

**Southwestern Public Service Company
Strawman Proposal for Compliance
with Planning Principles
Adopted by FERC Order No. 890**

May 29, 2007

Introduction:

The Commission in Order No. 890 requires “coordinated, open, and transparent” transmission planning to be conducted on a local and regional level, and defines nine principles that must be satisfied by transmission planning processes.¹

Order No. 890 requires transmission providers and transmission owning members of RTOs and independent system operators (ISO) to develop a “strawman” proposal setting forth the manner in which the transmission provider and the transmission owners will comply with the planning principles set forth in the Final Rule.² These strawman proposals will be the basis for the “Attachment K Transmission Planning Process,” in which a transmission provider either must propose a newly developed planning process that complies with the nine principles or show that a current transmission planning process is consistent with or superior to what is required in Order No. 890.

Furthermore, Paragraph 440 of the Final Rule requires transmission owning members of a RTO to conduct planning in accordance with Order No. 890 in order to permit “transmission customers and stakeholders (to) be able to participate in each underlying transmission owner’s planning process. This is important because, in many cases, RTO planning processes may focus principally on regional problems and solutions, not local planning issues that may be addressed by individual transmission owners.”³ This strawman document has been developed in compliance with Order No. 890.

Description of Southwestern Public Service Company

¹ See *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 118 FERC ¶ 61,119 (2007) (“Order No. 890” or “Final Rule”) at P 435.

² See Order No. 890 at P 443. These proposals are to be discussed in regional staff technical conferences that will be conducted by the Commission to address regional implementation and other compliance issues related to the Order No. 890 planning requirements.

³ See *Id.* at P 440.

Southwestern Public Service Company ("SPS") is a vertically integrated jurisdictional electric utility and a wholly-owned utility operating company subsidiary of Xcel Energy Inc. SPS owns and operates electric transmission facilities in four Plains states in the Eastern Interconnection: eastern New Mexico, the panhandle of Texas, Oklahoma and Kansas.⁴ SPS operates a Balancing Authority certified by the North American Electric Reliability Corporation ("NERC"). The SPS transmission system is effectively a "peninsula" in the far southwestern corner of the Eastern Interconnection. SPS has asynchronous or DC interconnections with the Western Interconnection through HVDC converters; one of these interconnections is with its utility affiliate Public Service Company of Colorado ("PSCo"). However, SPS has relatively limited AC or synchronous transmission interconnections to other utilities and balancing authorities. The unique configuration of the SPS transmission system is discussed in more detail in Attachment A to this strawman.

SPS operates approximately 5,780 miles of transmission facilities 69 kV and above, and serves approximately 0.4 million retail and wholesale customers. The 2006 peak transmission load on the SPS system was approximately 5,170 MW. Approximately 38 percent of the load on the SPS system is wholesale firm requirements load; for approximately 32 percent of this load, SPS is not the wholesale power supplier.

SPS is a member of the Southwest Power Pool, Inc. ("SPP"), a FERC-approved RTO. Access to the SPS system is available through the SPP Open Access Transmission Tariff ("SPP OATT"). SPS also provides certain "grandfathered" Network Integration Transmission Services ("NITS") under the Xcel Energy Operating Companies Joint Open Access Transmission Tariff ("Joint OATT") to a

⁴ SPS sold its retail electric distribution territory in Oklahoma and Kansas to Tri-County Electric Cooperative in 2006. SPS no longer provides electric service at retail in Oklahoma and Kansas, but continues to provide wholesale sales service to serve the Tri-County retail loads. SPS retained ownership of 115 kV transmission facilities in Oklahoma to serve Tri-County and 345 kV Tie-Line facilities in Oklahoma and Kansas.

single wholesale customer. The retail native loads of SPS are not directly served under any OATT, but are subject to the non-rate terms and conditions of the Joint OATT and the SPP OATT. SPS is a member of the SPP Reserve Sharing group and a member of the SPP Electric Reliability Organization ("SPP ERO"). SPS participates in SPP ERO sponsored transmission planning processes.

