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| PGRR Number | [076](http://www.ercot.com/mktrules/issues/PGRR076) | PGRR Title | Improvements to Generation Resource Interconnection or Change Request (GINR) Process |
| Date of Decision | July 9, 2020 |
| Action | Recommended Approval |
| Timeline | Normal |
| Proposed Effective Date | Upon system implementation |
| Priority and Rank Assigned | Priority – 2021, Rank – 3200  |
| Planning Guide Sections Requiring Revision  | 5.1.1, Applicability5.2.1, Generation Interconnection or Change Request Application5.4.1, Security Screening Study5.4.2.1, Full Interconnection Study Process Overview5.4.4, System Protection (Short-Circuit) Analysis5.4.5, Dynamic and Transient Stability (Unit Stability, Voltage) Analysis5.4.8, FIS Study Report and Follow-up5.7.1, Generation Resource and Settlement Only Generator Data Requirements5.9, Quarterly Stability Assessment |
| Related Documents Requiring Revision/Related Revision Requests | None |
| Revision Description | This Planning Guide Revision Request (PGRR) proposes a number of small changes to the Generation Resource Interconnection or Change Request (GINR) process as discussed at various Resource Integration Workshops. The changes include the value that must be increased to meet paragraph (1)(b)(i) of Section 5.1.1; specifying that the proposed Commercial Operations Date entered in the initial GINR application must be 15 months or greater than the date of the application; redefinition of the Security Screening Study output; creation of separate reports for the Full Interconnection Study (FIS); reactive study coordination; and clarification when the dynamic data model should be submitted to meet the quarterly stability assessment prerequisite deadlines. |
| Reason for Revision |  Addresses current operational issues. Meets Strategic goals (tied to the [ERCOT Strategic Plan](http://www.ercot.com/content/wcm/lists/144926/ERCOT_Strategic_Plan_2019-2023.pdf) or directed by the ERCOT Board). Market efficiencies or enhancements Administrative Regulatory requirements Other: (explain)*(please select all that apply)* |
| Business Case | This PGRR makes a number of small changes to the GINR process as discussed at various Resource Integration Workshops. These changes are needed to improve the interconnection process, provide clarity, and improve cooperation among Interconnecting Entities (IEs), Transmission Service Providers (TSPs) and ERCOT. These changes will also align parts of the Planning Guide with ERCOT processes and with the new Resource Integration and Ongoing Operations (RIOO) interconnection services application. |
| ROS Decision | On 11/7/19, ROS voted unanimously to table PGRR076 and refer the issue to the Planning Working Group (PLWG). All Market Segments were present for the vote.On 5/11/20, ROS voted unanimously via email to recommend approval of PGRR076 as amended by the 3/2/20 ERCOT comments. All Market Segments participated in the email vote.On 6/4/20, ROS voted via roll call to endorse the 5/11/20 ROS Report as revised by the 5/28/20 KCE comments, and that the revised Impact Analysis return to ROS. There was one opposing vote from the Cooperative (STEC) Market Segment. All Market Segments were present for the vote.On 7/9/20, ROS voted unanimously via roll call to endorse and forward to TAC the 6/4/20 ROS Report and the Revised Impact Analysis for PGRR076 with a recommended priority of 2021 and rank of 3200. All Market Segments were present for the vote. |
| Summary of ROS Discussion | On 11/7/19, there was no discussion.On 5/11/20, there was no discussion.On 6/4/20, participants requested the opportunity to review the revised Impact Analysis.On 7/9/20, participants discussed the 7/7/20 ERCOT comments and the Revised Impact Analysis, and debated the impact of a shortened timeline on ERCOT resources. |

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| Market Segment | Not Applicable |

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| **Comments Received** |
| Comment Author | **Comment Summary** |
| ERCOT 010320 | Incorporated revisions discussed at the December 17, 2019 PLWG meeting |
| LCRA 010920 | Proposed minor additional modification to the timing for TSP submittal of the final FIS study to the IE |
| ERCOT 030220 | Updated based on discussions at the January 21 and February 18, 2020 PLWG meetings |
| ERCOT 052620 | Shortened the sixty day review period for reviewing reactive studies |
| KCE 052820 | Further shortened the review period for reviewing reactive studies and provided for a resubmission review prior to the quarterly stability assessment deadline |
| ERCOT 070720 | Proposed revisions to clarify that final corrections of reactive studies originally submitted 45 days prior to the quarterly stability assessment deadline must be submitted at least ten days prior to the quarterly stability assessment deadline; offered further explanation of the Revised Impact Analysis |

