

SPP Transmission Expansion Planning Manual –DRAFT

Date
2-26-2010

Maintained by:
Southwest Power Pool Staff

The logo for the Southwest Power Pool (SPP) is located in the bottom right corner. It features the letters "SPP" in a large, bold, red serif font. To the right of "SPP", the words "Southwest" and "Power Pool" are stacked vertically in a smaller, black, italicized serif font. The entire logo is set against a background of a stylized, light gray geometric pattern that resembles a power grid or transmission lines.

SPP *Southwest
Power Pool*

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Disclaimer

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Introduction

This document is the SPP process guide for the preparation of transmission expansion studies and reports required to meet SPP's planning obligations. This process will be used to prepare SPP's transmission expansion plans, which are submitted at least biennially to the SPP Board of Directors for approval.

Regional Planning History

SPP has been involved in regional planning for decades. SPP did not wait for Regional Transmission Organization designation to formalize a more comprehensive, open, and transparent planning process to address transmission expansion needs within the SPP footprint. The SPP Open Access Transmission Tariff (OATT) contains procedures in Attachment O that describe the coordinated planning process.

The Transmission Working Group (TWG), which is comprised of representatives from SPP's member organizations, has primary responsibility for the regional planning process. The TWG consists of both Transmission Owners and Non-Transmission Customers. Meetings are open to the public and agendas posted on the SPP Web site. SPP stakeholders are encouraged to actively participate in the regional planning process to ensure that recommended expansion plans are the best solutions for the footprint.

As a regional reliability council, SPP has coordinated planning for many years. SPP staff have historically performed regional assessments of the transmission system and coordinated studies of SPP transmission owners. This process was included in the OATT upon the addition of long-term transmission service on April 1, 1999.

In recent years, SPP has performed or participated in many recent regional expansion studies:

- During 2000, SPP began a Bulk Extra High Voltage (EHV) Transmission Study. This study identified potential upgrades to relieve known constraints in the SPP. This study was completed in two phases during 2001.
- In 2002- 2003, SPP participated the in Midwest ISO Transmission Expansion Plan (MTEP).
- In 2005, SPP published the "X Plan," which represents an efficient transmission expansion plan for delivering wind energy in the Central and South Plains to the existing electric grid.
- In 2007, SPP issued a report on its EHV Overlay Project, which provides innovative blueprints for the future of the transmission grid for SPP and its neighboring regions. This report, which was independently prepared by InfraSource Technology and PowerWorld Corporation, provides a strategic assessment of how to meet SPP's future reliability and capacity needs through the use of a 500 and 765 kV transmission system overlaying the existing SPP footprint and integrating with the existing EHV systems of Entergy, MISO, and PJM.

SPP continues to support model building efforts and inter-regional studies with neighboring NERC regions and other entities responsible for the planning and operations of the bulk electric

transmission system.

As a Federal Regulatory Energy Commission (FERC)- approved Regional Transmission Organization, SPP is responsible for planning and directing transmission expansions, additions, and upgrades that will enable it to provide efficient, reliable, and non-discriminatory transmission service and coordinate such efforts with appropriate state authorities.

SPP has been proactive in its transmission expansion planning efforts, which continue to evolve with time. In 2003, SPP formally began its Regional Planning process that provided an open and transparent process for all stakeholders to have input into the planning of the SPP transmission system. Through the TWG, SPP designed a process for planning and expansion to encourage open participation for market-motivated solutions to relieve congestion.

SPP staff is responsible for developing the annual SPP Transmission Expansion Plan. SPP works with state regulatory agencies and legislators to ensure that the regional planning process addresses their needs. SPP's Regional State Committee and its working groups are becoming more involved in the transmission expansion planning process at SPP.

SPP's planning and expansion process is coordinated and integrated with programs of other Independent System Operators and Regional Transmission Organizations (ISOs/RTOs). SPP has a history of coordination with ISOs/RTOs through its efforts on coordination agreements and information exchange. This coordination is demonstrated by SPP's past and continuing participation with the Midwest ISO in its Transmission Expansion Plan, and with the SERC Reliability Corporation on its VST model building efforts. The SPP regional transmission plan includes all transmission facility expansion in the region and attempts to assess the combined effect on loop flows and reliability of all existing and planned facilities.

Controlling Document Requirements

The SPP Transmission System Expansion Planning process is based on FERC Order 2000, SPP Criteria, SPP Membership Agreement and Bylaws, SPP's OATT, and coordination/seams agreements with neighboring entities responsible for planning and operating the bulk electric transmission system.

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Transmission Expansion Planning Process

Introduction

As an RTO, SPP is responsible for collaborative, intra-regional planning for coordinated transmission expansions. The SPP planning process enables SPP to provide efficient, reliable, and competitive generation market Transmission Services on a non-discriminatory basis. The SPP planning process takes into account its stakeholder's requirements, while coordinating with applicable federal, state and local regulatory authorities.

SPP meets the planning and expansion objectives of FERC Order 890 through coordinated planning with an open stakeholder process. The SPP Transmission Expansion Plan (STEP) promotes the efficient expansion of the transmission system under SPP's control and enables competitive generation markets. By coordinating the planning throughout the SPP region and cooperative inter-RTO planning, the STEP maintains or improves existing reliability levels, while minimizing overall costs of the plan. Coordination of plans over a large regional area, with input from stakeholders, ensures the plans provide the best overall solutions to reliability needs with appropriate consideration of economic and environmental factors.

The STEP identifies potential expansion projects needed to meet reliability standards and to interconnect new generation, with consideration for load growth, competitive generation market, stakeholder input, and transmission service commitments. In addition, the STEP considers plans for addressing transmission congestion and the benefits associated with development of new generation as alternatives to transmission expansion.

Collaborative Process

Planning within SPP is a collaborative process with Transmission Owners, users, and other stakeholders. This process requires that Transmission Owners continue to develop expansion plans to meet the needs of their systems. At the same time, SPP assesses its system for the ability to meet applicable reliability standards, address the needs of the competitive generation market, and address stakeholder concerns, including those of regulators. This "bottom-up, top-down approach" is advantageous to all stakeholders.

Transmission Owners develop their system specific plans, which SPP consolidates into the integrated STEP. This process allows for projects with regional and inter-regional impact to be analyzed for their combined effects. It allows the exploration of modifications and alternatives to proposed plans, which may provide more effective or economical solutions to regional and local needs. The STEP takes into consideration the transmission needs of all stakeholders. SPP develops the overall regional and inter-regional plan by incorporating and modifying, if appropriate, plans generated from multiple sources, including:

- Ongoing planning by Transmission Owners and regional planning groups
- Plans developed through studies associated with requests for generation interconnection
- Plans developed through transmission service requests
- Plans developed by SPP staff to meet intra-regional needs
- Plans developed with other ISOs/RTOs to meet inter-regional needs

Annual Planning Process

SPP has a 12-month planning process which focuses on the system's reliability needs and the commercial and market needs for all the stakeholders in the SPP footprint. This process was developed by SPP staff in conjunction with the TWG.

Details regarding key assumptions, models, project data, specific tasks, outstanding issues, progress reports, maps, and study results are available on the SPP web site. The process has evolved over time and addresses the needs of the Regional State Committee. Although annual reports are provided including recommendations regarding transmission expansion projects, SPP's first planning cycle was a two-year process that was shortened in 2006 to a 12-month cycle which improved project timing and model synchronization with SPP Tariff Studies.

The SPP Planning Process is open and participatory process. The process is designed to transparent so all stakeholders have the opportunity have input in the Transmission Plans that are recommended by SPP. Following are the key components of the process:

- The TWG meetings are open meetings, available for all stakeholders to attend. Not all stakeholders are allowed to vote, but they are allowed to take part in the discussion. TWG has the oversight of the STEP, which includes approving the scope of the STEP. Throughout the process the TWG is updated on the STEP progress. The STEP report is review by TWG before going to the Market Operations Policy Committee (MOPC).
- The MOPC is updated by the TWG of the STEP's progress. MOPC reviews the STEP report before it goes to SPP BOD for approval. Stakeholders are allowed to provide comments during these meetings.
- Planning Summits
 - The purpose of the planning summits is for the Transmission Provider and the stakeholders to share current SPP transmission network issues, develop the study scopes, provide solution alternatives and review study findings. These summits also provide an open forum where all stakeholders have an opportunity to provide advice and recommendations to the Transmission Provider to aid in the development of the STEP.
 - The planning summits shall be open to all entities.