The SPP RTO has functional control over the high voltage (60kV and above) transmission systems of the SPS transmission system under Attachment AI of the SPP OATT, and SPP performs coordinated and transparent regional planning for all transmission facilities in the multi-state SPP footprint through the SPP Transmission Expansion Plan (TEP) process. However, SPS also conducts "bottom-up" local planning to identify transmission improvements necessary to ensure the adequacy and reliability of the SPS system for the benefit of all interconnected entities and transmission customers that utilize SPS system transmission facilities to receive transmission service.

Paragraph 440 of the Final Rule creates ambiguity. Although SPS is a member of both the SPP ERO and RTO and SPP performs planning on a regional basis, SPS also performs certain transmission planning, particularly for lower voltage facilities, which is then incorporated into the SPP TEP coordinated and transparent process.⁵

This strawman document provides a summary description of the planning processes in which the SPS participates and an explanation of how these processes meet the Commission's Order No. 890 principles in providing for a coordinated, open, and transparent transmission planning process. This SPS system strawman should be reviewed in coordination with the separate SPP regional strawman proposal.

⁵ Since SPS is uncertain if the Commission would find that the SPP strawman allows SPS to comply with the Final Rule for the planning process associated with lower voltage facilities, this document constitutes the initial strawman document for SPS describing how coordinated and transparent transmission planning processes occur for the SPS system, particularly for lower voltage facilities, and how the results of those planning processes are incorporated in the SPP TEP regional process. However, SPS urges the Commission to determine that the SPP strawman satisfies the obligations of all SPP transmission owners under the Final Rule. If not, SPS believe it may need to draft and adopt formal charters or procedures that will, in part, include provisions that meet the Order No. 890 Principles.

Compliance with Nine Order 890 Principles

1. Coordination

This principle requires that “transmission providers must meet with all of their transmission customers and interconnected neighbors to develop a transmission plan on a nondiscriminatory basis.” The planning process must “provide for the timely and meaningful input and participation of customers into the development of transmission plans.”

SPP is the Transmission Provider for all non-grandfathered OATT transmission uses of the SPS system. SPS participates in SPP’s coordinated regional and sub-regional planning processes. SPS maintains a membership position on the Transmission Working Group ("TWG"). The purpose of this group is to address transmission reliability matters and planning studies in the SPP footprint. SPS attends these meetings either in person or by phone. These meetings are fully described in the SPP draft strawman.

With the assistance of its service company affiliate Xcel Energy Services Inc. ("XES"),⁶ SPS participates in the sub-regional study processes, and in specific SPP study groups. SPS participated in the Kansas-Panhandle sub-regional expansion study group and has also participated in the Texas Panhandle – Oklahoma Study Group. SPS has in both instances suggested the formation of these study groups to further regional planning in the SPP.

SPS communicates with SPP in response to specific requests and also with other utilities as requested on any joint planning issues.

SPS has a Network Operating Agreement ("NOA") with the single remaining NITS customer taking service under the Joint OATT. Internally, SPS has held periodic meeting with its wholesale transmission customers, whether they take service under

⁶ XES is the service company for the Xcel Energy Inc. public utility holding company system. SPS is a utility operating company subsidiary of Xcel Energy Inc.

the SPP OATT or the Joint OATT, to discuss pertinent system issues. Specific study coordination has been done either through SPP or directly as needed.

2. Openness

The planning process must “be open to all affected parties” and must include safeguards to ensure confidentiality of transmission system information, particularly Critical Energy Infrastructure Information (CEII).

SPS relies on the SPP and its open planning processes to provide the vehicles for openness and communication on the 115 kV and above transmission systems.

When SPS is doing specific planning on the lower voltage 69 kV system, SPS actively communicates with the affected transmission owner directly, their transmission agent, or the requesting transmission customer, as needed.

Studies that SPS performs due to transmission requests made under the Joint OATT are posted on the SPS OASIS, which is an OASIS page under the SPP OASIS.

