



**Southwest Power Pool  
ECONOMIC STUDIES WORKING GROUP  
TRANSMISSIONWORKING GROUP MEETING  
January 03, 2013  
Web Conference**

**• SUMMARY OF ACTIONS TAKEN •**

1. ESWG and TWG approved the motion recommending that in 2014 the 'Level 1' probabilistic plan will be reconsidered for 2015 implementation if approved.



Southwest Power Pool  
ECONOMIC STUDIES WORKING GROUP  
TRANSMISSION WORKING GROUP MEETING

January 3, 2013

Web Conference

• MINUTES •

**Call to Order, Introductions**

Chair Alan Myers (ITC Great Plains, LLC) called the joint meeting of the Economic Studies Working Group (ESWG) and Transmission Working Group (TWG) to order at 9:01 a.m., welcomed those in attendance, and asked for introductions (Attachment 1 – Attendance List).

There were 62 web conference participants representing 12 of 13 ESWG members and 17 of 20 TWG members.

**Agenda Item 1 – Probabilistic Planning Business Case (Action Item)**

Antoine Lucas, SPP staff, presented the Business Case for probabilistic planning (Attachment 2 – Probabilistic Planning Presentation). There was much discussion on the implementation of the proposal. Several members asked staff to wait one or two cycles of the ITP process before implementation. Also a member asked staff to add the SPP member costs to the costs and benefits of the proposal. Randy Lindstrom, Nebraska Public Power District, disagreed with the benefits from the business case stating staff is already incorporating many of these items into SPP's existing planning processes.

**Noman Williams motioned and Kip Fox seconded TWG/ESWG recommends implementing 'Level 1' probabilistic planning in 2014.**

Noman Williams gave his proxy to Al Tamimi. See Attachment 5.

Jim McAvoy motioned and Leon Howell seconded the motion to amend the motion to state "TWG/ESWG recommends that in 2014 the 'Level 1' probabilistic plan be reconsidered for 2015 implementation if approved." TWG passed the amendment with 11 for and, three-four against, ~~and one abstention~~. ESWG passed the amendment with ten for and one against. Alan Myers, ~~and John Payne, and Jason Shook~~ voted against the amendment ~~and Jason Shook abstained~~ as it was their preference that if SPP is to continue looking at probabilistic planning SPP should not delay until 2015. Randy Lindstrom voted against the amendment based on the following reasons: does not identify any substantial reliability or cost benefits which would justify additional SPP Staff and new consulting service fees; current deterministic planning processes and ITP processes already adequately address any perceived benefits which might be provided by the Probabilistic Planning Project; further, with all of the existing SPP planning processes and the impending Integrated Market startup, the data and analysis requirements of my existing Transmission Planning, Staff is extensive and any incremental NPPD resource requirements to support the Probabilistic Planning Project is not warranted.

TWG passed the amended motion with 13 for, and two-three against, ~~and one abstention~~. ESWG passed the amendment with ten for and one against. John Payne and Jason Shook voted against the amendment ~~and Jason Shook abstained~~ as it was their preference that if



**SPP is to continue looking at probabilistic planning SPP should not delay until 2015. Randy Lindstrom voted against the motion because in addition to the reasons for voting against the amendment the material presented to date on the Probabilistic Planning Project does not even warrant re-consideration of the Business Case in 2014.**

**Agenda Item 2 – SFOTF Report**

Brett Hooton, SPP staff, shared the main concepts from Seams Steering Committee's (SSC) approved policy paper to address interregional planning for Order 1000 (Attachment 3a/3b– Presentation and Order 1000 Policy Paper).

**Closing Items**

Chair Alan Myers (ITC Great Plains, LLC) requested if any other items merited discussion. The meeting was adjourned at 11:18 a.m.

Respectfully Submitted,

Juliano Freitas and Rachel Hulett

ESWG and TWG Secretaries



**Southwest Power Pool  
ECONOMIC STUDIES WORKING GROUP  
TRANSMISSIONWORKING GROUP MEETING**

**January 3, 2013**

**Web Conference**

**• A G E N D A •**

**9:00 am – 11:30 am**

| For the agenda see Attachment 4.



