FAC-013-2 — Planning Transfer Capability White Paper

Through FERC Orders 693 (paragraphs 782 and 794) and 729 (paragraphs 278, 279, 289, 290 and 291), FERC directed NERC to establish a standard requiring Planning Coordinators to calculate transfer capability in the planning horizon and communicate the results. In the FERC Order approving the MOD standards related to Available Transfer Capability (ATC)/Available Flowgate Capability (AFC) calculations (MOD-001-1 — Available Transmission System Capability, MOD-028-1— Area Interchange Methodology , MOD-029-1 — Rated System Path Methodology, and MOD-030-2 — Flowgate Methodology), FERC did not approve NERC's request to withdraw FAC-012-1 — Transfer Capability Methodology, nor did they approve the retirement of FAC-013-1 — Establish and Communicate Transfer Capabilities. With respect to these two Reliability Standards, the Commission disagreed with NERC that they are wholly superseded by the MOD Reliability Standards.

- The Commission noted that, under FAC-012-1, Reliability Coordinators and Planning Authorities would be required to document the methodology used to establish inter-regional and intra-regional transfer capabilities and to state whether the methodology is applicable to the planning horizon or the operating horizon.

- The Commission also noted that, under FAC-013-1, Reliability Coordinators and Planning Authorities are required to establish a set of inter-regional and intra-regional transfer capabilities that are consistent with the methodology documented under FAC-012-1, which could require the calculation of transfer capabilities for both the planning horizon and the operating horizon.

- The Commission posited that these FAC Reliability Standards were necessary because the proposed MOD Reliability Standards provide only for the calculation of available transfer capability and its components, including total transfer capability, in the operating horizon. Thus, the Commission stated, the proposed MOD Reliability Standards do not govern the calculation of transfer capabilities in the planning horizon, i.e., beyond 13 months in the future.

- The Commission also noted, that the calculation of transfer capabilities in the planning horizon (years one through five) may not be so accurate to support long-term scheduling of the transmission system but that such forecasts will be useful for long-term planning, in general, by measuring sufficient long-term capacity needed to ensure the reliable operation of the bulk power system.

- The Commission stated that the responsibility for calculation of transfer capabilities in the planning horizon would be appropriately assigned to the Planning Coordinator and not the Reliability Coordinator.

Consistent with the above philosophy and to address FERC's concerns, FAC-013-2 is only applicable to the Planning Coordinator. Further, FAC-013-2 requires that a Planning Transfer Capability Methodology Document (PTCMD) be developed for the calculation of Planning

Transfer Capabilities (PTC) beyond 13 months in the future to provide additional information for the Planning Coordinator to use in planning for BES reliability. This information is not intended in any way to be associated with the granting or denial of transmission service.

The PTC definition is introduced to clarify that the calculations performed in accordance with FAC-013-2 (beyond 13 months) are not directly related to calculations of TTC and ATC. The standalone definition of PTC will ensure that communications involving calculation of PTCs for reliability purposes are clear and cannot be confused with issues related to other forms of transfer capability having different purposes.

PTC calculations are not intended to supersede nor replace calculations done to meet FAC-010 and FAC-014 requirements related to calculation of System Operating Limits (SOL). SOL calculations are done based on the specific requirements of FAC-010 and FAC-014, whereas the Planning Coordinator determines the methodology for PTC calculation based on its system needs and within the framework provided by FAC-013-2.

The criteria used in planning the system, and the appropriate analyses to assess system plans are detailed in the TPL series of standards. The TPL planning standards do not specify the need to document transfer capability calculation methods that may be used in the planning horizon. To cover that aspect of planning for BES reliability, the FAC-013-2 standard specifies that Planning Coordinators must perform PTC calculations as part of the planning process, that the method must be documented and shared with other entities as specified in the standard. Additionally, the standard is not intended to supersede nor replace transfer tests performed as part of specific planning processes internal to a Balancing Authority, such as generation or load deliverability tests which are not specifically addressed by this standard.

Requirement R1, Part 1.2 requires a description of several elements that must be included in the PTCMD. This description is intended to provide context for the PTC values derived from the PTCMD. Knowledge of these details of the methodology will allow those receiving PTC data to better understand the implications of the PTC values and their potential impact on BES reliability. Some guidance is provided for each of the required elements:

> Generation dispatch should include a discussion of how generation outages are included in PTC calculations; whether known outages are included or other methods (e.g. Monte Carlo) are used to represent outages of generation, and if any generation related operating guides are utilized. Entities should identify if generation retirements are modeled and if new/proposed generation is included in the models.
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> Transmission system topology should include a discussion of how transmission outages are included in PTC calculations; whether known outages are included or other methods are used to represent transmission outages. Additionally, entities should identify whether transmission facility retirements are modeled and if new/proposed transmission facilities are included in the models.

System demand should include a description of the models used (e.g. Multiregional Modeling Working Group, regional, other), seasons, load levels and conditions selected for PTC calculation.

Current and projected transmission uses should include a description for how firm and non-firm transmission service is modeled.

Any parallel path impacts (loop flows) that are added to the base models or affect PTC results should be explained.

A description of the contingencies evaluated should be provided to explain the types of contingencies (e.g. N-1, N-1-1) that drive the PTC values.

Application of any reliability margins affecting PTC results should be explained. For example, any use of Transmission Reliability Margin and Capacity Benefit Margin whether simulated in models or applied in calculations should be explained.

Requirement R1, Part 1.4 is intended to provide consistency in the planning and operating practices for evaluation of the reliability of the BES.

1.4 A statement that the assumptions and criteria used to calculate PTC are as or more limiting than the assumptions and criteria used in the operating horizon.

For example, if an N-1-1 contingency is being evaluated and normal operating and planning practice is to allow for use of Demand Side Management (DSM) to meet performance requirements then the PTC calculation should also allow for use of DSM.

The application of FAC-013-2 will provide PTC values that are an indicator of the robustness of the future transmission system and facilitate communication between adjacent Planning Coordinators. It will result in meeting FERC's concerns regarding transfer capability in the planning horizon and provide important information that Planning Coordinators will be able to apply in their efforts to reliably plan the BES.