- The Transmission Provider (SPP) shall chair and facilitate the planning summits.
- Planning summits shall be held at least semi-annually, including sub-regional breakout sessions of the SPP Region. Teleconference capability shall be provided for planning summits. Planning summit web conferences shall be held as needed.
 - The spring planning summit identifies the transmission violations identified through the SPP analysis. Violations are posted on the web site and are sent to Transmission Owners to develop alternative solutions. Stakeholders' alternative solutions to violations are also solicited at the planning summits.
 - The summer/fall summit identifies SPP recommended Expansion Plan for 100 kV and above facilities.
 - The fall web conference identifies the 69 kV Expansion Plan and any changes that has occurred from stakeholder feedback on 100 kV and above projects
 - A stakeholder feedback period is provided after each planning summit
 - Notice of the planning summits and web conferences shall be posted on the SPP website and distributed via email distribution lists.
- Sub-regional Planning Meeting
 - The purpose of the sub-regional area planning meetings is to identify unresolved local stakeholder issues and transmission solutions at a more granular level than can be accomplished at general regional planning meetings. The sub-regional planning meetings shall provide stakeholders with local needs the opportunity to provide advice and recommendations to the Transmission Provider and to the Transmission Owners.
 - The sub-regional area planning meetings shall provide a forum to review local planning criteria.
 - Individual Transmission Owners within the SPP Region may develop company-specific planning criteria that, at a minimum, conform to the NERC Reliability Standards and SPP Criteria.
 - For each annual planning cycle, Transmission Owners must provide to the Transmission Provider at least once a year, by April 1st their company-specific planning criteria in order for the need for Zonal Reliability Upgrades to be assessed and included, as appropriate, in the SPP Transmission Expansion Plan
 - Transmission Owner planning criteria may be modified at any time provided that, if the planning criteria are made more stringent, the increased requirements will not apply retroactively to studies previously completed or studies already underway by the Transmission Provider.
 - Access to the individual Transmission Owner planning criteria shall be made available via the SPP website.
 - The individual planning criteria of each Transmission Owner shall be the basis for determining whether a reliability violation exists for which a need for a new Zonal Reliability Upgrade should be considered. A Zonal Reliability Upgrade shall not be a Base Plan Upgrade.
 - SPP shall provide oversight to assure that each Transmission Owner applies its local planning criteria comparably to all load in its service territory

Contents of the STEP

- The STEP shall summarize the regional, sub-regional and local transmission needs of the SPP Region into a single plan which is assessed on the basis of maintaining the reliability of the SPP Region and economic transmission improvement opportunities.
- The STEP shall conform to the NERC Reliability Standards, the SPP Criteria, and to company-specific planning criteria.
- The STEP shall reflect at least the subsequent ten year planning horizon for the following:
 - Transmission projects;
 - Load and capacity forecasts, including the impact on load of existing and planned demand response resources;
 - Long-term firm transmission service;
 - Generation additions and retirements;
 - The STEP shall accommodate and reflect the specific long-term firm transmission service requests of the Transmission Customers with Service Agreements under the OATT and specific interconnections of Interconnection Customers with interconnection agreements under the OATT. Such Service Agreements and interconnection agreements must either be executed or filed unexecuted with the Commission.
 - The STEP shall accommodate and reflect demand response resources which are capable of providing the functions assessed in the SPP planning process, and can be relied upon on a long-term basis. Such demand response resources shall be permitted to participate in the planning process on a comparable basis to the service provided by comparable generation resources where appropriate.
- Each STEP shall include a list of the following:
 - Upgrades required to maintain reliability in accordance with the NERC Reliability Standards and SPP Criteria;
 - Upgrades required to maintain reliability in accordance with more stringent individual Transmission Owner planning criteria;

- Upgrades that have potential economic benefit to the SPP membership for which project sponsors have committed to the projects;
- Upgrades associated with Service Agreements, either executed or filed unexecuted with the Commission;
- Upgrades associated with interconnection agreements, either executed or filed unexecuted with the Commission;
- Upgrades developed with neighboring Transmission Providers to meet inter-regional needs, including results from the coordinated system plans; and
- A list of all of the potential economic upgrades that have been screened and report on the results of the screening analyses performed in accordance with Attachment O of the OATT.
- Projects are identified according to the type of project, reliability projects identified by SPP, planned projects by transmission owner, transmission service request or economic project.

Process Responsibilities

Data Requirements

Any entity that is subject to the NERC Reliability Standards is required to provide data to the Transmission Provider in accordance the NERC Reliability Standards for Modeling, Data and Analysis (the “NERC MOD Standards”).

When an entity is in the conceptual planning stages of new facilities that impact the interconnected operation of the Transmission System, it shall contact the Transmission Provider so that the optimal integration of any new facilities and potentially benefiting parties can be identified.

In preparation for the annual update of transmission planning models for each annual planning cycle, SPP Members, Transmission Customers and other stakeholders must provide to the Transmission Provider the data specified in Section X of Attachment O of the OATT.

During the course of the annual planning cycle, if material changes to the data occur, the data owners must provide timely written notice to the Transmission Provider.

A list of model information and format required shall be posted on the SPP website with password protected access. Instructions for access to the list of model information and format required and to the model information itself is posted at:

Transmission Provider (SPP)

SPP is responsible for:

- Planning and arranging for transmission expansion through an open planning process.
- Annually updating the STEP using the general process depicted on page **.
- Developing a study plan.
- Developing the list of reliability projects in accordance with the stakeholder process set forth in Sections III.2, III.3 and VII of the Attachment O of the OATT and including inter-regional coordination set forth in Section XI of Attachment O of the OATT. This list will identify Zonal upgrades required to maintain reliability in accordance with more stringent individual Transmission Owner planning criteria; and inter-regional needs, including results from the coordinated system plans.
- To develop the list of reliability project, the Transmission Provider shall perform transmission planning studies to assess the reliability and economic operation of the Transmission System
- Arranging for stakeholder meeting(s) as necessary for collaborative input and refinement of the planning scope, project definition and purpose, work assignments and responsibility, scheduling, cost analysis, alternatives, and assumptions.
- Incorporating input from neighboring entities that are responsible for bulk power expansion planning.
- Integrating projects affecting regional reliability and competitive generation markets into the STEP.
- Incorporating Transmission Owner's transmission expansion plans into the STEP.
- Collaboratively creating and developing the processes, procedures, and protocols associated with an effective and efficient model building effort.
- Directing the ensuing collaborative study and assessments, with the help of the TWG
- Directing the preparation of preliminary reports proposing new projects, making modifications to existing projects, and proposing alternative solutions to deficiencies identified in the assessment process.
- Because the planning process is an open, iterative, collaborative process, preliminary results may be reviewed in open meetings to obtain collaborative agreement on proposed plan changes before proceeding. If inter-regional problems are already known, SPP will work with neighboring entities to cooperatively combine the expansion plans and to assess and consolidate the needed intra-regional facilities.
- The Transmission Provider shall coordinate any studies with other transmission providers primarily through participation in:
 - The Joint Operating Agreement between the Midwest Independent Transmission System Operator, Inc. (MISO) and Southwest Power Pool, Inc. (SPP);

- The Transmission Coordination Agreement between the Associated Electric Cooperative, Inc. (AECI) and the Southwest Power Pool, Inc. (SPP);
- The United States Department of Energy Southwestern Power Administration Agreement Between United States of America and Southwest Power Pool, Inc. (the “SPA Agreement”);
- The Eastern Interconnection Reliability Assessment Group; and
- Bilateral agreements between the Transmission Provider and transmission systems to which the SPP Region is interconnected. SPP shall continue its efforts to formalize and improve seams agreements with its neighbors and affected systems to facilitate inter-regional and interconnection wide transmission planning and expansion.
- On an annual basis, the Transmission Provider shall review the efforts under the agreements specified in section above and determine any additional inter-regional study needs. The Transmission Providers shall share this review with the stakeholders at a planning summit and solicit input regarding additional inter-regional study efforts that should be initiated by the Transmission Provider.

The Joint Operating Agreement between the MISO and SPP

- The Joint Operating Agreement between the MISO and SPP provides for coordinated system planning between MISO and SPP to ensure that coordinated analyses are performed to identify expansions or enhancements to the transmission system capability needed to maintain reliability, improve operational performance, or enhance the competitiveness of electricity markets.
- Results of such coordinated studies will be included in a coordinated system plan.
- The coordinated system plan shall have as input the results of ongoing analyses of requests for interconnection service and ongoing analyses of requests for long-term firm transmission service.
- The coordinated system plan shall be an integral part of the expansion plans of each party.
- The Joint Operating Agreement between MISO and SPP is posted on the SPP website at:

http://www.spp.org/publications/2008-12-19_Midwest%20ISO_SPP%20JOA_2009-02-19.pdf

Joint Operating Agreement between AECI and SPP

- The Joint Operating Agreement between AECI and SPP provides for coordination of any studies required to assure the reliable, efficient, and effective operation of the transmission system.
- Results of such coordinated studies will be included in a coordinated system plan.
- The coordinated system plan shall have as input the results of ongoing analyses of requests for interconnection service and ongoing analyses of requests for long-term firm transmission service.
- The coordinated system plan shall be an integral part of the expansion plans of each party.
- The Joint Operating Agreement between AECI and SPP is posted on the SPP website at:
[SPP AECI Joint Operating Agreement](#)

The SPA Agreement

- The SPA Agreement provides for inclusion in the SPP planning process the transmission facilities of SPA that are utilized to implement the OATT and coordination of transmission planning and construction activities.
- The SPA Agreement is Attachment AD to the OATT.

Eastern Interconnection Reliability Assessment Group (ERAG)

The purpose of the ERAG effort is to further augment reliability of the bulk-power system in the joint areas of:

- The Florida Reliability Coordinating Council, Inc.,
- The Midwest Reliability Organization,
- The Northeast Power Coordinating Council, Inc.,
- ReliabilityFirst Corporation,
- SERC Reliability Corporation, and
- SPP

through periodic reviews of generation and transmission expansion programs and forecasted system conditions in the corporate region of the parties.

Transmission Owners (TOs) are responsible for:

- Preparing and updating their detailed power system models. These models will be used by regional and sub-regional planning groups, SPP and other ISOs/RTOs, and/or third parties for performing interconnection and expansion studies.
- Developing specific expansion projects. TOs' projects will be integrated into the STEP.
- Applying their expert knowledge of the strengths and weakness of their respective transmission systems to the evaluation of all projects in the STEP that impact their respective transmission systems.
- Participating in SPP initiatives to assist in expansion studies and alternatives.
- Provide timely, accurate estimates of needed facilities so realistic evaluations of alternatives are possible.
- Expedient implementation, including land acquisition, regulatory permitting, and construction of expansion projects certified by the SPP Board of Directors.
- Detailed power system models of their transmission systems and provide updates to their models via a password protected web based application;
- Data regarding the design and operation of their transmission facilities;
- Their FERC Form 715;
- Their individual company-specific planning criteria; and
- Submit their five-year transmission construction plans to the Transmission Provider.

