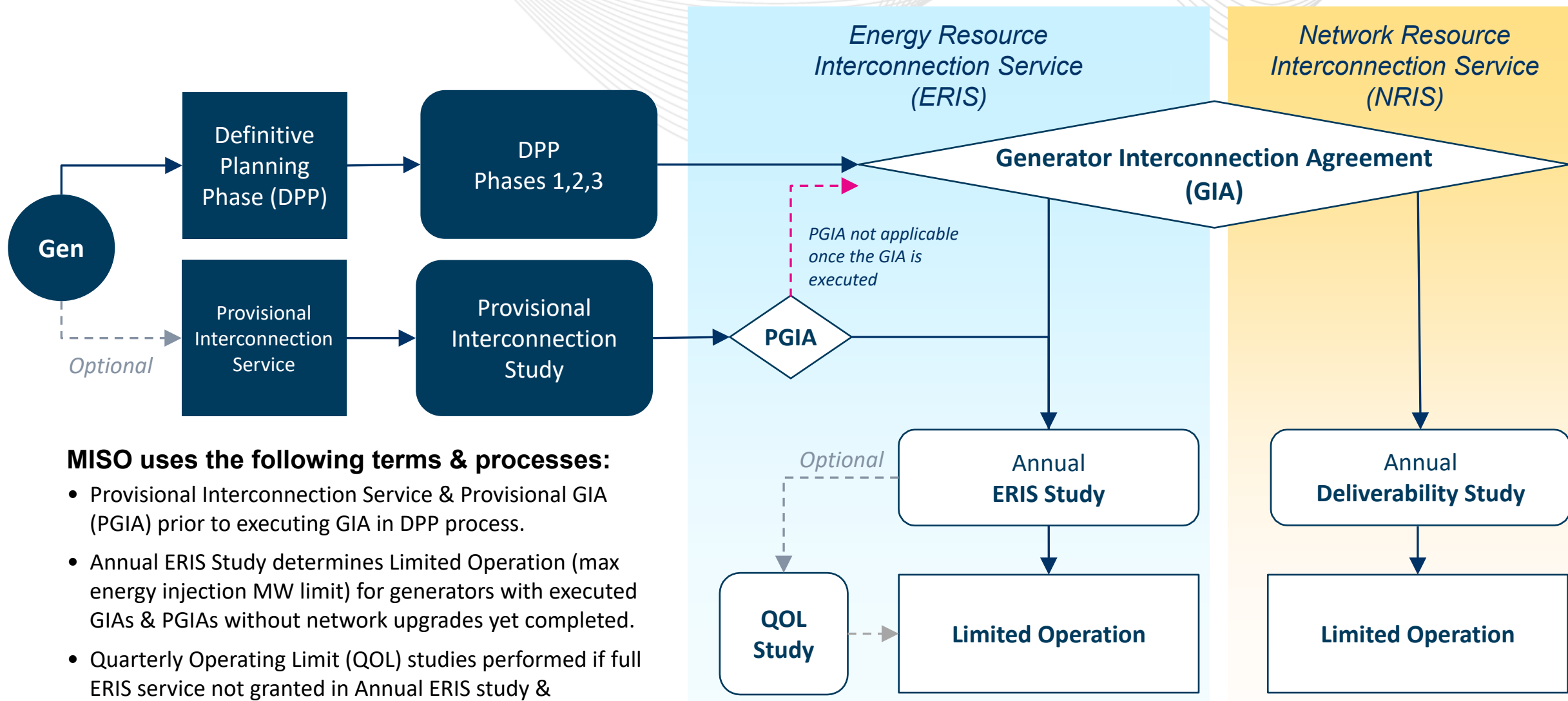
Interconnection Analysis Department

Interconnection Process Subcommittee

January 26, 2026

- MISO - Provisional Interconnection Service
- SPP - Provisional Interconnection Service
- Key Takeaways
- References

Note: the information provided in this presentation is a high-level overview of MISO and SPP processes related to Provisional Interconnection Service per PJM's review and understanding. Please refer to the provided MISO and SPP Tariff and Manual References provided on slides 15 and 16 for the rules governing Provisional Interconnection Service in MISO and SPP.



MISO uses the following terms & processes:

- Provisional Interconnection Service & Provisional GIA (PGIA) prior to executing GIA in DPP process.
- Annual ERIS Study determines Limited Operation (max energy injection MW limit) for generators with executed GIAs & PGIA's without network upgrades yet completed.
- Quarterly Operating Limit (QOL) studies performed if full ERIS service not granted in Annual ERIS study & requested.