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| Market Rules Notes |

Please note the baseline Planning Guide language in the following sections has been updated to reflect the incorporation of the following PGRRs into the Planning Guide:

* PGRR069, Related to NPRR921, RTF-2 Elimination of the Terms All-Inclusive Generation Resource and All-Inclusive Resource (unboxed 11/1/19)
	+ Section 5.1.1
	+ Section 5.2.1
	+ Section 5.4.8
	+ Section 5.7.1
	+ Section 5.9
* PGRR075, Dynamic Model Quality Requirement (unboxed 5/1/20)
	+ Section 5.7.1

Please note that the following PGRR(s) also propose revisions to the following section(s):

* PGRR074, Related to NPRR973, Add Definitions for Generator Step-Up and Main Power Transformer
	+ Section 5.1.1
	+ Section 5.7.1
* PGRR082, Revise Section 5 and Establish Small Generation Interconnection Process
	+ Section 5.1.1
	+ Section 5.2.1
	+ Section 5.4.1
	+ Section 5.4.2.1
	+ Section 5.4.4
	+ Section 5.4.5
	+ Section 5.4.8
	+ Section 5.7.1
	+ Section 5.9

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| Proposed Guide Language Revision |

***5.1.1 Applicability***

(1) The requirements in this Section 5, Generation Resource Interconnection or Change Request, are applicable, to the following:

(a) Any Entity proposing a Generation Resource or Settlement Only Generator (SOG), including a storage device, with an aggregate power output (gross power output minus auxiliary Load directly related to the generator) of ten MW or greater, planning to interconnect to the ERCOT Transmission Grid; or

(b) Resource Entities that are seeking to modify a generator or storage device that is connected to the ERCOT Transmission Grid by:

(i) Upgrading the summer or winter Seasonal Net Max Sustainable Rating from that shown in the latest Resource Registration data by ten MW or greater within a single year;

(ii) Change the inverter, turbine, generator, or power converter associated with a facility of ten MW or greater, unless the replacement is in-kind; or

(iii) Changing or adding a Point of Interconnection (POI) to a facility of ten MW or greater.

(2) Interconnection requirements for Settlement Only Distribution Generators (SODGs) and on-site Distributed Generation (DG) that are either (a) one MW or less and not registered with ERCOT or (b) greater than one MW and registered with the PUCT as a self-generator are not subject to this Section 5 but are addressed in P.U.C. Subst. R. 25.211, Interconnection of On-Site Distributed Generation (DG), and P.U.C. Subst. R. 25.212, Technical Requirements for Interconnection and Parallel Operation of On-Site Distributed Generation.

(3) Resource Entities making changes to any Generation Resource or Settlement Only Generator (SOG) of ten MW or greater should consult ERCOT to determine applicability to the requirements of this Section 5, Generation Resource Interconnection or Change Request.

5.2.1 Generation Interconnection or Change Request Application

(1) Any Entity seeking to interconnect or modify a Generation Resource or Settlement Only Generator (SOG) meeting paragraph (1) of Section 5.1.1, Applicability, must submit the required Resource Registration data, in the format prescribed by ERCOT, available on the Market Information System (MIS) Public Area, and pay the applicable fees described in Section 5.7.2, Interconnection Study Fees.

(2) All Generation Interconnection or Change Request (GINR) applications and supporting data submissions and required fees shall be submitted to ERCOT via the applicable generation interconnection process in the online Resource Integration and Ongoing Operations (RIOO) system.

(3) The Interconnecting Entity (IE) shall provide in its GINR application all information necessary to allow for timely development, design, and implementation of any electric system improvements or enhancements required by ERCOT and the Transmission Service Provider (TSP) to reliably meet the interconnection requirements of the proposed Generation Resource or SOG. The proposed Commercial Operations Date for GINRs meeting paragraph (1)(a) of Section 5.1.1 must be at least 15 months after the date the application is submitted or it will not be accepted. If conditions allow, the Commercial Operations Date can be changed after submission.

