



# **Transmission Planning Strawman Proposal**

May 29, 2007

**Southwestern Power Administration  
FERC Order No. 890 Transmission Planning  
Strawman Proposal**

This document serves as a supplement to the Southwest Power Pool (SPP) RTO “Strawman Proposal for Compliance with the Nine Planning Principles in the Final Rule” (SPP Strawman) to fulfill the intent of the Federal Energy Regulatory Commission’s (Commission) Order No. 890 for Southwestern Power Administration (Southwestern). As noted in the SPP Strawman, Southwestern and SPP have entered into an agreement to include Southwestern’s transmission facilities in the SPP regional planning process and to coordinate transmission planning and construction activities. Southwestern participates in the SPP transmission planning processes while meeting its statutory obligations as a Federal entity.

**Background**

Southwestern, an agency of the Department of Energy, is not a jurisdictional public utility under Sections 205 and 206 of the Federal Power Act and is not specifically subject to Commission Order No. 890. However, Southwestern has had a reciprocity open access transmission service tariff (Tariff) on file with the Commission, since its initial acceptance in May 1998, applicable to transmission capacity in excess of that necessary to meet Southwestern’s Federal obligations under Section 5 of the Flood Control Act of 1944. Additionally, pursuant to an agreement between Southwestern and the SPP, included in the SPP Tariff as Attachment AD, the SPP administers Southwestern’s tariff. The agreement also provides for Southwestern and the SPP to utilize each other’s facilities for transmission service under their respective Tariffs. Southwestern’s transmission facilities are included in the SPP regional planning processes and Southwestern coordinates its local transmission planning with the SPP.

Southwestern is not a full requirements supplier, and does not have traditional load growth responsibilities. Furthermore, Southwestern does not own or operate transmission facilities at a distribution level. Southwestern plans the operation and maintenance of its transmission system primarily to meet its Federal Power and transmission service contractual requirements, NERC reliability standards, and SPP criteria.

**Statutory Obligations**

Southwestern markets Federal peaking hydropower to Federal Power allottees in accordance with Section 5 of the Flood Control Act of 1944 and is “. . . authorized, from funds to be appropriated by the Congress, to construct or acquire, by purchase or other agreement, only such transmission lines and related facilities as may be necessary in order to make the power and energy generated at said projects available in wholesale quantities, for sale on fair and reasonable terms and conditions . . .”

Southwestern, as a Federal entity, must abide by certain statutory obligations and regulatory requirements which are not generally incorporated into the SPP transmission planning process. Examples of such statutory obligations and regulatory requirements are:

- ♦ Pursuant to the National Environmental Policy Act, Southwestern conducts an environmental review of any power system infrastructure addition or upgrade affecting its transmission facilities. This review process involves the preparation of documentation ranging from a categorical exclusion to a comprehensive environmental impact statement.

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- ♦ Southwestern, as a Federal entity, cannot participate in binding arbitration. Any dispute arising from Southwestern's transmission planning process shall be resolved pursuant to Section 12 of Southwestern's Tariff, which describes the applicable dispute resolution procedures.
- ♦ Southwestern's ability to construct new or upgraded facilities is contingent upon the U.S. Congress's making available (through direct appropriation, authority to borrow funds, or through such other means as it may provide) the necessary funds for such purpose. Southwestern requires funds in advance of the performance of any work it may undertake, including but not limited to study and design of facilities, procurement of equipment, and construction, to ensure it complies with the Anti-deficiency Act.

**Participation in SPP Planning Process**

Southwestern participates in the SPP's model development process for both seasonal and long range planning horizon models. Southwestern also participates in the SPP regional transmission planning process, including participation in the SPP Transmission Working Group meetings and SPP's bi-annual regional planning summits.

The existing SPP regional transmission process provides those transmission owners in its planning region with a well-known, well-documented forum to work from. Rather than providing redundant processes, Southwestern believes that the transmission owners within its region would benefit from utilizing the existing SPP infrastructure and forums to the extent possible to work toward meeting the intent of the Commission's transmission planning principles. For example, the SPP has already addressed confidentiality concerns and protection of CEII data through its use of EMC Documentum eRooms and standard confidentiality agreements. SPP has in place a means to present a wide audience with information regarding planning meetings and other non-sensitive information through its website and group email exploders. Additionally, SPP has a process and personnel in place to perform economic studies, which by nature are better suited in planning for a regional geographic area.

Southwestern's participation in the SPP transmission planning processes provides for the coordination, openness, and transparency of Southwestern's planning models and information to all stakeholders in a manner intended to meet the Commission's principles. A narrative of Southwestern's local transmission planning methodology, criteria, and processes used to develop the models provided to the SPP for its transmission planning is included below. Should SPP include an opportunity for Transmission Owners to vet local planning issues and alternatives for solving those issues, and provide for stakeholder input and feedback as part of its regional and sub-regional planning summits, Southwestern would participate in such a forum.

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**Local Transmission Planning Guidelines**

**Model Development**

Southwestern participates in the SPP's model development process as described in the SPP Power Flow Model Development Procedure Manual. During this process a series of seasonal models are developed, for a ten year planning horizon. Existing transmission service modeled in the base cases is limited to service associated with firm contractual agreements, but does not include other transfers such as emergency power, even though such transfers may be provided for in contractual agreements. Even if the transmission service has a termination date, it is included in future models if there is a reasonable expectation that a customer will exercise its rollover rights. Southwestern models all load in its control area for which it provides firm transmission service. Load that may be shed if the source runs out of capacity is still modeled based on the assumption that the load may have opportunity to purchase power from another source.