Owners of Transmission Facilities

- Owners of transmission facilities shall provide to the Transmission Provider modeling data for power flow, short-circuit and stability analysis.
- Owners of transmission facilities shall provide the Transmission Provider detailed power system models of their transmission systems and provide updates to their models via a password protected web based application.
- Owners of transmission facilities shall provide data regarding the design and operation of their transmission facilities to the Transmission Provider.
- Owners of transmission facilities shall provide their FERC Form 715 to the Transmission Provider.

- Owners of transmission facilities shall provide their individual company-specific planning criteria to the Transmission Provider.
- Owners of transmission facilities shall provide five –year transmission construction plans
- Owners of transmission facilities shall provide planning grade cost estimates and schedules for upgrades in the SPP Transmission Expansion Plan in a timely manner.

Transmission Customers

- Network customers shall provide the Transmission Provider an update of the information on its Network Integration Transmission Service application with a ten year forecast of summer and winter load at each delivery point and ten year projection of network resources and with any other information that has changed from the original application.
- Point-to-point transmission customers shall provide to the Transmission Provider their good faith projections on their need for service including transmission capacity, duration and points of delivery and receipt over the ten year planning horizon.
- Customers with existing and planned demand response resources shall provide information on such resources and their impacts on demand and peak demand.

Stakeholders with Demand Response Resources

- Stakeholders with demand response resources shall provide to the Transmission Provider details concerning existing and proposed demand response resources if they wish to have them considered in the development of the SPP Transmission Expansion Plan.

Neighboring Transmission Providers and RTOs

- In accordance with applicable agreements and Section XI of Attachment O of the Tariff, the Transmission Provider shall exchange with neighboring Transmission Providers and RTOs the data required for the development of power flow cases, short-circuit cases and stability cases over the ten year planning horizon.

Stakeholder Access to Transmission Planning Information

- The planning information, data, and models provided pursuant to Section X of Attachment O of the OATT shall be sufficient to allow parties to replicate results of the planning studies.

- The Transmission Provider shall provide a secure web-based workspace for hosting and sharing planning information, data, and models.
- The secure web-based workspace shall be password protected and require CEII clearance in accordance with Section X.8 of Attachment O of the OATT.
- Instructions to obtain access to the Transmission Provider's power flow models are posted on the SPP website at:
- Instructions to obtain copies of the Transmission Provider's transmission planning maps are posted on the SPP website at:

<http://www.spp.org/section.asp?pageID=108>

Confidentiality Requirements

- The Transmission Provider shall make all reasonable efforts to preserve the confidentiality of information in accordance with the provisions of the OATT and the Membership Agreement.
- For those entities that have executed a confidentiality agreement, the Transmission Provider shall provide password protected access to confidential information related to the SPP Transmission Expansion Plan and the underlying studies and models via the SPP website.
- For those entities that have executed a confidentiality agreement, the Transmission Provider shall provide password protected access to confidential information related to the SPP Transmission Expansion Plan and underlying studies and models via the SPP website.
- The form of confidentiality agreement is posted on the SPP website at:
<http://www.spp.org/publications/ConfidentialityMDWG.pdf>
- Resource specific data shall not be made available by the Transmission Provider if the data has been designated confidential by the data provider or if the data can be used to:
 - Determine security constrained unit commitment and economic dispatch for resources; or
 - Perform an economic evaluation of costs and benefits.
- Other transmission planning information shall be posted on the SPP website and may be password protected, as appropriate.

- Confidentiality agreements shall be required for SPP Members and Market Participants to receive data where the owner of the data has given permission to the Transmission Provider to release the data.

Critical Energy Infrastructure Information (CEII) Requirements

- The Transmission Provider shall take appropriate steps to protect CEII information.
- The Transmission Provider shall screen SPP Members and Market Participants are screened prior to receiving access to CEII information. Individuals that do not belong to a confirmed pre-screened SPP Member or Market Participant are directed to the Commission's website for instructions for access to CEII information:

<http://www.ferc.gov/legal/ceii-foia/ceii.asp>

- For those entities that have met the CEII requirements in Section X.8.b of Attachment O of the OATT, the Transmission Provider shall provide password protected access to CEII information related to the SPP Transmission Expansion Plan and the underlying studies and models via the SPP website.
- The Transmission Provider shall follow the guidelines set forth by the Commission to flag data which shall be treated as CEII sensitive.

Regional Planning Groups

Regional Planning Groups are responsible for providing the required base power system models needed by TOs, SPP, and other ISOs/RTOs to perform the required Intra Transmission Owner, Intra-SPP, and Inter-RTO Interconnection and expansion study assessments. In accordance with Article 7.0 of the SPP Bylaws, any regulatory agency having utility rates or services jurisdiction over a SPP Member may participate fully in all SPP planning activities

Transmission Working Group (TWG)

- The purpose of the TWG is to provide technical advice and assistance to the Transmission Provider in all aspects of the regional, sub-regional and local planning functions, including but not limited to:
 - The Review and development of coordinated planning among the Transmission Owners and the Transmission Provider;
 - Review and development of regional planning criteria;
 - Review and development of Available Transfer Capability related calculation criteria;
 - Review and development of transmission rating criteria; and
 - Ensure Transmission Provider compliance with NERC Reliability Standards concerning transmission assessment, transfer capability and ratings of transmission facilities.
 - TWG meetings shall be open to all entities.
 - The TWG representation shall be appointed and chaired in accordance with Article 3.0 of the SPP Bylaws. The SPP Bylaws are posted at:

<http://www.spp.org/section.asp?group=215&pageID=27>
 - Voting in the TWG shall conform to Article 3.9 of the SPP Bylaws.
 - The Transmission Owners and transmission dependent utilities shall provide representatives to the TWG to provide the data, information, and technical support necessary for the Transmission Provider to perform studies as required by the planning process and to develop the STEP.
 - TWG meetings shall be held quarterly and additional meetings, web conferences and teleconferences shall be scheduled as needed. Teleconference capability shall be provided for TWG meetings. Planning summit web conferences shall be held as needed.

- Notice of the TWG meetings, teleconferences and web conferences shall be posted on the SPP website and distributed via email distribution lists.
- TWG meeting agendas and minutes shall be posted on the SPP website.

Stakeholders (Including Regional State Committee)

Stakeholders, including representatives of the Regional State Committee (RSC), may provide SPP with critical stakeholder input and review of STEP projects as they are developed and updated. Input from the RSC assists SPP in the development of realistic transmission expansion projects and alternatives to meet their citizens' needs, as well as those of neighboring regions.

SPP planning meetings are open to all stakeholders. Stakeholders are responsible for attending these meetings as nonmember participants, as their interest dictates. Forums such as web conferences, e-mail, e-rooms, and open discussion periods allow non-members to effectively participate in the SPP planning process.

Generation Owners

Generator Owners are responsible for providing modeling data used by the SPP and Transmission Owners for load flow, short circuit, dynamic stability, and other future studies as applicable. Generation Owners are responsible for meeting regulatory reliability standards and planning reliability clauses in their TO and SPP Agreements, as applicable. Generator Owners are encouraged to participate in the planning process by participating in the stakeholder input and review phases of the planning process.

Generator Owners

- Generator owners shall provide to the Transmission Provider modeling data for power flow, short-circuit and stability analysis.
- Generator owners shall provide to the Transmission Provider data for planned additions or upgrades, including status and expected in-service dates, planned retirements and environmental restrictions.
- Generator owners shall provide to the Transmission Provider modeling data to perform economic planning studies in accordance with section IV of Attachment O of the OATT.
- Data required to model generating units for the economic planning studies is documented in the Transmission Network Economic Modeling and Methods manual posted on the SPP website at:

<http://www.spp.org/section.asp?group=701&pageID=27>

Load Serving Entities

Load Serving Entities are responsible for annually making and providing SPP with timely, accurate forecasts of Network Load. Load Serving Entities may further involve themselves in the SPP planning process by participating in the stakeholder input and review phases of the planning process.