(4) ERCOT will return the GINR to the IE within ten days using the online RIOO system if the GINR application fails to include the applicable fees or the information that is necessary to perform the initial screening interconnection studies. The IE will be notified that action is required via a RIOO system automated email.

(5) If the IE fails to respond to ERCOT’s inquiries within ten Business Days, the GINR will be deemed incomplete and returned to the IE using the online RIOO system. The IE will be notified that action is required via a RIOO system automated email.

(6) Once the application has been deemed materially complete, ERCOT will notify the IE of receipt of the completed application using a RIOO system automated email within ten Business Days. The IE should note that this acknowledgement is not a reservation of transmission capacity, either planned or unplanned.

(7) An ERCOT designated point of contact will be assigned to oversee the interconnection study process and answer questions concerning the interconnection process. Once assigned, the ERCOT designated point of contact will contact the IE and will be the primary ERCOT contact for the IE until the IE registers pursuant to paragraph (1) of Protocol Section 16.5, Registration of a Resource Entity. At that time a Client Services Representative will be assigned and will be the designated point of contact. If during the course of the studies, additional information is needed by ERCOT from the IE, ERCOT will return the GINR to the IE and the IE will have ten Business Days to answer the request for additional information by submitting a change request via the online RIOO system without impacting the study timeline. The IE will be notified that action is required via a RIOO system automated email.

(8) Prior to the initial contact from the ERCOT designated point of contact, IEs should direct questions concerning the generation interconnection or change process to ResourceIntegrationDepartment@ercot.com. All email communication sent to ResourceIntegrationDepartment@ercot.com shall include the associated project identification number (INR number) in the subject field. If the communication is not specific to a project, the email subject field shall have the words “Generation Interconnection or Change Request.”

(9) If proposed Generation Resources or SOGs that would use the same physical transmission interconnection are to be built in stages with in-service dates more than one year apart, each stage should be treated as a separate interconnection request but may be included in the same study.

5.4.1 Security Screening Study

(1) For each Generation Interconnection or Change Request (GINR), ERCOT will conduct a steady-state Security Screening Study, including power-flow and transfer studies, based on the expected in-service year to identify potential generation dispatch limitations based on the site proposed by the Interconnecting Entity (IE).

(a) The Security Screening Study is a high level review of the project and generally includes a number of initial assumptions from both ERCOT and the IE. In accordance with P.U.C. Subst. R. 25.198, Initiating Transmission Service, ERCOT will establish the scope of the Security Screening Study that will include a determination of the need for a more in-depth Subsynchronous Resonance (SSR) study. The SSR vulnerability of all Generation Resources applicable under Section 5, Generation Resource Interconnection or Change Request, will be assessed pursuant to Protocol Section 3.22.1.2, Generation Resource Interconnection Assessment.

(b) At its sole discretion, ERCOT may waive the requirement for a Security Screening Study for a GINR.

(2) The results of the Security Screening Study will provide an indication of the level at which the proposed Generation Resource can expect to operate simultaneously with other known Generation Resources in the area before significant transmission additions or enhancements may be required. During the course of the Security Screening Study, ERCOT may consult with the affected Transmission Service Provider(s) (TSP(s)), if needed, to identify the most efficient means of providing transmission service.

(3) During the Security Screening Study phase of the GINR process, and in accordance with the Protocols, all data, documents, and other information required by ERCOT from an IE related to a request for GINR are considered Protected Information pursuant to Protocol Section 1.3.1.1, Items Considered Protected Information, to the extent that such information is not otherwise publicly available. Accordingly, ERCOT shall not publicly release any of the protected data, documents, or other information during the Security Screening Study phase except to TSPs. Information about GINRs in the Security Screening Study phase will only be released publicly in aggregated amounts.

(4) Upon completion of the Security Screening Study, ERCOT will present the IE with a preliminary report that will inform the IE about the suitability of the proposed Point of Interconnection (POI) for the proposed MW amount. This report does not imply any commitment by ERCOT or any TSP to recommend or construct transmission additions or enhancements. The report will also contain a description of the SSR assessment performed as part of the Security Screening Study and any conclusions resulting from the SSR assessment.

