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| PGRR Number | 042 | PGRR Title | Regional Transmission Plan Model Reserve Requirement and Load-Generation Imbalance Methodology |

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| Date | March 19, 2015 |

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| Comments |

LCRA supports efforts to increase transparency and refine processes used to develop the ERCOT Regional Transmission Plan. After reviewing proposed PGRR-042 and comments submitted by several market participants, LCRA respectfully submits the following comments:

1. The guidelines for development of the Regional Transmission Plan must allow enough flexibility to meet the requirements of the NERC TPL-001-4 Reliability Standard. The ability to assess the range of load and system conditions required by Requirement 2.1 of NERC TPL-001-4 must be maintained. As stated in R2.1.4, sensitivity analysis “must vary one or more of the following conditions by a sufficient amount to stress the System within a range of credible conditions that demonstrate a measurable change in System response:” The listed conditions include load, expected transfers, generation additions, retirements, dispatch scenarios, and controllable loads and Demand Side Management. The extent to which any or all of these variations can be applied to establish a range of credible conditions depends upon the existing market rules or known market rule changes that are in effect at the time a study is performed. The range of conditions that must be studied precludes the adoption of a singular load forecast or specific percentage limits on the range of load forecasts by the ERCOT Nodal Protocols, ERCOT Operating Guides or ERCOT Planning Guides and must leave these items to the discretion of ERCOT in consultation with market participants.
2. LCRA supports the revisions suggested by ERCOT subject to the following comments:
   1. Include references to the language from Protocols, Guides, or Procedures instead of re-stating the language.
   2. Clarify that the reserve (capacity minus load) in a planning study should be greater than or equal to the amount of capacity provided by the two largest units in ERCOT. A unit may be considered an entire plant if the entire plant is removed from service by a single-element contingency.
   3. The economic study should be performed after the N-1 solutions are identified.
3. Modeling of the Estimated Forced Outage Rate (EFOR) should continue to be limited to the economic assessment portion of the Regional Transmission Plan. The reliability assessment portion of the Regional Transmission Plan already includes G-1 plus N-1 contingency analysis as required by the ERCOT Planning Guide and NERC TPL-001-4 which is an effective means to evaluate the impact of the forced outage of generating facilities within ERCOT.
4. Applying a targeted planning reserve margin should not be a requirement of the Regional Transmission Plan because it is not a generation adequacy study.
5. When Regional Transmission Plan steady state assessments rely on cases that split ERCOT into study regions, ERCOT should report the transfers into, out of, or through the study region are impacting the need for system upgrades. A method for minimizing the impact of transfers is to construct cases for each year studied using the following combinations of weather zones as the study area in each case:
   1. North, North Central, West and Far West
   2. North, North Central, East
   3. South Central, East, and North Central
   4. Coast, South Central, South
   5. South, South Central and West
   6. Other combinations as needed to evaluate a specific constraint or project recommendation.
6. LCRA does not support the application of the extraordinary dispatch procedures contained in the SSWG Procedural Manual when a study case does not have sufficient generation in excess of load. The extraordinary dispatch procedures are required and appropriate in the SSWG cases because of the nature of the loads applied to the SSWG models. The loads are applied in the SSWG cases by TSPs for a variety of reasons including the need for TSPs to study peak loading conditions for their systems. Since these system are not completely coincident with the Weather Zones developed by ERCOT and peak loads for each system is not coincident with an ERCOT system peak, the result is a total load in the SSWG cases that is significantly higher than what would be expected for an ERCOT-wide system peak. Thus, the loads contained in the SSWG cases create the need to apply the extraordinary dispatch measures outlined in the SSWG Procedure Manual. Application of these procedures result in a case that TSPs know requires adjustment prior to performing analysis. These adjustments include removing the extraordinary dispatch measures used within the area of study and applying load or generation scaling outside of the area of study while taking care to determine the appropriateness of adjustments with the potential to impact the outcome of the analysis. A similar approach to case adjustments should be applied to the Regional Transmission Plan cases. LCRA suggests that the following order of adjustments are appropriate when needed to ensure the proper amount of reserves in Regional Transmission Plan study cases:
   1. Begin with the SSWG published study cases.
   2. Remove all projects that need RPG review and have not received an ERCOT endorsement.
   3. All mothballed generation set to off-line within the study region.
   4. Add all generation that has met the Planning Guide criteria for inclusion in the study.
   5. Apply estimated loads appropriate for the study area, season, and year being studied.
   6. Adjust load outside of the study region to adjust the load/generation balance. Monitor transfers into, out of, or through the study region. Report when transfers are higher than historical operating levels.
   7. Identify and report reliability criteria violations and test for sensitivity to transfers into, out of or through the study region.
   8. In the event a reliability criteria violation is sensitive to such transfers, review pending Generation Interconnect Requests (GINR) to determine if any pending request (not included in the study case) resolves the criteria violation. Report the GINR in the Regional Transmission Plan as an alternative to the transmission project needed to relieve the criteria violation.