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Transmission Customers

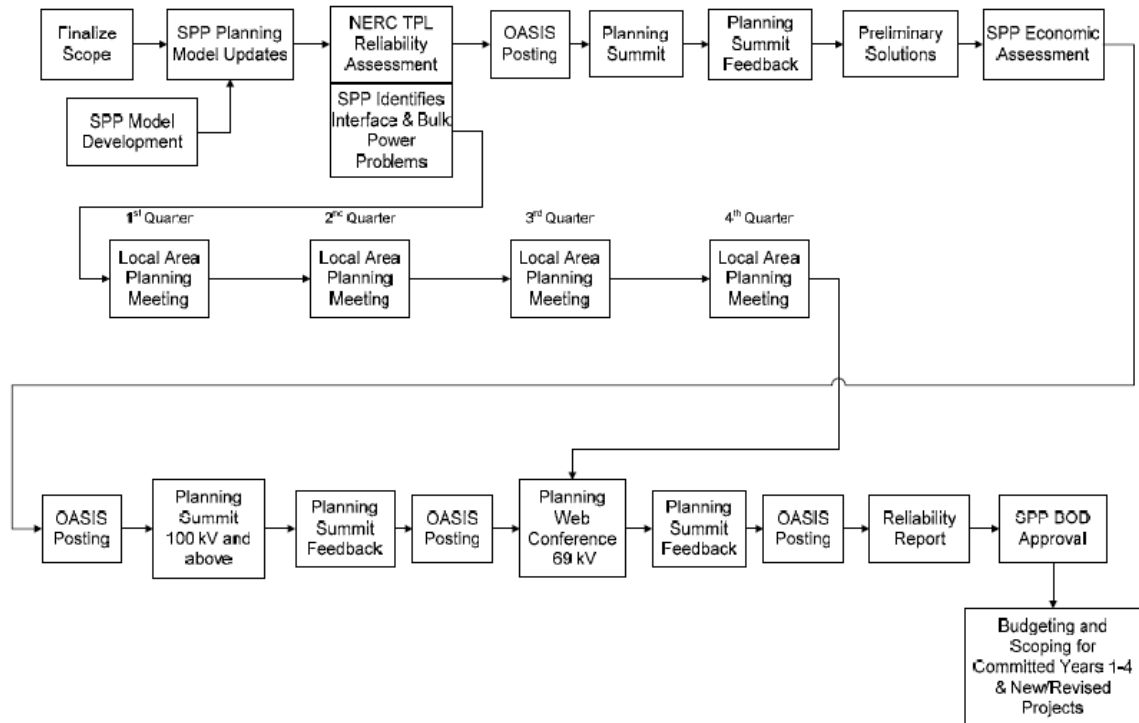
- Network Customers shall provide the Transmission Provider an update of information on its Network Integration Transmission Service application with a ten year forecast of summer and winter load at each delivery point and ten year projection of network resources with any other information that has changed from original application.
- Point-point Transmission Customers shall provide to the Transmission Provider their good faith projections of their need to service including transmission capacity, duration and point of delivery and receipt over the ten year planning horizon.
- Transmission Customers with existing and planned demand response resources shall provide information on such resources and their impacts on demand and peak demand.

Other RTOs/regions

SPP coordinates with neighboring ISOs/RTOs and nearby regions to develop and implement the STEP. SPP includes updated models from neighboring ISOs/RTOs and nearby regions. Neighboring ISOs/RTOs and nearby regions are encouraged to participate in the SPP planning process.

Process Overview

SPP Reliability and Economic Planning Process (12 months)



Commencement of the Process

- At the beginning of each annual planning cycle, the Transmission Provider shall initiate the stakeholder process to develop the annual STEP.
- Notice of commencement of the process shall be posted on the SPP website and distributed via email distribution lists.

Preparation of the Assessment

- For each annual planning cycle, the Transmission Provider shall develop the assessment study scope with input from the stakeholders.
- The assessment study scope shall specify the methodology, criteria, assumptions, and data to be used to develop the list of Reliability and Economic Upgrades.
- The Transmission Provider, in consultation with the stakeholder working groups, shall finalize the assessment study scope.

- The assessment study scope shall be posted on the SPP website and will be included in the published annual STEP report.
- In accordance with the assessment study scope, the Transmission Provider shall prepare an assessment of the Transmission System on the basis of maintaining the reliability of the SPP Region and identifying economic opportunities to reduce congestion.
- The Transmission Provider shall present the reliability assessment and economic assessment to the stakeholder working groups and the planning summit.
- The Transmission Provider shall solicit feedback on the reliability assessment and economic assessment, including potential alternatives for improvements to the Transmission System, from the stakeholder working groups and through the stakeholders attending the various planning summits. The Transmission Provider will also include feedback from stakeholders through other meetings, teleconferences, web conferences and via email or secure web-based workspace.

Analysis of Transmission Alternatives

- The Transmission Provider shall perform the required studies to analyze the potential alternatives for improvements to the Transmission System, provided by the Transmission Provider and by the stakeholders, in order to address the reliability and economics identified in the assessments.
- For all potential alternatives provided by the stakeholders, including reliability upgrades that Transmission Owners propose to address violations of company-specific planning criteria pursuant to Section III.5.b Attachment O of the OATT, the Transmission Provider shall determine if there is a more comprehensive regional solution to address the reliability and economic needs identified in the assessments.
- The Transmission Provider shall make a comprehensive presentation of the viable potential transmission solutions to the stakeholder working groups and at a planning summit meeting or web conference. The presentation shall include a discussion of the Transmission Provider and stakeholder alternatives considered and reasons for choosing the particular solutions.
- The Transmission Provider shall solicit feedback on the solutions from the stakeholder working groups and through the stakeholders attending the various planning summits. The Transmission Provider will also include feedback from stakeholders through other meetings, teleconferences, web conferences and via email or secure web-based workspace.
- Screening and analysis of potential economic upgrades shall be performed in accordance with Section IV Attachment O of the OATT.

Development of the Recommended STEP

- Upon completion of the analysis, studies and stakeholder review and comment on the results, the Transmission Provider shall prepare a draft list of all projects for review by the stakeholders.
- The Transmission Provider shall post the draft STEP on the SPP website at:

<http://www.spp.org/section.asp?pageID=115>

- Upon completion of the analysis, studies, and stakeholder comments on the results, the Transmission Provider shall prepare a draft list of all projects for review by stakeholders. The Transmission Provider shall post the draft project list on the SPP website.
- Upon posting of the draft STEP, the Transmission Provider shall invite written comments on the draft STEP to be submitted to the Transmission Provider.
- The Transmission Provider will include feedback from stakeholders through other meetings, teleconferences, web conferences and via email.
- The Transmission Provider shall review the draft STEP with the TWG, the MOPC and the Regional State Committee; and shall seek endorsement and/or comments from these groups as appropriate (i.e. the RSC will review rather than endorse the STEP).
- Considering the input from the stakeholders through this review process, the Transmission Provider shall prepare a recommended list of reliability and economic projects for review and approval.

Disclosure of the STEP

- The Transmission Provider shall simultaneously disclose planning information and the proposed list of reliability and economic projects and the underlying studies by:
 - Providing all stakeholders equal access, notice and opportunity to participate in planning summits, the TWG meetings and the sub-regional planning meetings as well as any associated web conferences or teleconferences as set forth in Section III.1 of this Attachment O; and providing for the contemporaneous availability of such meeting handouts on the SPP website
 - The related study results, criteria, assumptions and data underlying the studies used to develop the list of reliability and economic projects shall be posted on the SPP website, with password protected access if required to preserve the confidentiality of information in accordance with the provisions of the OATT and the Membership Agreement and to address CEII requirements. The CEII compliant redacted version of the STEP shall be posted on the SPP website.

Approval of the SPP Transmission Reliability and Economic Projects

- The annual list of reliability upgrades must be endorsed by the MOPC and approved by the SPP BOD.
- The annual list of potential economic Upgrades must be endorsed by the MOPC and the SPP BOD. When these projects have been endorsed they will be included in the STEP as Economic Upgrades.
- The list of projects shall be posted on the SPP website by the Transmission Provider. The Transmission Provider shall, in addition to the posting, e-mail notice of such posting

to the stakeholders at least ten days prior to a meeting at which the SPP BOD is expected to take action on accepting or modifying the list.

- The list of reliability and Economic Upgrades may be modified throughout the year by the SPP BOD provided the notice of such action shall be posted and emailed pursuant to this Section VI of attachment O of the OATT.

The SPP Transmission Expansion Plan

The SPP Transmission Expansion Plan shall be a comprehensive listing of all transmission projects in the SPP for the standard planning horizon. Projects included in the SPP Transmission Expansion Plan are projects: 1) required to satisfy requests for transmission service; 2) required to satisfy requests for generation interconnection; 3) identified reliability projects; 4) endorsed Economic Upgrades; and 5) Requested Upgrades. A specific endorsed Economic Upgrade or Requested Upgrade will be included in the Transmission System planning model upon execution of contract that financially commits a Project Sponsor to such upgrade or when such upgrade is otherwise funded pursuant to the OATT. To be included in SPP Transmission Expansion Plan, each project must have been endorsed or approved through its proper process. Each of these sources of upgrades has its own evaluation and approval process. The results of from all these sources are collected and reported in the annual SPP Transmission Expansion Plan which gives a ten (10) year projection of the transmission changes in the SPP Region.

The SPP Transmission Expansion Plan shall be presented to the SPP Board of Directors at least once a year in conjunction with the presentation of the list of reliability upgrades and Economic Upgrades. Approval of the reliability projects and the endorsement of the other projects contained in the SPP Transmission Expansion Plan by the SPP Board of Directors shall certify a regional plan for meeting the transmission needs of the SPP Region. The SPP Board of Directors may modify reliability upgrades and Economic Upgrades to the SPP Transmission Expansion Plan Throughout the year in accordance with Section VII of the Attachment O of the OATT.

- Updates to the SPP Transmission Expansion Plan
 - Modifications to the SPP Transmission Expansion Plan may be made between the annual approvals as required to maintain system reliability and to meet new business opportunities as they are identified.
 - The Transmission Provider shall work with the stakeholders on an on-going basis throughout the year analyzing any newly identified issues and incorporating any necessary adjustments to the SPP Transmission Expansion Plan on an out of cycle basis.
 - On a quarterly basis, the Transmission Provider shall post any modifications to the SPP Transmission Expansion Plan on the SPP website.
 - The modifications shall be reviewed by the stakeholders and the Regional State Committee, endorsed by the stakeholder working groups, and approved or endorsed

by the SPP Board of Directors, in accordance with Sections V.5 and VI of this Attachment O, respectively.