**Planning Criteria**

The NERC Reliability Standards and the SPP Criteria form the basis for determining whether a reliability violation exists. Voltage limits used in Southwestern's transmission reliability studies are as follows (in per unit):

	<u>Minimum</u>	<u>Maximum</u>
Base Case	0.95	1.10
Contingency Cases	0.90	1.10

The transmission circuit ratings consider both the limitations of the line conductor and of terminal equipment. The rating of transmission circuits follows SPP Criteria 12, with the following clarification: the maximum allowable line loading for normal and contingency conditions is based on a maximum allowable conductor temperature of 85°C. For several transmission lines, Southwestern has reviewed the plan & profile charts to verify that those transmission lines are capable of operating at 100° C without violating NERC clearance criteria. For those lines, Southwestern uses the 100° C rating as a limit for contingency cases. For planning purposes the allowable transformer loading during normal or contingency conditions is 100 percent of nameplate rating.

**Transmission Planning Studies**

Southwestern analyzes its transmission system annually based on the power flow models developed in conjunction with the SPP. Southwestern considers the following contingencies in its assessment of the Southwestern transmission system.

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Single contingencies All branches, including both transmission lines and system equipment, within Southwestern's control area and in any control area with which Southwestern has interconnections are removed, one at a time.

Generation Unit Outages Generating units within Southwestern's control area are removed, one at a time, or where two units share a common generator step up transformer, they are removed two at a time. For this analysis, area interchange control is disabled.

Double Circuit Outages Outages of both circuits on double circuit lines are studied when the lines are double circuited for a significant distance. This includes an outage of the Bull Shoals-Dardanelle and Bull Shoals-Buford Tap 161 kV lines, which are on double circuit structures for 11 miles, and an outage of the Dardanelle-Bull Shoals and Dardanelle-Clarksville 161 kV lines, which are on double circuit structures for 20 miles.

In addition, Southwestern assesses the performance of its system for outages of entire bus sections and substations. In this assessment, controlled loss of load is allowed if necessary to keep the system within voltage and loading limits.

The results of Southwestern's assessment are reported annually in the FERC Form 715 filing. In addition, the results are used to provide input into SPP's assessments, including the NERC Mitigation Review, the SPP Transmission Expansion Plan, system impact studies, and other regional studies.

### **Operational Planning Studies and Assessments**

Southwestern uses seasonal power flow models to identify operating constraints and possible reliability violations that may exist in the upcoming season. In the event the assessment process identifies a reliability violation, Southwestern identifies alternatives to remove the violation and presents the mitigation plan to SPP for review and approval

### **Participation in Regional Transmission Planning Groups**

Southwestern actively participates in regional planning groups, in development of the SPP Transmission Expansion Plan, and in special regional studies. The primary regional transmission planning group with which Southwestern participates is the SPP Transmission Working Group. The Transmission Working Group provides technical advice and assistance to SPP in all aspects of its regional and local planning functions, including but not limited to:

- a) Coordinated planning among the Transmission Owners and SPP;
- b) Regional and local planning criteria;

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- c) Available Transfer Capability calculations; and
- d) Flowgate ratings.

SPP Transmission Working Group meetings are held quarterly, with additional meetings held as needed, and notices of SPP Transmission Working Group meetings are coordinated by the SPP. Any other applicable regional planning groups and regional planning studies that Southwestern participates in are on an ad hoc basis.

### **Information Exchange**

In September of each year, Southwestern will request, in writing, such information needed to develop its transmission system plan from load situated inside its control area, from network transmission customers, and from long-term point-to-point transmission customers. Information requested from point-to-point transmission customers includes any projections such customers have of a need for service over the ten year planning horizon and at what receipt and delivery points. Network transmission customers are requested to submit the information required in Section 29.2 of Southwestern's Tariff. Loads located in Southwestern's control area are requested to submit a forecast of load growth and resource requirements for the ten year planning period. The results of these information requests are included in the SPP seasonal power flow models and otherwise as needed for inclusion in the SPP regional transmission planning process.

### **Cost Allocation**

The cost for modifications to Southwestern's transmission system are generally included in Southwestern's revenue requirement for transmission, and borne by all ratepayers equally. Should transmission planning studies indicate a need to construct or upgrade facilities for specific load(s) located within its control area to meet NERC Reliability Standards and SPP Criteria, the cost for those modifications will generally be allocated to the respective load(s). Southwestern's participation in the cost allocation of transmission modifications identified in the SPP Transmission Expansion Plan is determined by separate agreement between Southwestern and SPP, in accordance with the SPP/Southwestern Agreement. As provided for in the SPP/Southwestern Agreement, SPP may recommend upgrades involving Southwestern's transmission facilities and/or the facilities of others that will improve existing service under Southwestern's contracts with its customers or facilitate service under Southwestern's tariff as administered by SPP. SPP may submit its findings to Southwestern along with a recommendation of Southwestern's share of such costs and a proposed method of participation. Southwestern then evaluates the proposal and provides a response to SPP. Should Southwestern participate in the proposal, such participation will be by written agreement between Southwestern and SPP.