Currently, SPS does not hold regularly scheduled sub-regional planning meetings to discuss its planning or expansion plans for the 69 kV systems. SPS will contact any specific transmission customer that will be affected, should that discussion be needed. SPS is considering holding periodic annual or bi-annual sub-regional planning meetings to discuss upcoming or developed plans.

3. Transparency

Transmission providers are to disclose basic planning criteria, planning assumptions and planning data along with study methodologies, criteria, and processes. Transmission providers are required to have written documentation of the study methodology, criteria, and processes used to develop transmission plans. Transmission providers must “make available information regarding the status of upgrades identified in their transmission plans in addition to the underlying plans

and related studies.” Also, “where demand resources are capable of providing the functions assessed in a transmission planning process, and can be relied upon on a long-term basis, (the demand resources) should be permitted to participate in (the) process on a comparable basis.”

SPS has attached a summary of its internal planning criteria to this document as Attachment A.

Study documentation is attached to the studies when they are posted on the SPS OASIS. The general methodology is described in Attachment A.

SPS's system upgrades are provided to the SPP in two ways. First, they are provided through the SPP Model Development process every fall. New projects are added to the powerflow models, which are budgeted projects in SPS. Second, project schedule information is provided according to SPP's process for project updates.

SPS's transmission expansion plans are primarily related to load serving and 69 kV expansion. Any criteria, assumptions, or other underlying data is provided in the associated study report for that plan or study when it is released.

SPS has documented the specific planning criteria in its FERC Form 715 filing and has attached those specific criteria to this filing.

4. Information Exchange

Transmission providers, in consultation with customers and other stakeholders, must develop information exchange guidelines and schedules for submittal of information from both network and point-to-point transmission customers.

Under the Joint OATT, SPS' NITS customer is required to provide annual updates to their network transmission service each year with a ten year forecast. Other SPP

network transmission service customers provide their input directly to SPP and SPS may obtain that information if needed for its studies and model building.

5. Comparability

Each transmission provider is required “to develop a transmission system plan that (1) meets the specific service requests of its transmission customers and (2) otherwise treats similarly-situated customers (e.g. network and retail native load) comparably in transmission system planning.” Furthermore, “customer demand resources should be considered on a comparable basis to the service provided by comparable generation resources, where appropriate.”

The studies done by SPS under its OATT are based on the most recent SPP Aggregate Study models, without the new studied transmission service of the most recent SPP Aggregate transmission service study. This captures the most recent firm transmission service sold by SPP, but not new speculative requests for transmission service. This puts the SPS transmission service studies on a close track with SPP’s aggregate transmission service studies.

Load interconnection customers under SPP’s transmission service tariff, wholesale grandfathered customers and retail load requests are studied in a mostly sequential method. Wholesale customers place their transmission service requests through the SPS or SPP OASIS. Clustering of transmission service studies requests make sense for some groups of study requests and SPS uses that method when it can be beneficial and improve efficiency.

As SPS performs its network transmission service studies, it evaluates the impacts on neighboring utilities. If a significant effect is seen, consultation with SPP and the affected transmission owner(s) will be done to resolve the issue.

SPP planning procedures recognize that SPP and its members will need to address transmission system requirements to meet state renewable portfolio standards, state

resource adequacy requirements, and other similar regulatory programs that could include treatment of customer demand response resources.

6. Dispute Resolution

For transmission planning related issues, transmission providers must have a dispute mechanism outlined in their OATT that is able to address “both procedural and substantive planning issues.” A transmission provider can utilize an existing dispute resolution process, but must specifically state how the process will be used to address planning disputes.

Transmission service customers taking service under the SPP OATT or disputing the results of an SPP planning process can utilize the dispute resolution processes set forth in the SPP OATT. Dispute resolution is also addressed in the Joint OATT, section 12. SPS will work to revise the dispute resolution mechanism in the Joint OATT, as necessary to meet the Dispute Resolution Principle.