- Removal of an Upgrade from the SPP Transmission Expansion Plan.

The Transmission Provider, in consultation with the stakeholders in accordance with Sections VI.5, VII and VIII, VIII of the Attachment O of the OATT, may remove an upgrade from an approved SPP Transmission Expansion Plan. A Transmission Owner that has incurred costs related to the removed upgrade will be reimbursed for any expenditure pursuant to Section VIII of Attachment J to the OATT

- Status of Upgrades Identified in the SPP Transmission Expansion Plan
 - The Transmission Provider shall track the status of planned system upgrades to ensure that the projects are built in time or that acceptable mitigation plans are in place to meet customer and system needs.
 - On a quarterly basis, at a minimum, the Transmission Provider shall:
 - Report to the Markets and Operations Policy Committee, the Regional State Committee and the SPP Board of Directors on the status of the upgrades identified in the SPP Transmission Expansion Plan; and
 - Post the status of the upgrades on the SPP website.

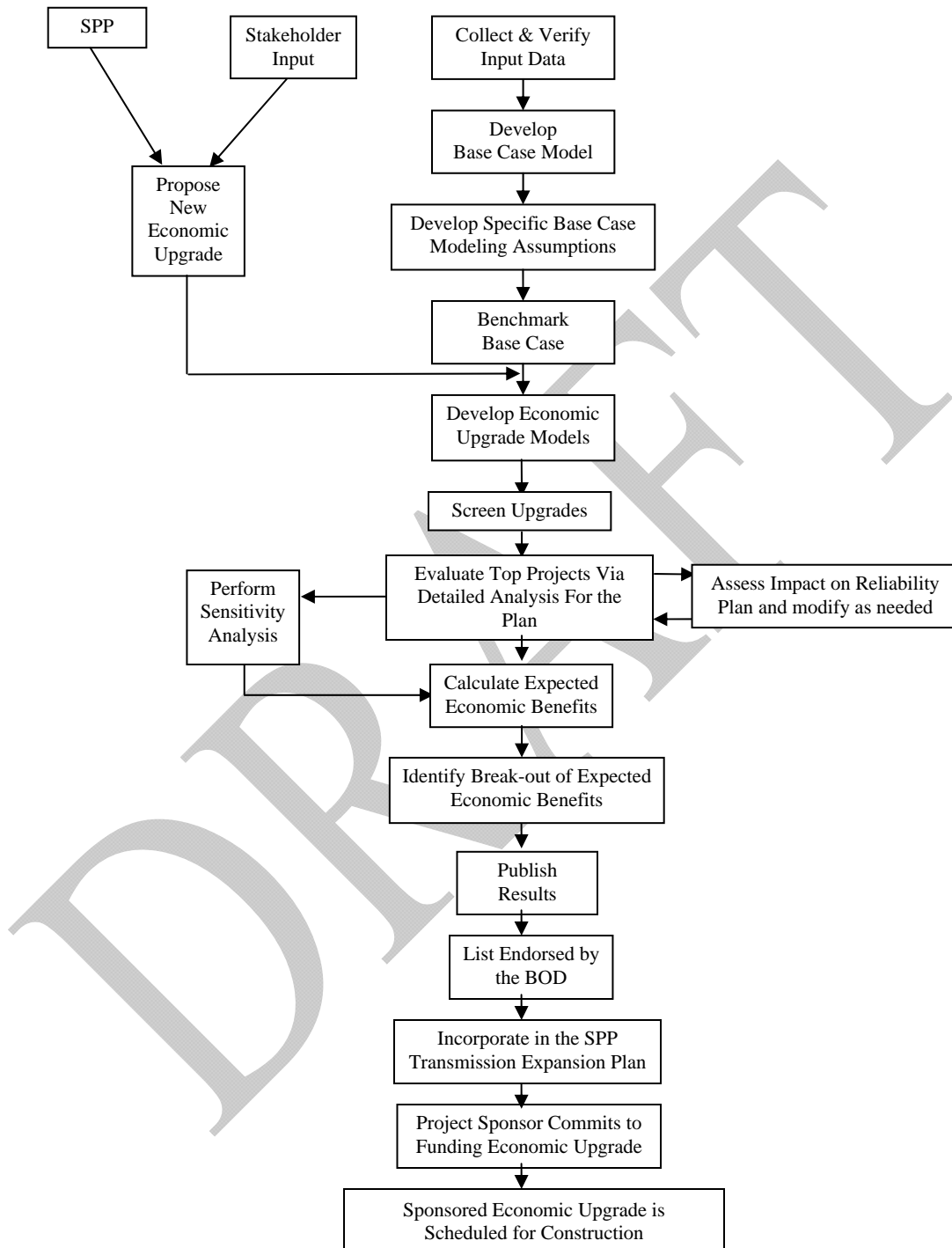
Study Process for Economic Assessment and Economic Planning Studies

Economic upgrades are those transmission upgrades and additions that have been shown to provide customers access to generation options such that the potential energy savings exceed the cost of the proposed transmission upgrade(s). This section describes the process of determining how these upgrades are identified and added to the STEP.

- Overview of the Process

Following is a flow chart of the process to perform the economic assessment and economic planning studies.

Economic Assessment and Economic Planning Study Process Flow Chart



- Economic Assessment
 - The Transmission Provider shall perform an economic assessment as part of the planning process described in Section VI.4.e of the Attachment O.
 - The economic assessment shall be based on the most current planning model(s) and shall address:
 - Congestion within the SPP Region;
 - Congestion between the SPP Region and other regions and balancing areas.

- High Priority Studies
 - The Transmission Provider shall perform high priority studies in accordance with the Attachment O and the Transmission Network Economic Modeling & Methods manual which shall be maintained on the SPP website.
 - Potential Balanced Portfolios, as developed through the process specified in Sections IV.4 through IV.7, shall be considered to be high priority studies.
 - The stakeholders may request high priority studies. Annually, the costs of up to three high priority studies requested by the stakeholders and performed by the Transmission Provider shall be recovered pursuant to Schedule 1-A of the OATT. A high priority study of a potential Balanced Portfolio initiated by the Transmission Provider will not be considered a stakeholder request pursuant to this Section IV.3.c.
 - The Transmission Provider, in consultation with the stakeholders, shall develop the scope for each high priority study and post the scope(s) on the SPP website.
 - Each study shall include:
 - Quantification of benefits and costs in accordance with this Attachment O and the Transmission Network Economic Modeling and Methods manual; and
 - An analysis of the sensitivity of the economics of the upgrades included in the high priority study to changes in assumptions.
 - The Transmission Provider shall solicit input from the stakeholders and the Regional State Committee regarding the appropriate sensitivity analyses to be performed.
 - For each high priority study the Transmission Provider shall publish a report, including but not limited to, the study input assumptions, the estimated cost of the upgrades included in the high priority study, the expected economic benefits of the upgrades, and identify reliability impacts, if any, of the upgrades. The report and related studies and the criteria, assumptions and data underlying the report shall be posted on the SPP website, with password protected access if required to preserve the confidentiality of information in accordance with the provisions of the OATT and the SPP Membership Agreement and to address Critical Energy

- Infrastructure Information (CEII) requirements. The CEII compliant redacted version of the report shall be posted on the SPP website. The redacted version shall include instructions for acquiring the complete version of the report.
- Identification of Potential Economic Upgrades

The Transmission Provider shall solicit suggestions of potential economic upgrades as outlined in the study scope. The Transmission Provider may also suggest potential economic upgrades. The Transmission Provider shall post the list of all potential economic upgrades on the SPP website, subject to confidentiality requirements. Suggestion of potential economic upgrades does not require the submission of a specific request for transmission service or for interconnection service.

- Screening Analysis of Potential Economic Upgrades
 - The Transmission Provider shall perform a screening analysis of the potential economic upgrades.
 - To perform the screening analysis, the Transmission Provider shall estimate the cost and the benefit of each potential economic upgrade.
 - The screening analysis shall establish a relative ranking of all potential economic upgrades based on the ratio of the estimated benefit to the estimated cost.
 - The Transmission Provider shall post a list of all of the potential economic upgrades screened and the results of the screening analysis, including their relative rankings, on the SPP website.
 - The Transmission Provider shall discuss the results of the screening analysis with the stakeholder working groups and with stakeholders at a planning summit or web conference.

- Evaluation of Potential Balanced Portfolios
 - The Transmission Provider shall solicit input from stakeholders on combinations of potential economic upgrades to be evaluated as potential Balanced Portfolios.
 - Each economic upgrade to be included in a potential Balanced Portfolio:
 - Must include a 345 kV or higher voltage facility;
 - May include lower voltage transmission facilities needed to integrate the 345 kV or higher facilities and achieve the benefits; however, the cost of the lower voltage transmission facilities cannot exceed the cost of the 345 kV or higher facilities included in the economic upgrade; and
 - An economic upgrade that includes lower voltage transmission facilities for which the cost of such facilities exceeds the cost of the 345 kV or higher facilities constituting the economic upgrade may be included in the evaluation of a potential Balanced Portfolio, if a Project Sponsor agrees to bear the portion of the cost of the lower voltage facilities that is in excess of the cost of the 345 kV or higher facilities.
 - Will include an evaluation of the costs of the upgrades, including any cost impacts potentially allocable to the Transmission Provider or a Zone(s) from third party upgrade(s) required to relieve congestion on a neighboring system due to the construction of the potential Balanced Portfolio.
 - The Transmission Provider shall determine for each Zone the net present value of the revenue requirements of each potential Balanced Portfolio as follows:
 - The revenue requirements for each potential Balanced Portfolio shall be calculated as if all of the upgrades associated with the potential Balanced Portfolio are simultaneously available to the power system. This requirement is for evaluation purposes only and shall not restrict the timing of the construction of individual upgrades within a Balanced Portfolio approved by the SPP Board of Directors.
 - Based on input from the Transmission Owners and other pertinent information, the Transmission Provider shall estimate the construction costs of each upgrade in the potential Balanced Portfolio.
 - For each upgrade in the potential Balanced Portfolio, the Transmission Provider shall use the transmission fixed charge rate(s) for the appropriate Transmission Owner(s) to estimate the revenue requirements. In each annual planning cycle, the Transmission Owner shall supply its fixed charge rate to the Transmission Provider.
 - The fixed charge rate(s) shall take account of all costs necessary to support the upgrade in the potential Balanced Portfolio, including but not limited to, operation and maintenance expenses, depreciation, property and payroll taxes, income taxes, if applicable, return on investment and any

other factors affecting the revenue requirement associated with the upgrade.