**Southwest Power Pool**  
**ECONOMIC STUDIES WORKING GROUP**  
**TRANSMISSION WORKING GROUP MEETING**  
**January 3, 2013**  
**Web Conference**  
**• P R O X I E S •**

~~Noman Williams proxy to Al Tamini give as Attachment 5.~~

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<b>Name</b>	<b>Company</b>
Adam McKinnie	Missouri Public Service Commission
Al Tamimi	Sunflower Electric Power Corporation
Alan Myers	ITC Great Plains
Amber Greb	Southwest Power Pool
Anita Sharma	American Electric Power
Antoine Lucas	Southwest Power Pool
Barry Huddleston	Clean Line Energy
Bennie Weeks	Xcel Energy
Bill Leung	Nebraska Power Review Board
Bob Burner	Duke Energy
Bob Lux	Southwest Power Pool
Brett Hooton	Southwest Power Pool
Brittney Miller	Arkansas Public Service Commission
Bruce Walkup	Arkansas Electric Cooperative Corp.
Charles Cates	Southwest Power Pool
Dan Jones	Southwest Power Pool
Dan Lenihan	Omaha Public Power District
David Ried	Omaha Public Power District
Debbie Prater	Oklahoma Corporation Commission
Doug Bowman	Southwest Power Pool
Greg Sweet	Empire District Electric Company
Harold Wyble	Kansas City Power & Light
Harvey Scribner	Southwest Power Pool
James Okenfuss	Kansas City Power & Light
James Sanderson	Kansas Corporation Commission
Jason Atwood	Ventyx
Jason Shook	GDS representing East Texas Electric Coop.
Jim McAvoy	Oklahoma Municipal Power Authority
Jody Holland	Southwest Power Pool
John Boshears	City Utilities of Springfield
John Fulton	Southwestern Public Service Co.
John Payne	Kansas Electric Power Co.
Juliano Freitas	Southwest Power Pool
Katherine Prewitt	Southwest Power Pool
Kip Fox	American Electric Power
Kirk Hall	Southwest Power Pool
Kurt Stradley	Lincoln Electric System
Kyle Watson	Entergy
Leon Howell	Oklahoma Gas & Electric
Matt McGee	American Electric Power
Michael Watt	Oklahoma Municipal Power Authority
Mike Collins	Oklahoma Gas & Electric
Mo Awad	Westar Energy, Inc.
Nathan McNeil	Midwest Energy, Inc.
Noman Williams	Sunflower Electric Power Corporation
Paul Dietz	Westar Energy, Inc.

Rachel Hulett	Southwest Power Pool
Randy Collier	City Utilities of Springfield
Randy Lindstrom	Nebraska Public Power District
Ronnie Frizzell	Arkansas Electric Cooperative Corp.
Roy Boyer	Xcel Energy
Sam Loudenslager	Southwest Power Pool
Scott Benson	Lincoln Electric System
Steve Gaw	Wind Coalition
Tim Owens	Nebraska Public Power District
Tim Smith	Western Farmers Electric Cooperative
Todd Tadych	
Tom DeBaun	Kansas Corporation Commission
Tony Gott	Associated Electric Cooperative, Inc.
Travis Hyde	Oklahoma Gas & Electric
Trent Campbell	Oklahoma Corporation Commission
Wayman Smith	American Electric Power



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Helping our members work together to keep the lights on...  
today and in the future

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# Probabilistic Planning Business Case