7. Regional Participation

The principle states that “each transmission provider will be required to coordinate with interconnected systems to (1) share system plans to ensure that they are simultaneously feasible and otherwise use consistent assumptions and data and (2) identify system enhancements that could relieve congestion or integrate new resources.” Transmission providers are required to specify “the broader region in which they propose to conduct coordinated regional planning.” The coordinated regional planning “must be open and inclusive and address both reliability and economic considerations.”

SPS shares its modeling data through the SPP modeling processes. SPS provides review and comments on SPP studies, both regional and sub-regional. SPS shares its internally developed transmission plans through the SPP processes, specifically through the SPP TEP and model development processes.

SPS's transmission planning region is limited to its electrical system boundary.

SPS's internal transmission planning process is responsive to direct transmission requests by wholesale and network customers for new load interconnections. Sometimes, these requests are confidential and not open to being shared with others until the project is in the construction phase. SPS respects the customer's request for confidentiality.

8. Economic Planning Studies

Transmission providers are required to perform economic planning studies (1) to address both “‘local’ congestion (i.e., within the transmission provider’s system) and congestion between control areas and sub-regions” and (2) to integrate new generation resources and/or loads on an aggregated or regional basis.

SPS has deferred to the SPP regional economic planning process for compliance with the broader requirements of Order 890. SPS's focus is reliability planning and network transmission service. SPS has done specific special studies upon network customer request, which may be deemed economic, and those are posted on the SPS OASIS.

9. Cost Allocation

A transmission provider’s planning process “must address the allocation of costs of new facilities.” This applies only to regional projects that do not fit under existing rate structures, such as regional projects involving several transmission owners or economic projects that are identified under the study process described in the economic planning studies principle. The planning proposal “should identify the types of new projects that are not covered under existing cost allocation rules.”

As part of SPP's role as an RTO, SPP has the responsibility to coordinate and develop regional transmission plans and cost allocation for new transmission facilities. SPS is a participant in the SPP development process.

The SPP already has in place a cost allocation process for regional reliability projects, interconnection upgrades, and requested transmission service upgrades. SPS is subject to this process and is a full participant. This process was developed by the SPP Regional State Committee ("RSC") and the SPP Cost Allocation Working Group. These committees include participants from various state regulatory agencies, transmission owners, and transmission users in SPP. SPS is an active participant of the SPP Cost Allocation Working Group.

SPP is currently developing a cost allocation process for new economic projects that would identify and allocate costs for regionally beneficial transmission projects in the SPP footprint that would meet Order 890 guidelines. The SPP Regional State Committee and the SPP Cost Allocation Working Group are in the process of reviewing various potential solutions. SPS continues to be a participant of the SPP Cost Allocation Working Group.

For new load serving interconnections, costs are assigned to the requesting entity pursuant to the Xcel Energy Transmission load interconnection cost allocation policy posted at the Xcel Energy corporate web site ([http://www.xcelenergy.com/docs/LoadInterconnectionCost AllocationPolicyfinal.pdf](http://www.xcelenergy.com/docs/LoadInterconnectionCost%20AllocationPolicyfinal.pdf)).

Attachment A – SPS Planning Criteria

SPS subscribes to the Southwest Power Pool (“SPP”) Reliability Criteria, which incorporates compliance with the appropriate NERC Planning Standards.

SPS's own specific criteria are applied in the development of the power flow data and conducting the studies. Brief descriptions of those criteria follow.

Voltage Criteria

SPS allows a range of 0.95 per unit (p.u.) to 1.05 p.u. for the system voltage at a specific bus, for base cases under normal flow conditions. SPS does not limit the maximum allowable voltage change during a contingency (voltage deviation criteria). The maximum allowable voltage change is dependent on the makeup of the customer load in the area of the contingency and the starting point for the voltage before the contingency. The +/- 0.05 p.u. base case voltage range is applied to all voltages, including sub-transmission networks.

During contingency studies SPS allows a range of 0.90 per unit (p.u.) to 1.05 per unit (p.u.) for the system voltage for most buses. The contingency range is dependent on the type of load at the bus under examination, the transmission equipment rating and any regulating equipment, which can be used to regulate the voltage delivered to the customer. Voltage deviations up to 1.10 per unit voltage may be permitted depending on the specific equipment ratings.