- The revenue requirements also shall include any specific costs that are projected to be incurred by the Transmission Provider or a Zone(s) as a result of third-party impacts due to one or more upgrades within a proposed Balanced Portfolio.
 - The revenue requirements for the potential Balanced Portfolio shall equal the sum of the revenue requirements of the upgrades that comprise the potential Balanced Portfolio.
 - The Transmission Provider shall estimate the cost for each Zone by allocating the revenue requirements for the potential Balanced Portfolio to each Zone based on its Region-wide Load Ratio Share forecasted over the ten year period analyzed.
 - If any costs of an upgrade in the potential Balanced Portfolio will be borne by other funding mechanisms, such costs shall not be included in the determination of the net present value of the revenue requirements for the potential Balanced Portfolio.
- The Transmission Provider shall determine for each Zone the net present value of the benefits of each potential Balanced Portfolio as follows:
- The benefits from each potential Balanced Portfolio shall be calculated as if all of the upgrades associated with the potential Balanced Portfolio are simultaneously available to the power system.
 - The Transmission Provider shall use an adjusted production cost metric to analyze the benefits of the potential Balanced Portfolio, where adjusted production cost is the production cost minus revenues from sales plus cost of purchases. As described in Section IV.8 of this Attachment O, the Transmission Provider shall continue to evaluate and explore with the stakeholders any additional metrics and criteria which have quantifiable economic effects.
 - The adjusted production cost benefit for each Zone shall equal the difference between the adjusted production cost with the potential Balanced Portfolio modeled and without the potential Balanced Portfolio modeled.
 - The Transmission Provider shall estimate the annual benefits for each Zone over the same ten-year period as used to determine the costs by calculating the annual benefits for at least three specific years in the ten-year time period and interpolating the annual benefits for the remaining years.
- A potential Balanced Portfolio shall meet the following conditions:
- Cost Beneficial: The sum of the benefits of the potential Balanced Portfolio determined in Section IV.6.d must equal or exceed the sum of the costs determined in Section IV.6.c; and

- **Balanced:** For each Zone, the sum of the benefits of the potential Balanced Portfolio determined in Section IV.6.d must equal or exceed the sum of the costs determined in Section IV.6.c. Additionally, the balance may be achieved through the provisions set forth in Section IV.7.
- In developing a potential Balanced Portfolio, the Transmission Provider shall timely publish a report, including but not limited to, the study input assumptions, the estimated costs included in the potential Balanced Portfolio, and the expected economic benefits of the potential Balanced Portfolio. With regard to such report, the Transmission Provider shall comply with the information sharing and reporting requirements in Part IX (Information Exchange) and Section IV(3) (High Priority Studies) of this Attachment O, including the requirements for treatment of confidential information.
- **Options for Achieving a Balanced Portfolio**
 - Section IV.7 of this Attachment O sets forth provisions to achieve a Balanced Portfolio when there are deficient Zones. A deficient Zone is a Zone where the costs allocated to the Zone in Section IV.6.c exceed the benefits allocated to the Zone in Section IV.6.d, including any additional costs or benefits derived from the application of the provisions in this Section IV.7.
 - In order to achieve a Balanced Portfolio, the Transmission Provider may include transmission upgrades that do not adhere to the voltage requirements of Sections IV.6.b.i and ii of this Attachment O.
 - If including the lower voltage transmission facilities does not achieve a Balanced Portfolio, the Transmission Provider may balance the portfolio by transferring a portion of the Base Plan Zonal Annual Transmission Revenue Requirement and/or the Zonal Annual Transmission Revenue Requirement from the deficient Zone(s) to the Balanced Portfolio Region-wide Annual Transmission Revenue Requirement. Transmission Provider shall include the following constraints in this assessment:
 - Limit the amount to be transferred from the Base Plan Zonal Annual Transmission Revenue Requirement and/or the Zonal Annual Transmission Revenue Requirement to the Balanced Portfolio Region-wide Annual Transmission Revenue Requirement to the minimum amount that will balance the portfolio over the ten-year period analyzed;
 - Transfer from the Base Plan Zonal Annual Transmission Revenue Requirement first, then, if necessary, transfer from the Zonal Annual Transmission Revenue Requirement; and
 - For each Zone, meet the conditions specified in Section IV.6.e.ii of Attachment O.

- Development of Additional Benefit Metrics
 - Transmission Provider shall continue to evaluate and explore with the stakeholders via the transmission planning process any additional metrics and criteria which have quantifiable economic effects, such as:
 - Reduction in system losses;
 - Differing environmental impacts;
 - Improvement to capacity margin and operating reserve requirements;
 - Energy, capacity and ancillary service market facilitation;
 - Increased competition in wholesale markets;
 - vi) Reliability enhancement, including storm hardening and black start capability; and
 - Critical infrastructure and homeland security.
 - Any subsequent adjustment to the metrics and criteria for evaluating potential Balanced Portfolios developed by the Transmission Provider, with input from the stakeholders, shall be proposed through OATT amendments.

Sponsored Upgrades

Any entity may request that a Sponsored Upgrade be built. SPP will evaluate the impact of any Sponsored Upgrade on Transmission System reliability and identify any necessary mitigation of these impacts. Such entity must be willing to assume the cost of such Sponsored Upgrade, study costs, and any cost associated with such necessary mitigation. The proposed Sponsored Upgrade will be submitted to the proper stakeholder working group for their review as a part of the transmission planning process.

Model Development

SPP has long been involved in the development and coordination of large-scale power models with neighboring regions as part of the NERC Multiregional Modeling Working Group (MMWG) effort. SPP members rely on SPP to coordinate and create power flow, short circuit, and stability models for use by SPP and its members.

SPP installed the ODMS/Models On Demand (MOD) package to improve the efficiency and effectiveness of the model building and maintenance processes needed to support the various applications. SPP is working with others, e.g., PJM, to improve the functionality and capabilities of MOD. MOD will help create and organize models, as well as the several levels of model data for SPP members.

SPP continues to work with the MMWG to improve the SPP Model Development Working Group (MDWG) model-building effort to collect and maintain additional modeling data and details based on consistent definitions in a common format to benefit all model users.

SPP is in the process of improving and expanding the data collection, project tracking, model

building, and maintenance efforts associated with the MDWG. Significant progress has been made recently in the coordinated model building and analysis with neighboring regions. The MMWG and MDWG manuals are attached as Appendices B and C, respectively.

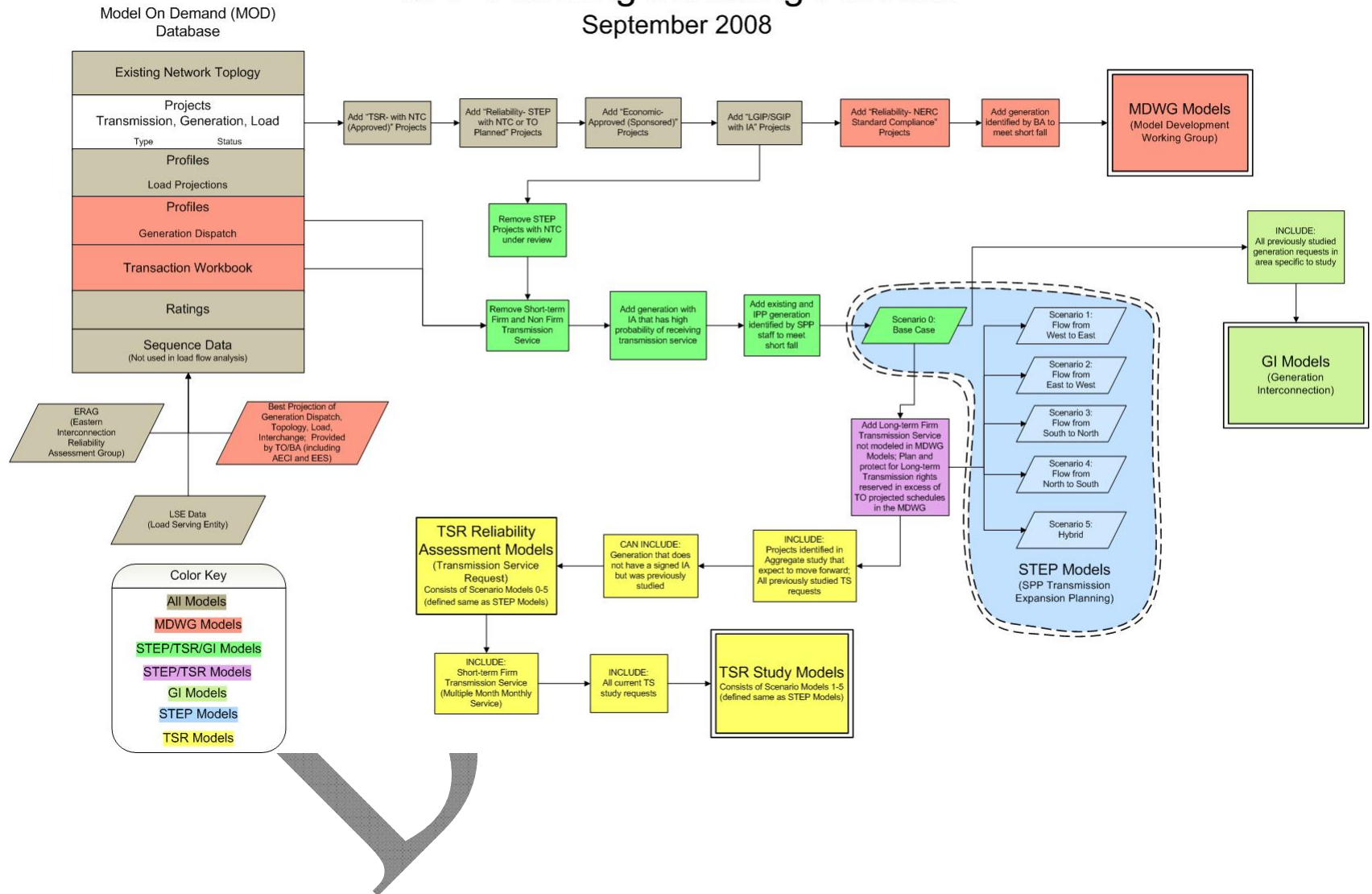
The STEP Reliability Assessment Model Building