TWG/ESWG Meeting  
January 4, 2013

Antoine Lucas  
alucas@spp.org · 501.614.3382



# Background

## The MOPC...

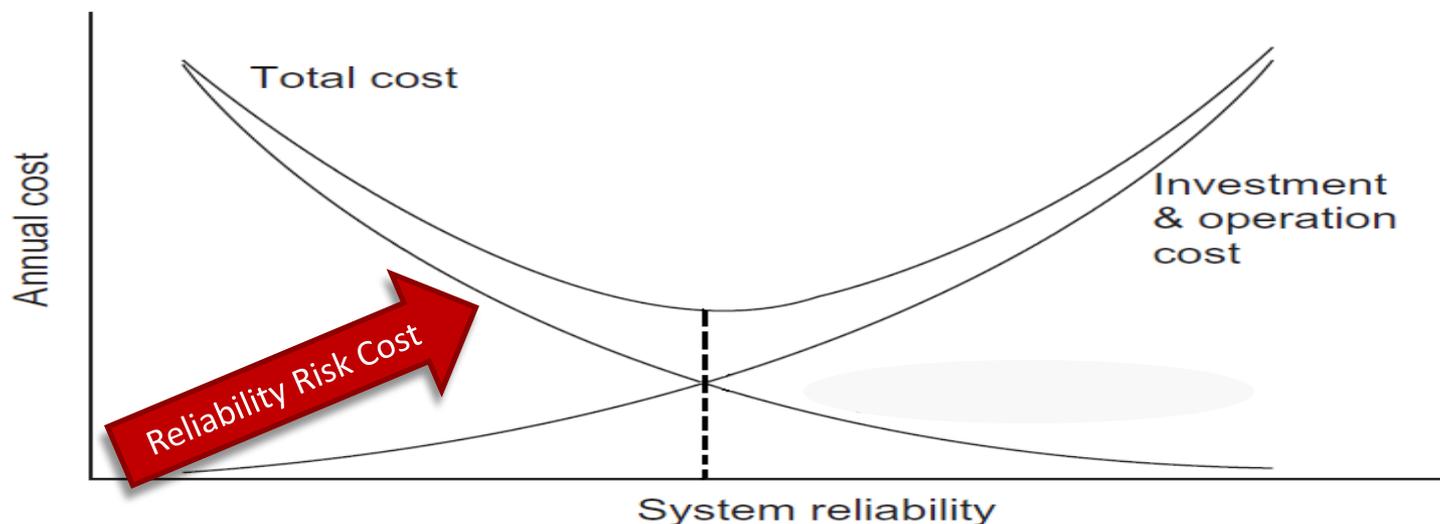
- **endorsed budget for ‘Level 1’ probabilistic planning implementation.**
  - Approval to access funds contingent on additional information
- **requested SPP staff develop a business case.**
  - Example of practical application of probabilistic planning
  - Detail of benefit assumptions in cost/benefit analysis
- **requested TWG and ESWG review the business case prior to MOPC review**

# Deterministic vs. Probabilistic Planning

- **Deterministic planning**
  - Assumes all future system parameters are known
  - Assumes all simulated system events will occur
  - Cost implications of system event occurrence is not considered
- **Probabilistic planning**
  - Quantifies the uncertainty of system parameters
  - Considers the likelihood of system event occurrences
  - Quantifies the reliability risk cost of system events