(5) Within 180 days of the date ERCOT notifies the IE of the Security Screening Study results, the IE must notify ERCOT, via the online Resource Integration and Ongoing Operations (RIOO) system, of its desire to pursue a Full Interconnection Study (FIS), otherwise ERCOT shall consider the GINR withdrawn by the IE. ERCOT will begin initiation and coordination of the FIS only after receiving this Notification from the IE. TSPs will receive a RIOO system automated email when ERCOT determines the FIS application is complete.

(6) After the expiration of the 180-day period, an IE must submit a new GINR for a Security Screening Study and must again pay the appropriate fee. The IE will also be required to submit any updates or changes in the project’s data to ERCOT.

5.4.2.1 Full Interconnection Study Process Overview

(1) Within ten Business Days of receiving notice to proceed with an FIS, proof of site control, if required, and the correct fee(s) from the IE, ERCOT will designate a TSP to lead the FIS and will contact that TSP to schedule an FIS scope meeting. ERCOT will select the lead TSP based upon a preliminary analysis of the most likely POI. If an IE has previously developed a generation project in ERCOT with the selected TSP, the IE, ERCOT, and the TSP may agree to forgo the scope meeting. If they so agree, the timeline for the IE and TSP to reach agreement on the FIS scope will start on the date ERCOT notifies the TSP of the IE’s decision to proceed with the FIS.

(2) Notification of the FIS to all other TSP(s) will be provided via the online RIOO system. It is the responsibility of each TSP to determine if the proposed project would have a material impact on its Transmission Facilities and to decide whether and to what extent it should participate in the FIS.

(3) Each TSP desiring to participate in the FIS shall promptly notify the lead TSP via email to the lead TSP. The lead TSP must include all interested TSPs in the FIS to the extent such involvement is reasonable.

(4) At the FIS scope meeting, the IE will present the proposed GINR and ERCOT will review the results of the Security Screening Study. The lead TSP will facilitate a general discussion of the preliminary study scope of work for the FIS.

(5) Pursuant to Protocol Section 3.22.1.2, Generation Resource Interconnection Assessment, in the event that the Security Screening Study performed by ERCOT identifies a possible SSR risk, ERCOT or the affected TSP(s) may require additional SSR studies be performed and may require an IE to provide additional detailed modeling data on the proposed Generation Resource in support of these studies. The SSR studies shall be scoped at the same time as the FIS but do not need to be included as part of the FIS.

(6) The IE and the TSP(s) must reach agreement on the FIS scope and sign the FIS study agreement within 60 days of the FIS kickoff meeting. The assistance of more than one TSP may be required in areas where Transmission Facilities are provided by multiple TSPs. In these cases it may be necessary for the IE to execute study agreements with multiple TSPs.

(7) The FIS scope agreement must include all assumptions, timetables, study cost estimates and payment schedules, and the determination of all requirements for interconnection.

(a) The FIS must include all studies required by this section. The IE and the TSP(s) shall consider the Security Screening Study and other preliminary studies and documents provided by the IE when developing the FIS scope. The IE and TSP(s) may divide the FIS into distinct study phases, each requiring IE approval to proceed.

(b) The requirement for one or more FIS studies may be waived for GINRs meeting paragraph (1)(b)(ii) of Section 5.1.1, Applicability, if mutually agreed upon by ERCOT and the TSP(s). In order to aid in the determination of whether or not FIS study waivers are appropriate, ERCOT and the TSP(s) may request additional data and information from the IE beyond what is required by Section 5.3.1, Full Interconnection Study Submission Requirements, and Section 5.7.1, Generation Resource and Settlement Only Generator Data Requirements.

(8) The TSP(s) shall submit the FIS scope document via the online RIOO system. The online RIOO system will provide notification via an automated email to ERCOT and other TSP(s) of availability of the FIS scope document for review and comment. Comments must be made within ten Business Days.

(9) If the IE and TSP(s) cannot agree to the FIS study scope within the 60-day period, ERCOT will attempt to mediate an agreement. If mediation is unsuccessful, ERCOT will consider whether the IE’s GINR should be terminated. If the request is terminated, the IE will be required to file a new GINR and pay all appropriate fee(s) for any new generation project.