When evaluating available transfer capability, the TUCO 230 kV bus voltage is monitored and not allowed to go below 0.92 p.u. to minimize the risk of voltage collapse and system separation from the SPP.

Transmission Element Rating Criteria

SPS uses two ratings in its power flow studies. The first limit, frequently referred to as Rating A, or the normal operating limit, is the thermal current carrying capacity of the most limiting series element on the transmission line. The second limit, frequently referred to as Rating B or the emergency rating, is approximately 1.1 times the thermal current carrying capacity of the conductor on circuits that can be switched within 30 minutes, or the 4-hour overload rating for a limiting series element. SPS uses summer ratings for all of the seasons except winter, which is based on average ambient temperature conditions.

Transformer Rating Criteria

SPS provides two ratings for its transmission transformers in the power flow data. If the transmission transformers are serving steady continuous load, then both ratings, Rating A and Rating B, are set to 100% of the full forced rating of the transformer. If the transmission transformers are serving cyclical load, then Rating A is set to 100% of the full forced rating of the transformer, and Rating B is 115% of Rating A for the summer and 125% of Rating A for the winter data. The full forced rating of the transformer is

Attachment A – SPS Planning Criteria

defined to be that transformer load that can be carried with all cooling fans and pumps in operation and the internal winding temperatures at the manufacturer's recommended maximum.

Transformer Tap Ratios

Transformers with both fixed high side taps and low side tap changers are modeled to reflect the setting of the high side taps. The actual load tap changer adjustment range of the specific transformer is provided in the power flow data.

North-South Flow Criteria

SPS has three 230 kV north-south transmission lines and two 115 kV north-south transmission lines. The 230 kV lines are the Amarillo South Interchange-Swisher County Interchange line, the Bushland Interchange-Deaf Smith Interchange-Plant X line, and the Potter County Interchange-Plant X line. The 115 kV lines are the Randall County Interchange-Palo Duro-Happy Interchange line and Osage Switching Station-Canyon-Hereford Interchange line. The stability limit is 800 MW flow south on these lines for an outage of a Tolk unit.

Interconnected Reliability Criteria

These criteria provide a framework for analyzing SPS's system in transfer analysis with other companies to which SPS is connected. A brief discussion of SPS's tie-lines is necessary for some understanding of the network.

SPS has both synchronous and asynchronous tie-lines in service. The connection with American Electric Power Company's ("AEP") Public Service of Oklahoma ("PSO") operating company from SPS's Grapevine Interchange to PSO's Elk City Interchange is a 230 kV transmission line. The second connection with PSO is a 345 kV line from SPS's TUCO Interchange to PSO's Interchange near Oklaunion, Texas, which has a High Voltage Direct Current (HVDC) tie to ERCOT. A lesser interconnection is with AEP's West Texas Utilities ("WTU") operating company is through 115 kV lines originating out of SPS's Kirby switching station and connecting to WTU's Jericho 115/69 kV interchange and 115 kV bus at Shamrock, Texas. The 69 kV tie may be operated closed or open based on operating requirements on WTU's transmission system. There is also a 69 kV interconnection between WTU's Shamrock 69 kV bus and SPS's Magic City 69 kV bus that is normally open. SPS has a 115 kV interconnection with Mid-Kansas Electric Company's substation at Liberal, Kansas. It is connected to SPS's Texas County Interchange near Guymon, Oklahoma through a 115 kV phase shifting transformer. An additional interconnect from Potter County Interchange to Finney Switching Station to the Holcomb Plant 345 kV line was placed in service in 2001. Sunflower Electric Power Corporation owns the Holcomb Plant.