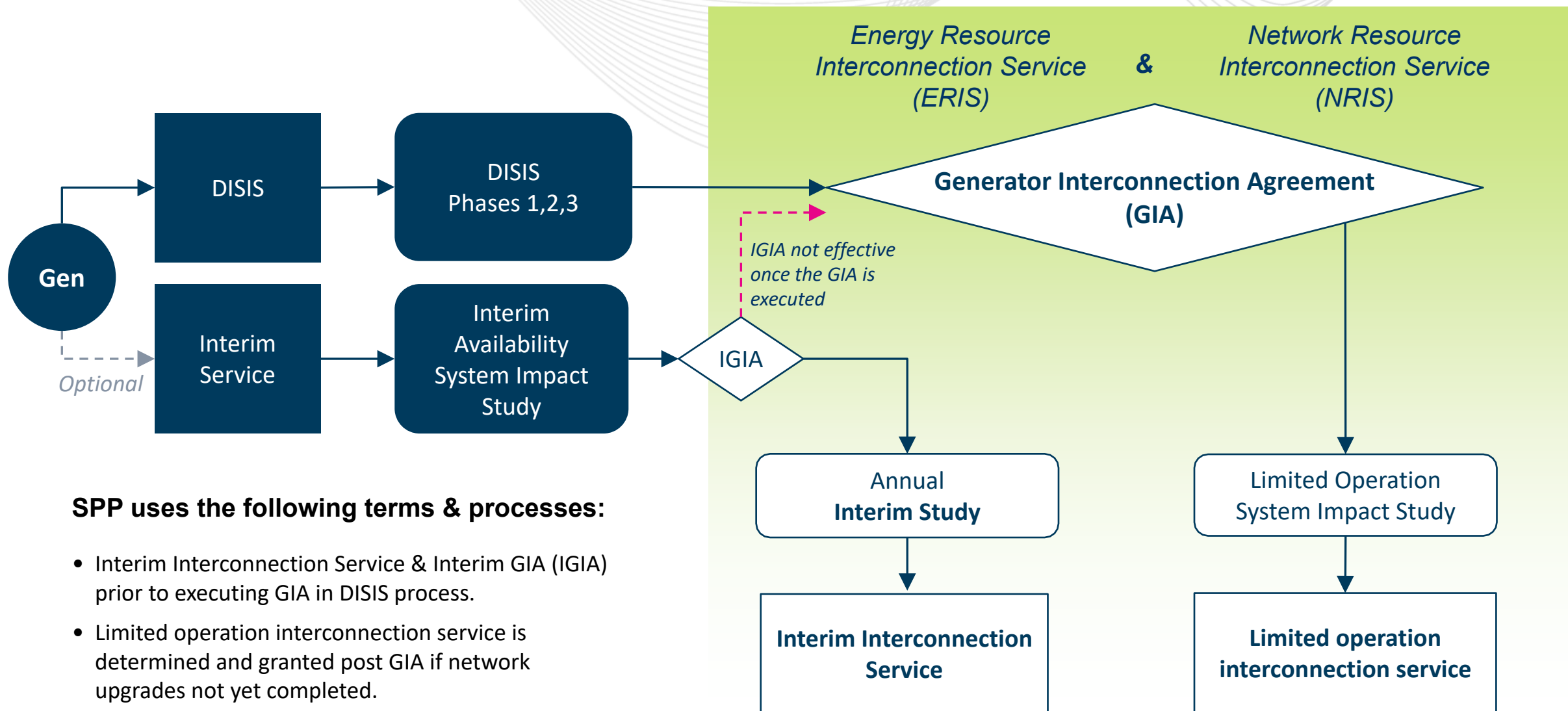
- Provisional Interconnection Service
 - Interconnection Customer (IC) may request Provisional Interconnection Service via written notice beginning upon DPP interconnection request submission and up to and through DP2
 - Or if scheduled DP1, DP2, or network upgrades Facilities Study in phase 3 becomes delayed by more than sixty (60) Calendar Days, IC can also request Provisional GIA after DP2
 - ICs requesting Provisional Interconnection Service, must submit Milestones M3 (DP2) & M4 (DP3) as study deposit. If request made prior to calculating or estimating these, each shall be initially \$8000/MW (then make whole once M3 and M4 actually determined).
 - ICs requesting Provisional Interconnection Service:
 - The DPP milestones (M2, M3, M4) become non-refundable if the interconnection request is withdrawn after DP1
 - Not eligible for any DPP milestone payment refunds provided under MISO OATT Att. X section 7.6.2.4 (Withdrawal and refund due to increase in Network Upgrade costs)