5.4.4 System Protection (Short-Circuit) Analysis

(1) The FIS scope agreement will specify locations where available short-circuit fault duty will be identified, calculated, and documented.

(2) If any of the required transmission system facilities identified in the FIS facility study associated with the GINR result in violations of the TSP’s short circuit criteria, the TSP shall plan and provide facilities to address such violations. The TSP will determine the maximum available fault currents at the interconnection substation for determining switching device interrupting capabilities and protective relay settings.

5.4.5 Dynamic and Transient Stability (Unit Stability, Voltage) Analysis

(1) At the discretion of the TSP(s) or ERCOT, the lead TSP(s) will perform transient stability studies if necessary to meet NERC Reliability Standards, Protocols, this Planning Guide or the Operating Guides applicable to the Generation Resource or the ERCOT System. If the lead TSP(s) conducting a stability study decides such study is not required, the lead TSP(s) shall provide a written justification in lieu of the study report.

(2) When performing such studies, all operational and planned Generation Resources which have met the requirements of Section 6.9, Addition of Proposed Generation to the Planning Models, in the area of the study shall be dispatched at full net output in at least one of the scenarios/cases evaluated by the lead TSP. The dispatch level may be reduced to respect any published stability limits or to reach a power flow solution. If any Generation Resources in the study area are not dispatched at full output, the study report shall include the technical rationale. Any resulting increase in generation will be balanced as addressed in the FIS scope agreement.

(3) Stability study base cases shall be formed from the latest available approved SSWG base cases consistent with the most recently approved Dynamics Working Group (DWG) stability data base. The initial transmission configuration in the area of study included in a stability study base case shall be identical to that used in the steady-state studies of the same period. Any previously identified transmission improvements that will not be in service prior to the Initial Synchronization of the proposed Generation Resource shall not be included in the stability study base case.

(4) Transient stability studies will analyze the performance of the proposed Generation Resource and the ERCOT System in terms of angular stability, voltage stability and excessive frequency excursions. Additional studies may include small signal stability or critical clearing time analyses where the number of cycles for which a transmission line can sustain a fault without causing loss of synchronism of any of the Resource is compared to the response of the protection systems. Such studies should incorporate reasonable and conservative assumptions regarding plant operating conditions. Proposed analyses shall be identified and defined in the FIS scope agreement.

(5) All stability studies shall be performed in accordance with NERC Reliability Standards, Protocols, this Planning Guide and the Operating Guides. The stability study portion of the FIS shall document any instability identified through performance of the study.

(6) If the TSP identifies instability (other than instability identified for extreme events) in the stability portion of the FIS, the following steps will be taken subsequent to the FIS being deemed complete and posted in the Market Information System (MIS) Secure Area in accordance with Section 5.4.8, FIS Study Report and Follow-up:

(a) The IE and TSP shall investigate alternative solutions to resolve the instability through changes to the proposed Generation Resource and report their findings to ERCOT. If changes to the Generation Resource are determined by ERCOT to be feasible, the IE shall implement the changes prior to Initial Synchronization.

(b) If ERCOT determines that changes to the proposed Generation Resource are not feasible to resolve the identified instability, ERCOT shall notify the TSP and IE, and the TSP shall investigate a transmission improvement to resolve the instability and report their findings to ERCOT.

(c) If ERCOT determines that a proposed transmission improvement is feasible to resolve the identified instability, the TSP shall proceed with implementing the transmission improvement, in accordance with Protocol Section 3.11.4, Regional Planning Group Project Review Process, identified in paragraph (6)(b) above after the requirements of Section 6.9 have been met for the proposed Generating Resource.

(d) If the transmission improvement identified in paragraph (6)(b) or (c) above cannot be implemented prior to Initial Synchronization, ERCOT shall determine the appropriate operating limit, including evaluating the feasibility of a proposed Remedial Action Scheme (RAS) that may mitigate the limit, in accordance with Section 5.9, Quarterly Stability Assessment, prior to Initial Synchronization.

5.4.8 FIS Study Report and Follow-up

(1) The TSP(s) will submit to ERCOT and to the other TSP(s) via the online RIOO system a preliminary report of findings and recommendations for each of the FIS study elements

(2) Any questions, comments, proposed revisions, or clarifications by any party shall be made in writing to the TSP(s) within ten Business Days after the issuance of each study report, which may cover one or more study elements. ERCOT can extend this review period by an additional 20 Business Days and an email will be sent to notify the affected TSP(s) and the IE that it needs additional time to review the report.