Attachment A – SPS Planning Criteria

SPS also has three interconnections with utilities in the Western Electricity Coordinating Council (WECC). The first is the Blackwater HVDC Interconnection near Clovis, New Mexico. This HVDC is owned and operated by Public Service Company of New Mexico (“PNM”). This HVDC interconnection is rated 200 MW nominal. The second HVDC interconnection is the Eddy County HVDC Interconnection near Artesia, New Mexico. This HVDC interconnection is owned by El Paso Electric and PNM and operated and maintained by SPS under contract. The rating of this interconnection is 200 MW nominal. The third is the Lamar HVDC Interconnection near Lamar, Colorado with Public Service Company of Colorado (PSCo). This HVDC is owned by PSCo and is jointly operated by SPS and PSCo. This HVDC interconnection is rated 210 MW nominal. The HVDC interconnections do not have response characteristics of synchronous inter-ties and remain block loaded during contingency studies.

SPS's AC or synchronous interconnections have historically been built for system reliability. However, due to increases in load, these interconnections are presently required to meet demand during peak loading conditions. Additionally, these interconnections provide for emergency power if one of SPS's generators is suddenly taken off line. The largest SPS generators are the Tolk Plant units, both of which are rated 540 MW net. The existing synchronous interconnections are designed to allow the SPS system to sustain the loss of a Tolk unit without separating from the SPP.

The evaluation of power flows in or out of SPS's system should be based on SPS's reliability criteria to maintain synchronous connection with the SPP at all times. It is SPS's interconnected reliability criteria that any proposed transmission service will not reduce the ability of SPS to remain connected with the SPP in all contingencies under study. Thus, if any import of power is scheduled into the SPS system, this scheduled import cannot be so large that the loss of this import forces SPS to separate from the SPP. Similarly, the evaluation of an export of power from the SPS system should meet the same criteria. With the export or import of power occurring, there should not be cascading loss of interconnections with the SPP due to the single outage of a transmission or generation element.

General Assessment Practices

On an annual basis, SPS prepares power flow model data based on the previous year's annual peak and the current load forecast. Historical actual load point data is used in preparing the new power flow base cases.

SPS performs single contingency outage studies on the summer peak models by examining the loss of each transmission element. The transmission elements are defined to be all transmission lines between 345 kV and 115 kV and transformers with high side connections to these transmission voltage levels. Each single contingency outage case is reviewed to determine if system improvement is required to provide reliable service during this contingency. Single contingency studies may be performed on the winter peak and average load models, to determine the sensitivity of the network to outages with seasonal generation patterns. Studies on the 69 kV sub-transmission

Attachment A – SPS Planning Criteria

network are targeted every two years. SPS's 69 kV network is extensive and is for a large part operated radial. Studies on selected portions of the 69 kV network may be done on a much more frequent basis, depending on load growth in a specific area.

If a network addition is proposed in a specific region of the transmission system, single contingency studies will be made of that area with the proposed addition to determine its ability to provide service. The studies will be made in the model year that the transmission addition is proposed to go into service and also for the model year that is the furthest into the future. For example, if a new 230/115 kV interchange is to go into service in 2009, the addition of this interchange would be studied in 2009 power flow models, and would also be studied in the future models to determine the long-term performance of this network addition.

For SPS's study purposes, power flow simulations are done with area interchange control enabled with tie-lines and load, transformers with load tap changers regulating, and generator voltage regulation enabled. All SPS generators are assumed to be capable of regulating voltage between their minimum and maximum reactive power limits. Small non-utility generators, and wind farms do not provide significant voltage regulation. The HVDC interconnections are block loaded in power flow simulations. Studies can be done with a full Newton solution or a decoupled Newton solution.

Where new generation is needed but not yet known as to its exact location, fictitious generators will be placed on the system as needed to maintain a balance between load and generation. These are normally placed at the Tolk Plant bus first, and if needed the Jones Plant bus. These are internal busses in the powerflow model.

Interconnected Reliability Assessment Practices

It is important that any proposed transfer of power or construction of facilities not degrade SPS's interconnected reliability. SPS does perform contingency studies on the loss of a Tolk unit, the largest generating unit in the control area, with all HVDC tie-lines in service as a baseline case.