- Provisional Interconnection Study
 - Load flow, short circuit, stability analyses
 - Identify TO Interconnection Facilities and network upgrade requirements with cost estimates that are required to provide ERIS on a provisional basis based on the study results (can utilize DPP Phase 1 or 2 results if available as appropriate)
 - Study timeframe – use Reasonable Efforts within a mutually agreed upon time.
 - Provisional GIA (PGIA) will be tendered once all reliability studies completed and a Facilities Study for any TO Interconnection Facilities completed (if required)

- Provisional GIA (PGIA)
 - PGIA allows for TO construction of Interconnection Facilities and network upgrades and it may provide Provisional Interconnection Service to allow the generator to operate under limited operation (ERIS only) without network upgrades completed
 - IC agrees to install protection and plant controller to limit the output; IC agrees to assume all risks and liability due to changes in maximum allowable output limit and additional costs for Network Upgrades
 - Required system upgrades (Interconnection Facilities & network upgrades) go into PGIA and may be required for Provisional Interconnection Service
 - Annual ERIS studies determine the MW injection limit (ERIS) allowed under the PGIA
 - The MW injection limit (ERIS) may be updated quarterly as required and posted to MISO website. This is done under the Quarterly Operating limit (QOL) Study.

- Annual ERIS Study & Annual Interim Deliverability Study:
 - Determine MW injection limits in terms of both ERIS and NRIS for generators seeking to operate prior to completion of all required network upgrades and Contingent Facilities
 - Eligibility:
 - Must have a GIA or PGIA executed by April 15 of study calendar year
 - Generator must be online for the planning year being analyzed
 - Studies completed by October 31

- Annual ERIS Study (projects with PGIAs & GIAs):
 - Summer Peak & Shoulder cases: thermal & voltage, transient stability (only if DPP studies identified stability upgrades and they are not yet in place)
 - Quarterly Operating Limit (QOL) Study – only for projects which may not have received full ERIS service from the Annual ERIS Study. ICs must request QOL Study and provide study deposit of \$10K. The IC may choose not to be included in the QOL studies if they wish to be limited by the Annual ERIS Study results for all 4 quarters of that delivery year.
 - QOL Study is a N-1 thermal study
- Annual Interim Deliverability Study (projects with GIAs and seeking NRIS):
 - Determine maximum amount of conditional NRIS available
 - Thermal Deliverability study using a summer peak model



SPP uses the following terms & processes:

- Interim Interconnection Service & Interim GIA (IGIA) prior to executing GIA in DISIS process.
- Limited operation interconnection service is determined and granted post GIA if network upgrades not yet completed.

- Interim Interconnection Service – IC can apply via an Interim Availability Interconnection System Impact Study Agreement
 - Eligibility & Scope – does not require an existing DISIS interconnection request. Can request NRIS/ERIS.
 - Study deposit - subtracted from DISIS deposit, if available. If not available, study deposit same as DISIS study deposit requirements.
- Interim Availability System Impact Study (IASIS)
 - Must request before DISIS Phase 2 commencement ; expected COD must be prior to the scheduled Phase 2 completion/study results posting
 - No defined study timeline as this will vary depending on how early the study request is initiated in the DISIS process. May use DISIS Phase 2 results for the IASIS if available
 - Powerflow, short circuit, stability analyses performed considering the requested COD
 - IASIS study report posted and will indicate if any Interim Interconnection Service is available
 - TO will perform a Facilities Study for the Interconnection Facilities if any Interim Interconnection Service is available
 - Once all studies completed, a draft Interim GIA will be provided to the Interconnection Customer

- Interim GIA
 - Once a draft Interim GIA is provided, parties have 30 calendar days to negotiate. Once a final Interim GIA is tendered, Interconnection Customer has 10 calendar days to execute and provide full security for Interconnection Facilities & any network upgrades
 - Interim GIA allows for TO construction of Interconnection Facilities and network upgrades and it provides the amount of Interim Interconnection Service available
 - Article 4, section 4.2.1 – all Interconnection Facilities and network upgrades must be completed per interim GIA to begin Interim Interconnection Service
 - Article 5, section 5.1 & 5.11 – Interconnection Facilities Construction – TO shall construct the TO Interconnection Facilities and Network Upgrades or customer elects Option to Build
 - Appendix A – lists Interconnection Facilities, Network Upgrades required to be constructed; lists the Type (NRIS/ERIS) & Amount (MW) of Interim Interconnection Service available
 - Once a GIA is effective from the DISIS process, the Interim GIA will no longer be effective