(3) After considering the information received from ERCOT and other TSPs, the study element(s) report will be deemed complete and a final report shall be provided, via the online RIOO system, to ERCOT and all TSPs. The TSP(s) conducting the FIS shall submit via the online RIOO system, the sub-synchronous oscillation analysis, if required, as a separate document from the remainder of the report. The ten Business Day review period will be used by ERCOT to determine if any transmission upgrades proposed and clearly identified in the Steady-State Study Report need to be submitted to the RPG review process. Protocol Section 3.11, Transmission Planning, provides more information on the process to review transmission upgrades that are unrelated to the direct connection of new or modified generation.

(4) The final study element(s) report will be available via the online RIOO system after the report has been deemed complete and marked “final”. The final reports will be posted to the MIS Secure Area within ten Business Days. Separate reports should be created by TSPs for either each FIS study element or, at a minimum, the stability report so that the final FIS study element reports can be posted to the MIS Secure Area. Coincident with posting of the final FIS study element reports to the MIS Secure Area, ERCOT will notify the TSP and the IE when each study element report is posted. The TSP shall provide a copy of each final report to the IE upon request.

(5) The study element(s) report shall not contain sensitive information including, but not limited to, confidential plant design information including stability study model data and parameters and contingencies causing instability. The TSP(s) shall provide this information to ERCOT and other TSP(s) upon request.

(6) The TSP issuing the final FIS element(s) report shall indicate that the report is the final report required by the FIS. At the end of the ten Business Day review period following the issuance of the final FIS element(s) report, the FIS will be deemed complete and the IE and TSP may execute an SGIA. If an economic study of the direct interconnection facilities is required, pursuant to Section 5.4.7, Economic Study, and has not yet been completed, the IE and TSP may agree that the completion of the economic study is not required before the FIS is deemed complete.

(7) Should the IE wish to proceed with the proposed GINR, the IE must execute an SGIA with the respective TSP within 180 days following the completion of the FIS (includes all major study element(s) reports). Failure to do so may result in a GINR cancellation as described in Section 5.7.7, Cancellation of a Project Due to Failure to Comply with Requirements.

(8) If during the time after the FIS is completed and before Initial Synchronization, changes occur that substantially differ from the assumptions used for the FIS, ERCOT and the TSP(s) shall determine the impact of the changes on the results of the FIS and, if applicable, SSR studies. All IE changes shall be submitted to ERCOT through the applicable process for a change comparison. If the changes are determined by ERCOT and lead TSP(s) to have the potential to materially alter the conclusions documented in the FIS, the lead TSP(s) will make appropriate modifications to one or more FIS study elements. The updated FIS reports will be submitted via the online RIOO system. Any questions, comments, proposed revisions, or clarifications by any party shall be made in writing to the TSP(s) within ten Business Days after the issuance of an updated study report. Initial Synchronization of the Generation Resource or SOG may be delayed pending completion of these modifications to the FIS.

5.7.1 Generation Resource and Settlement Only Generator Data Requirements

(1) The Interconnecting Entity (IE) shall submit with its Generation Interconnection or Change Request (GINR) the most current actual facility information (generation, substation, and transmission/subtransmission if applicable) or best available expected performance data for the physical and electrical characteristics of all proposed facilities (in sufficient detail to provide a basis for modeling) up to the Point of Interconnection (POI) with a Transmission Service Provider (TSP).

(2) Failure to supply the required data may delay ERCOT processing of the interconnection application and studies and result in a GINR cancellation as described in Section 5.7.7, Cancellation of a Project Due to Failure to Comply with Requirements. Recommendations resulting from these studies that are based on outdated, false, or bad data may adversely affect the safety and reliability of the ERCOT System and can result in damage to generation or transmission equipment. The IE and subsequently, the Resource Entity associated with any approved Generation Resource or Settlement Only Generator (SOG), must promptly submit any updates to ERCOT to ensure the long-term adequacy, reliability, and safety of the ERCOT System, as required by the Protocols, this Planning Guide, the Operating Guides, and North American Electric Reliability Corporation (NERC) Reliability Standards. Failure to comply may result in financial penalties.