- Model Building begins in January and starts with the SPP MDWG spring case topology of that same year of the study. Transmission owners and balancing authorities provide generation dispatch and load information for the years to be studied.
- Network changes are entered into MOD by the transmission owners at which time the Type and Status of the network upgrades is identified. The Type and Status are used to identify which SPP model set the network change will be entered. Appendix A of this manual provides the listing of the description of the Types and Status. Appendix B of this report provides table providing information on load, generation dispatch and ratings included in SPP models. Following is flow chart of SPP model process.

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SPP Planning Modeling Process

September 2008



- Included in the STEP reliability assessment models is all topology changes that have a NTC or LOA from SPP that originated from the Aggregate Study or the STEP reliability assessment except projects that have been requested to be removed from the base STEP reliability models and have been through a stakeholder review process as described below:
 - Stakeholder requests SPP project with NTC/LOA to be removed from the base STEP model and the reason why they would like the project excluded from the STEP base model and re-evaluated.
 - SPP Tariff Study Group identifies any Transmission Service that may be dependent upon the project
 - SPP Planning Group would identify any concerns in connection with removing the project from the base model and re-evaluating the need
 - The list of projects with NTC/LOA to be re-evaluated is provided to stakeholders where they 15 day to review and provide comments.
- Generation interconnection facilities are included in the STEP model if they have an executed Interconnection Agreement (IA) and not on suspension. Generation capacity does not get included into the STEP until there is an executed transmission service agreement
- Transmission service that is in the STEP models
 - Only long term firm service with transmission service agreements are included in the STEP model with two exceptions: 1) service from new generation that have a high probability of going into service and also getting an executed transmission service agreement 2) Shortfall transactions to make generation and load match
 - Including service from new generation without TSR executed contract have a high probability of going into service and also getting an executed transmission service agreement
 - A formal request sent to SPP requesting the generation capacity be included into the STEP
 - Have a signed IA not on suspension
 - Acquired the funding for major equipment
 - In the Aggregate Study and completed facility study waiting for results without third party impacts (eliminates generators that may drop out as result of changes in study results)
 - Acquired air and environmental permits where applicable
 - Started construction with major equipment awarded
 - Shortfall between interchange, generation, and load, the following process will be used:
 1. Exhaust the dispatchable generation of the network customer
 2. Exhaust the Independent Power Producers (IPP) dispatchable generation in the same model area
 - After the above generation was exhausted, the remaining unused, dispatchable generation within SPP footprint would be dispatched on a pro rata basis.
 - SPP uses six scenarios to evaluate the reliability of the transmission system and 5 transaction scenarios

- Scenario Zero or Adjusted MDWG start with Transmission Service modeled in the MDWG. Either Firm SPP Regional and TO OATT Provider Service or non-SPP OATT Provider Service. All SPP Regional OATT Provider service identified is verified Firm to the extent possible and removed or adjusted otherwise.
- SPP has an obligation to Plan the transmission system for all SPP sold Transmission Service. SPP uses five transaction Scenarios to meet this obligation. SPP builds scenarios in a manor to minimize counter balancing Transmission service. SPP uses the five transaction Scenarios to model SPP Regional OATT Provider Firm transmission Service Sold not modeled in the MDWG.
- Firm Transmission Service not modeled in the MDWG includes designated network resource and point-to-point HVDC tie adjustments, inter-area designated network resources at reserved amounts, intra-area designated network resource not in transmission owner or transmission dependent user dispatch order at reserved amounts, intermittent wind generation at reserved amounts, point-to-point either inter-regional, intra-regional, or intra-area, point-to-point at reserved amounts, rollover rights of all of the above, and aggregate transmission service sold during the planning year. New Designated Network Resources with signed service agreements studied during the planning year should be incorporated in the transmission owner or transmission dependent user dispatch orders with the guidance of the transmission owner or transmission dependent user.
- Transaction scenario model determination is done by using proxy flowgates. Proxy flowgates used to determine scenarios are selected based on greatest historic and present Firm MWs Curtailed by NERC TLR. Historic SPP NERC TLR can be downloaded at <http://sppoasis.spp.org/documents/tlr/LLR%20Report.xls>
- 2006 STEP and 2007 STEP Scenario 1-West to East/Scenario 2-East to West proxy flowgate was a combination of opposing flowgates SPHWMCSUMEMC (East to West) and TAHH59MUSFTS (West to East).
- 2008 STEP Scenario 1-West to East/Scenario 2-East to West proxy flowgate is HPPVALPITVAL (West to East).
- 2006 – 2008 STEP Scenario 3-South to North/Scenario 4-North to South proxy flowgate is BVSNBVNESDEL (South to North)
- Process takes the average of seasonal TDF on proxy flowgates to determine scenario to be modeled depending on whether positive or negative. No TDF threshold is applied.
- Proxy Flowgate Exceptions include the following: ERCOTN_No_So service is forced in East to West and North to South Scenarios in conjunction with SPS Imports. ERCOTE_E_W service is forced on in East to West and North to South Scenarios in addition to modeling based on Proxy Flowgate impacts. SPS Imports are forced in East to West and North to South with exception of LAMAR DC Tie. SPS Exports are forced in West to East and South to North with exception of LAMAR DC Tie. LAMAR DC Tie modeled based on Proxy

Flowgate impacts. Intermittent Wind Generation at Reserved Amount is not included in Scenario 5. Base Load DNR or DR included in all scenarios.

- Scenario 1 includes SWPP OASIS transmission requests not already included in the SPP 2008 MDWG Quarter 2 Base Cases flowing in a West to East direction with ERCOTN HVDC Tie South to North, ERCOTE HVDC Tie East to West, SPS exporting, and SPS exporting to the Lamar HVDC Tie.
- Scenario 2 includes transmission requests not already included in the SPP 2008 MDWG Quarter 2 Base Cases flowing in an East to West direction with ERCOTN HVDC tie North to South, ERCOTE HVDC tie East to West, SPS importing, and SPS importing from the Lamar HVDC tie.
- Scenario 3 includes transmission requests not already included in the SPP 2008 MDWG Quarter 2 Base Cases flowing in a South to North direction with ERCOTN HVDC tie South to North, ERCOTE HVDC tie East to West, SPS exporting, and SPS exporting to the Lamar HVDC Tie.
- Scenario 4 includes transmission requests not already included in the SPP 2008 MDWG Quarter 2 Base Cases flowing in a North to South direction with ERCOTN HVDC tie North to South, ERCOTE HVDC tie East to West, SPS importing, and SPS importing from the Lamar HVDC tie.
- Scenario 5 includes all transmission requests not already included in the SPP 2008 MDWG Quarter 2 Base Cases with ERCOTN North to South, ERCOTE East to West, SPS importing and SPS exporting to the Lamar HVDC tie.
- The system scenarios were developed to minimize counter flows from previously confirmed, higher priority requests not included in the 2008 MDWG Quarter 2 Base Cases.