- Annual Interim Study
 - An Annual Interim Study will be performed to determine whether the Interim Interconnection Service provided under the Interim GIA continues to be available. The MW amount of Interim Interconnection Service (ERIS/NRIS) can be increased or decreased under the Interim GIA and the Annual Interim Study.
 - Powerflow, short circuit, stability studies reassessed
 - Once a GIA is effective from the DISIS process, the Interim GIA will no longer be effective and no Annual Interim Study requirement

- A GIA replaces the Interim GIA (if one exists)
- Once a GIA is effective:
 - GIA outlines conditions for Limited Operation due to any network upgrades not yet completed, at the request and expense of the Interconnection Customer
 - Limited Operation is the amount of interconnection service available without network upgrades completed.
 - Initial value of Limited Operation Interconnection Service (LOIS) is provided in the DISIS report and GIA
 - Limited Operation System Impact Study (LOSIS)
 - IC may request a new LOSIS if:
 - Have effective GIA
 - One or more Network Upgrades or Contingent Upgrades not expected to be completed by COD
 - A model assumption change compared to DISIS model used to determine initial LOIS value in the GIA
 - Scope - Powerflow & stability constraints identified in the DISIS study
 - Updated Limited Operation Interconnection Service (LOIS) value will be reflected in an amended GIA

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<p><u>MISO & SPP</u></p> <ul style="list-style-type: none"> • Offer interconnection service to be requested and granted prior to GIA • This limited interconnection service is subject to limited operation • This limited interconnection service becomes superseded by the interconnection service granted in GIA 	<p><u>MISO</u></p> <ul style="list-style-type: none"> • Provisional Interconnection Service & Provisional GIA (PGIA) offered prior to executing GIA in DPP process. • PGIA grants ERIS • PGIA subject to Annual ERIS Study and Limited Operation • PGIA no longer applicable once GIA executed 	<p><u>SPP</u></p> <ul style="list-style-type: none"> • Interim Interconnection Service & Interim GIA (IGIA) offered prior to executing GIA in DISIS process. • IGIA grants ERIS and NRIS • IGIA subject to Annual Interim Study and Limitation of Output • IGIA no longer effective once GIA executed

MISO

- MISO OATT, Attachment X
 - Section 7.9 (PGIA)
 - Section 10.2 (Provisional Interconnection Study)
 - Section 11.5 (PGIA max permissible output)
 - Section 11.6 (QOL Studies)
 - Appendix 6 (GIA)
 - Section 5.9.1 (Limited Operation)
 - Section 5.9.2 (Provisional Interconnection Service)
 - Appendix H (Interconnection Requirements for Provisional GIA)
- MISO BPM-015
 - Section 6.2.9 (PGIA)
 - Section 6.6 (Annual ERIS & Annual Interim Deliverability Study)

SPP

- SPP OATT, Attachment V
 - Section 11A (Interim GIA)
 - Appendix 5 (Interim Availability Interconnection System Impact Study Agreement)
 - Appendix 6 (GIA)
 - Article 5, section 5.9 (Limited Operation)
 - Appendix 8 (Interim GIA)
 - Article 2, section 2.5 (Limitation of Output)
 - Article 4, section 4.2 (Interim Interconnection Service)
 - Article 5, section 5.1 & 5.11 (TO Construction)
 - Appendix A (Type & MW Amount of Interim Interconnection Service)
- BPM 7250 – Generator Interconnection Study Process
 - 4.4 Limited Operation
 - 7.2 Limited Operation System Impact Study
 - 7.3 Interim Availability System Impact Study
 - 7.4 Annual Interim Study

Acronym	Term
BPM	Business Practice Manual
COD	Commercial Operation Date
DISIS	Definitive Interconnection System Impact Study
DP1	Decision Point 1
DP2	Decision Point 2

[PJM Glossary](#)

Acronym	Term
DP3	Decision Point 3
DPP	Definitive Planning Phase
ERIS	Energy Resource Interconnection Service
GIA	Generation Interconnection Agreement
IASIS	Interim Availability System Impact Studies

[PJM Glossary](#)

Acronym	Term
IC	Interconnection Customer
LOIS	Limited Operation Interconnection Service
LO SIS	Limited Operation System Impact Studies
MISO	Midcontinent Independent System Operator
NRIS	Network Resource Interconnection Service

[PJM Glossary](#)

Acronym	Term
OATT	Open Access Transmission Tariff
PGIA	Provisional Generator Interconnection Agreement
QOL	Quarterly Operating Limits
SPP	Southwest Power Pool
TO	Transmission Owner

[PJM Glossary](#)

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Provisional Interconnection Service in MISO & SPP - Education

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