(3) In an effort to produce the best available Security Screening Study and Full Interconnection Study (FIS), ERCOT suggests that IEs begin collecting all appropriate engineering and equipment data from manufacturers as soon as the IE selects its major equipment for the proposed project.

(4) While the duty to update data may require additional information, at a minimum, the IE shall submit the following data via the online Resource Integration and Ongoing Operations (RIOO) system at each step of the process:

(a) Application and Security Screening Study:

(i) Generation Entity Information Sheet; and

(ii) Generation Interconnection Screening Study Request Data.

(b) FIS:

(i) Updates to the above information (if necessary);

(ii) Applicable data required for interconnection studies as defined in the Resource Registration Glossary applicable to the resource type; and

(iii) The appropriate dynamic model for the proposed Generation Resource or SOG and results of model quality tests and associated simulation files as described in paragraph (5)(b) of Section 6.2, Dynamics Model Development, are subject to performance and usability verification by the lead TSP with approval from ERCOT through the FIS process. Dynamic model data shall be provided utilizing the appropriate dynamic model template to enable the TSP(s) and ERCOT to perform stability (transient and voltage) analyses. Paragraph (5) of Section 6.2 and the Dynamics Working Group Procedure Manual contain more detail and IE dynamics data requirements. Data submitted for transient stability models shall be compatible with ERCOT standard models (Siemens/PTI PSS/E and Powertech Labs Inc. TSAT, VSAT and SSAT). If no compatible model exists, the IE shall work with a consultant or software vendor to develop and supply accurate/appropriate models along with other associated data. These models shall be incorporated into the standard model libraries of both software packages. It is recommended that generation owners and developers encourage manufacturers and software vendors to work together to develop and maintain these important models.

(iv) The IE and the TSP shall coordinate with one another for the IE to complete the reactive study and for the TSP to have the needed data to start the FIS stability study.

(A) The TSP shall send the preliminary short circuit current for the proposed POI based on the most recent System Protection Working Group (SPWG) base case to the IE within ten Business Days of signing the FIS study agreement.

(B) The IE shall complete a preliminary reactive study to determine the reactive devices that will be needed to meet ERCOT requirements. Once determined, the IE shall add the reactive devices, if any, to the Resource Registration data and make the updated data available to ERCOT and the TSP via the online RIOO system.

(C) The TSP shall start the FIS Stability Study after all the required data is available via the online RIOO system.

(v) Once the TSP has completed the FIS Short Circuit Study and it is approved by ERCOT and posted to the Market Information System (MIS) Secure Area, the IE shall complete and submit the final reactive study via the online RIOO system.

(vi) For GINR projects attempting to meet the next quarterly stability assessment deadline, pursuant to Section 5.9, Quarterly Stability Assessment, ERCOT shall approve or comment on the final reactive study according to the following timeline:

(A) Within 15 days if submitted at least 45 days before the quarterly stability assessment deadline. Resubmissions submitted 30 days or more before the quarterly stability assessment deadline will be reviewed and returned within ten days;

(B) On the day of the quarterly stability assessment deadline if submitted 30 to 45 days prior to the quarterly stability assessment deadline; or

(C) Without guarantee that it will be reviewed prior to the quarterly stability assessment deadline if submitted less than 30 days prior to the quarterly stability assessment deadline.

(c) Prior to start of construction:

(i) Any significant design changes in the generator(s) or main power transformer(s) of the proposed Generation Resource or SOG shall be provided to ERCOT and the TSP to ensure compatibility with the existing transmission system.

(d) Prior to the Resource Commissioning Date:

(i) Registration and official Resource Registration data submittal pursuant to Section 6.8.2, Resource Registration Process;

(ii) Updates to Resource Registration data based on “as-built” or “as-tested” data in all cases; and

(iii) Proof of meeting ERCOT requirements (reactive, Voltage Ride-Through (VRT), dynamic models, Power System Stabilizer (PSS), Subsynchronous Resonance (SSR) models).