Economic Modeling

- The Economic Modeling and Methods manual provides details of building economic models. This manual is posted on the SPP website at:

<http://www.spp.org/section.asp?group=701&pageID=27>

Construction of Transmission Facilities

- The Transmission Provider shall not build or own transmission facilities. The Transmission Provider, with input from the Transmission Owners and other stakeholders, will designate in a timely manner within the STEP one or more Transmission Owners to construct, own, and/or finance each project in the plan.
- Each Transmission Owner shall use due diligence to construct transmission facilities as directed by the SPP BOD subject to such siting, permitting, and environmental constraints as may be imposed by state, local and federal laws and regulations, and subject to the receipt of any necessary federal or state regulatory approvals. Such construction shall be performed in accordance with Good Utility Practice, applicable SPP Criteria, industry standards, each Transmission Owner's specific reliability requirements and operating guidelines (to the extent these are not inconsistent with other requirements), and in accordance with all applicable requirements of federal or state regulatory authorities. Each Transmission Owner shall be fully compensated to the greatest extent permitted by the Commission for the costs of construction undertaken by such Transmission Owner in accordance with the OATT.
- A specific endorsed Economic Upgrade or endorsed Requested Upgrade will be deemed approved for construction upon execution of a contract that financially commits a Project Sponsor to such upgrade or when such upgrade is otherwise funded pursuant to the OATT.
- After a new transmission project has been accepted for construction in the STEP, required pursuant to a Service Agreement, or required pursuant to an interconnection agreement, the Transmission Provider will authorize the appropriate Transmission Owners to begin implementation of the project for which financial commitment is required prior to the approval of the next update of the STEP. If the project forms a connection between facilities of a single Transmission Owner, that Owner will be designated to provide the new facilities. If the project forms a connection between facilities owned by two different Transmission Owners or between a new facility and the facilities of a Transmission Owner, both entities will be designated to provide the new facilities. The two entities will agree between themselves how much of the project will be provided by each entity. If agreement cannot be reached, the Transmission Provider will facilitate the ownership determination process.
- A designated provider for a project can elect to arrange for another entity or another existing Transmission Owner to build and/or own the project in their place. If a designated provider or providers do not or cannot agree to implement the project in a timely manner, the Transmission Provider will solicit and evaluate proposals for the project from other entities and select a replacement designated provider.

Mitigation Plans and Transmission Operating Guides

SPP Transmission Operating Guides Review Procedure

This procedure documents the process of how a Transmission Operating Guide (TOG) shall be included in the STEP and SPP Aggregate Transmission Service Studies (ATSS). In most cases TOGs are not intended to indefinitely defer needed Transmission System upgrades. Effective TOGs shall be utilized in all transmission tariff service functions and OATT planning processes.

For a TOG to be considered for use in the STEP and ATSS as a possible mitigation plan, it shall be on file with SPP. An effective TOG must state the system conditions under which the TOG is to be used and describe, in detail, the action the operators will take. The TOG must be signed by someone in charge of operations from the Transmission Owner or transmission operator submitting the TOG.

An effective TOG shall continue to be used in evaluation of the STEP and ATSS unless the facility-owning Transmission Owner or transmission operator withdraws the TOG. In cases where the TOG is withdrawn before the TOG becomes ineffective, any Transmission System Upgrades lie with the Transmission Owner.

A new TOG provided as interim mitigation for an SPP-required project shall automatically be withdrawn when the project is completed.

A TOG is considered an effective solution for facilities that are not listed in the TOG if, in the act of implementing the TOG for the elements listed, other overloads or voltage violations are corrected.

Service Upgrades associated with new Transmission Service Requests or Designated Resources that cause a TOG to be ineffective will be classified as Base Plan Upgrades in accordance with Attachment J.

Transmission System upgrades that become necessary because a TOG has been identified to be ineffective in order to maintain the reliability of the Transmission System shall be categorized as Reliability Upgrades, utilizing the procedures of Attachment O of the OATT.

The upgrade(s) proposed to address an ineffective TOG may work towards either eliminating the TOG or the ineffectiveness of the TOG.

Effective TOGs

1. A TOG addressing Transmission System loading must include a short-term emergency rating which allows sufficient time to implement the TOG.

2. A TOG requiring generation redispatch must indicate if generator location is critical and, if so, must state in detail which units or plants will be re-dispatched. Absence of such specificity means location is not critical and generators may be selected from the fleet the entity has authority to run. The ramp rate of the generation must be capable of relieving the overload or voltage issue within the time allowed as specified in the TOG.
3. A TOG must not cause a violation elsewhere on the Transmission System.
4. A TOG addressing a voltage violation must provide for restoring minimum acceptable voltage conditions within a time frame so as not to cause permanent equipment damage.
5. A TOG shall identify the means by which system control is implemented. That is, if supervisory control is utilized it must so state.

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Modifications to the Plans

Any transmission plan is subject to change, as system conditions change. Changes in load growth and usage patterns, development of new generation interconnections, changes in projected in-service dates of interconnection plans, delays in regulatory approvals of transmission projects, or on-going development of preferred plans may cause changes to the STEP. These changes, as they become known to the Transmission Owner, need to be communicated to SPP so the impact on the STEP may be evaluated.

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Annual Plan Review and Update

SPP will revise the STEP on an ongoing basis to reflect changing system conditions. Changes will be made public through annual plan updates, or sooner, if changes result in major changes to the STEP. The SPP Transmission Expansion section of this manual describes the process for updates and removal of upgrades from the STEP.

Planning Data

To perform its planning responsibilities, SPP needs transmission system data and information from Transmission Owners and generation owners. This information needs to be updated on a regular basis. Basic planning information that needed from Transmission Owners to perform reliability assessments includes:

1. Transmission Owner-specific planning criteria
2. Load forecasts with the specificity needed for firm and interruptible loads
3. Operating guides or procedures including special operating rules or protection systems
4. Equipment (Major components such as lines and transformers, sub-components such as breakers and switches, etc.)
5. Data and ratings
6. Machine models, data and ratings for existing units.

To develop potential expansion plans that will coordinate with existing facilities and Transmission Owners' future plans, additional system information will be required, including:

1. Maps (Overview, topological, etc.)
2. System and/or switching One-line diagrams as needed
3. ROW availability
4. Line construction and utilization (line data sheets and calculated quantities such as EMF, sequence impedances, age, etc)
5. Station ultimate development diagrams

See the MDWG manual for a complete list of model information required.

Planning Criteria

In developing expansion plans, SPP complies with NERC Planning Standards, criteria and guides of the regions and sub-regions, and specific planning criteria that member Transmission Owners filed with FERC (to the extent that doing so does not introduce conflicts in the application of these various standards).

Transmission Planning Criteria

- Regional Planning Criteria
 - The regional planning criteria are comprised of the NERC Reliability Standards and SPP Criteria.
 - The STEP shall conform to NERC Reliability Standards and SPP Criteria.
 - The NERC Reliability Standards and the SPP Criteria shall be the basis for determining whether a regional reliability violation exists for which Base Plan Upgrades are needed.
 - The individual transmission owners shall be obligated under the NERC Reliability Standards and SPP Criteria to resolve reliability violations and compliance needs identified by the Transmission Provider or by the individual transmission owners themselves in accordance with these standards and criteria.
 - The SPP Criteria shall be posted on the SPP website at:
<http://www.spp.org/section.asp?group=215&pageID=27>
- Local Planning Criteria
 - Individual Transmission Owners within the SPP Region may develop company-specific planning criteria that, at a minimum, conform to the NERC Reliability Standards and SPP Criteria.
 - For each annual planning cycle, Transmission Owners must provide to the Transmission Provider at least once a year, by April 1st their company-specific planning criteria in order for the need for Zonal Reliability Upgrades to be assessed and included, as appropriate, in the SPP Transmission Expansion Plan.
 - Transmission Owner planning criteria may be modified at any time provided that, if the planning criteria are made more stringent, the increased requirements will not

apply retroactively to studies previously completed or studies already underway by the Transmission Provider.

- Access to the individual Transmission Owner planning criteria shall be made available via the SPP website at:

<http://www.spp.org/section.asp?pageID=111>

- The individual planning criteria of each Transmission Owner shall be the basis for determining whether a reliability violation exists for which a need for a new Zonal Reliability Upgrade should be considered. A Zonal Reliability Upgrade shall not be a Base Plan Upgrade.
- The Transmission Provider shall provide oversight to assure that each Transmission Owner applies its local planning criteria comparably to all load in its service territory as set forth in Section III.5.V of Attachment O of the OATT.

Inter-regional Coordination

- The Transmission Provider shall undertake to coordinate any studies required to assure the reliable, efficient, and effective operation of the Transmission System with, at a minimum, first-tier adjacent interconnected system. Such coordination shall include:
 - Sharing system plans to ensure that such plans are simultaneously feasible and otherwise use consistent assumptions and data; and
 - Identifying system enhancements that could relieve inter-regional congestion or integrate new resources on an aggregate basis.
- The Transmission Provider shall undertake to coordinate any studies with other transmission provider primarily through participation in the agreements listed in Addendum 1 to Attachment O of the OATT.
- On an annual basis, the Transmission Provider shall review the ongoing planning activities under the agreements specified in Addendum 1 of Attachment O of the OATT to determine the need for any additional inter-regional studies. The Transmission Provider shall share this review with the stakeholders at planning summit and solicit input regarding additional inter-regional studies. The Transmission Provider shall share this review with stakeholders at a planning summit and solicit input regarding additional inter-regional studies that should be initiated by the Transmission Provider

Recovering Costs Associated with the Planning Process

- The Transmission Provider's costs associated with the planning process and associated studies set forth in this Attachment O of the OATT shall be recovered pursuant to Schedule 1-A of the OATT.

- The Transmission Provider's costs associated with the high priority economic planning studies shall be recovered pursuant to Schedule 1-A of the OATT.
- The Transmission Provider's costs associated with studies for potential Requested Upgrades or potential Economic Upgrades, other than the high priority economic planning studies, shall be the responsibility of the entities requesting such studies.
- The Transmission Provider's costs for studies associated with requests for long-term firm transmission service and for interconnection service shall be recovered pursuant to Attachments Z and V of the OATT, respectively.

Cost Allocation

The costs associated with new or upgraded transmission facilities shall be allocated in accordance with Attachment J to the OATT.

Dispute Resolution

Any dispute regarding the planning process shall be resolved utilizing the procedures identical to those set forth in Section 12 of the OATT.