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| Revised Cover Page Language |

None at this time.

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| Proposed Guide Language Revision |

**3.1.4.1 Development of Regional Transmission Plan**

(1) The starting base cases for the Regional Transmission Plan development are created by removing all Tier 1, 2 and 3 projects that have not undergone RPG Project Review from the most recent SSWG summer peak base cases to address the planning horizon. The planning process begins with computer modeling studies of the generation and Transmission Facilities and substation Loads under normal conditions in the ERCOT System. Contingency conditions along with changes in Load and generation that might be expected to occur in operation of the ERCOT Transmission Grid are also modeled. To maintain adequate service and minimize interruptions during Outages, model simulations are used to identify adverse results based upon the planning criteria and to examine the effectiveness of various problem-solving alternatives.

(2) The effectiveness of each alternative will be evaluated under a variety of possible operating environments because Loads and operating conditions cannot be predicted with certainty. As a result, repeated simulations under different conditions are often required. In addition, options considered for future installation may affect other alternatives so that several different combinations must be evaluated, thereby multiplying the number of simulations required.

(3) Once feasible alternatives have been identified, the process is continued with a comparison of those alternatives. To determine the most favorable, the short-range and long-range benefits of each must be considered including operating flexibility and compatibility with future plans.

(4) The total generation capacity in a Regional Transmission Plan base case before contingency outages will be greater than or equal to the peak Load in the case plus losses plus a reserve equal to the two largest units in the case. A unit may be considered an entire plant if the entire plant is removed from service by a single contingency.

(5) If the total generation capacity in a Regional Transmission Plan base case is not sufficient to satisfy the requirement in paragraph (4) above, ERCOT shall group one or more weather zones into a study region and create a separate base case for each study region for the season and year being studied.

(a) ERCOT shall set Load and generation inside the study region consistent with the study assumptions for the Regional Transmission Plan. ERCOT shall set all mothballed generation within the study region to out of service within the study region. ERCOT shall add all generation that has met the criteria for inclusion according to Section 6.9 of the Planning Guides. ERCOT will not change Load or add generation capacity not meeting the Section 6.9 criteria inside the study region to satisfy the requirement in paragraph (4) above. ERCOT may redispatch dispatchable generation inside the study region as necessary. ERCOT may report the impact of returning mothballed generation to service or adding a generator with an active GINR but not meeting Section 6.9 criteria when considered viable alternatives to a transmission circuit upgrades or additions.

(b) ERCOT may use the following procedures in the order listed to satisfy the requirement in paragraph (4) above.

(i) ERCOT may increase the dispatch level of each Wind-powered Generation Resource (WGR) and solar Resource outside the study region to a level that does not exceed the capacity as calculated by Section 3.2.6.2.2, Total Capacity Estimate of the Nodal Protocols.

(ii) Load outside the study region may be reduced to a level sufficient to meet the requirement in paragraph (4) irrespective of historical peak Load coincidence factors among weather zones.

(c) When one or more weather zones are combined to create a separate base case for each study region, ERCOT shall use one or more of the following combinations:

1. North, North Central, West and Far West
2. North, North Central, East
3. South Central, East, and North Central
4. Coast, South Central, South
5. South, South Central and West
6. A combination of zones that may be unique to the evaluation of an identified constraint or project proposal.