 (e) During continuing operations:

(i) The IE shall provide ERCOT and the TSP with any equipment data changes which result from equipment replacement, repair, or adjustment. Unless otherwise required in the Protocols, this Planning Guide or the Operating Guides, the IE shall provide such data to ERCOT and the TSP no later than 60 days prior to the date of the actual change in equipment characteristics or during annual data update filings whichever occurs first. This requirement shall also apply to all future owners throughout the service life of the project/plant.

**5.9 Quarterly Stability Assessment**

(1) ERCOT shall conduct a stability assessment every three months to assess the impact of planned Generation Resources and Settlement Only Generators (SOGs) connecting to the ERCOT Transmission Grid. The assessment shall derive the conditions to be studied with consideration given to the results of the Full Interconnection Study (FIS) stability studies for Generation Resources or SOGs, with planned Initial Synchronization in the period under study. ERCOT may study conditions other than those identified in the FIS stability studies.

(2) Generation Resources or SOGs that are not included in the assessment as described in this Section as result of the Interconnecting Entity (IE) failing to meet the prerequisites by the deadlines as listed in the table below will not be eligible for Initial Synchronization during that three month period. The timeline for the quarterly stability assessment shall be in accordance with the following table:

|  |  |  |
| --- | --- | --- |
| **Generation Resource or SOG Initial Synchronization Date** | **Last Day for an IE to meet prerequisites as listed in paragraph (4) below** | **Completion of Quarterly Stability Assessment** |
| Upcoming January, February, March | Prior August 1 | End of October |
| Upcoming April, May, June | Prior November 1 | End of January |
| Upcoming July, August, September | Prior February 1 | End of April |
| Upcoming October, November, December | Prior May 1 | End of July |

(3) If the last day for an IE to meet prerequisites or if completion of the quarterly stability assessment as shown in the above table falls on a weekend or holiday, the deadline will extend to the next Business Day.

(4) Prerequisites to be satisfied prior to the planned new Generation Resource or SOG being included in the quarterly stability assessment:

(a) The Generation Resource or SOG has met the requirements of Section 6.9, Addition of Proposed Generation to the Planning Models.

(b) The IE has provided all Generation Resource or SOG data in accordance with the Resource Registration Glossary, Planning Model column, including but not limited to steady state, system protection and stability models.

(i) The dynamic data model will be reviewed by ERCOT prior to the quarterly stability assessment and should be submitted by the IE 30 days before the quarterly stability assessment deadline. If this review cannot be completed prior to the quarterly stability assessment deadline, ERCOT may refuse to allow Initial Synchronization of the Generation Resource or SOG in the three month period associated with the quarterly stability assessment deadline. ERCOT shall include the Generation Resource or SOG in the next quarterly stability assessment period provided that the review of the dynamic data model has been completed prior to the next quarterly stability assessment’s deadline.

(c) The following elements must be complete:

(i) FIS studies;

(ii) Reactive Power Study; and

(iii) System improvements or mitigation plans that were identified in these studies as required to meet the operational standards established in the Protocols, Planning Guide, Nodal Operating Guides, and Other Binding Documents prior to synchronizing the Generation Resource or SOG.

(d) The data used in the studies identified in paragraph (4)(c) above is consistent with Generation Resource or SOG data submitted by the IE as required by Section 6.9.

(5) At any time following the inclusion of a Generation Resource or SOG in a stability assessment, but before the Initial Synchronization of the Generation Resource or SOG, if ERCOT determines, in its sole discretion, that the Generation Resource or SOG no longer meets the prerequisites described in paragraph (4), or that an IE has made a change to the design of the Generation Resource or SOG that could have a material impact on ERCOT System stability, then ERCOT may refuse to allow Initial Synchronization of the Generation Resource or SOG, provided that ERCOT shall include the Generation Resource or SOG in the next quarterly stability assessment period that commences after identification of the material change or after the Generation Resource or SOG meets the prerequisites specified in paragraph (4), as applicable. If ERCOT determines, in its sole discretion, that the change to the design of the Generation Resource or SOG would not have a material impact on ERCOT System stability, then ERCOT may not refuse to allow Initial Synchronization of the Generation Resource or SOG due to this change.

(6) ERCOT shall post to the Market Information System (MIS) Secure Area a report summarizing the results of the quarterly stability assessment within ten Business Days of completion.