# Reliability Risk Cost

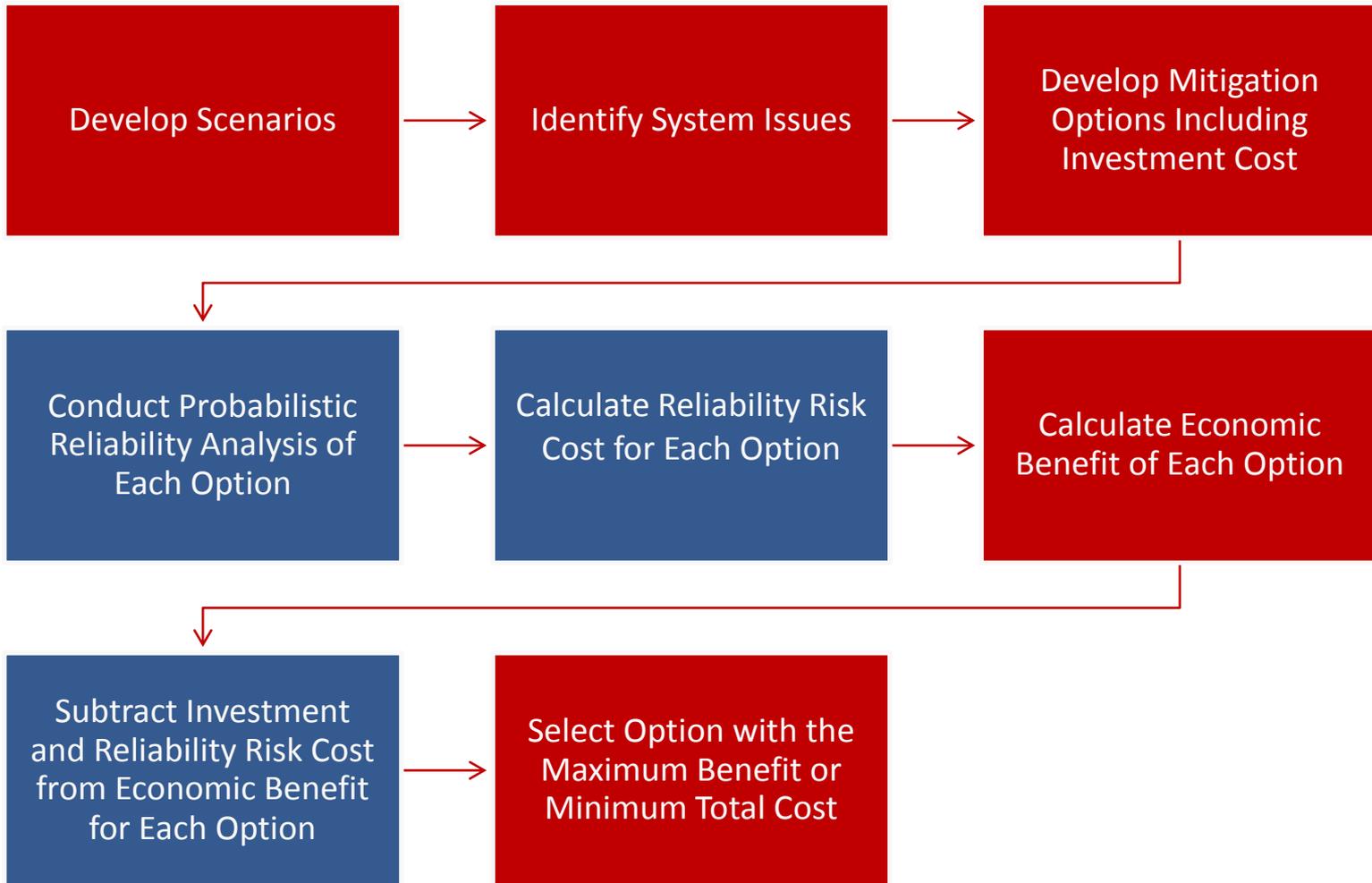
- Monetizes the probability and magnitude of transmission system outage events
- Facilitates cost effective mitigation plan development
- Avoids transmission system over/under investment



# Calculating Reliability Risk Cost

1. **Determine load curtailment forecast due to probable contingencies**
  - Measured by Expected Energy Not Supplied (EENS)
  - EENS driven primarily by transmission facility outage probabilities
  - EENS expressed in (MWh/Yr)
2. **Determine the per unit cost of load curtailment**
  - Measured by Unit Interruption Cost (UIC)
  - UIC can represent societal or utility only impacts
  - UIC expressed in (\$/MWh)
3. **Calculate the total cost of load curtailment events**
  - Measured by Expected Interruption Cost (EIC)
  - $EIC = EENS * UIC$
  - EIC expressed in (\$/Yr)

# Probabilistic Planning Methodology



Existing Process

New Process

# Probabilistic Planning & NERC Compliance

The proposed probabilistic planning methodology...

- **does NOT compromise our ability to comply with NERC planning standards.**
  - All observed reliability issues will be addressed
- **gives us more information that improves our ability to choose the best option that also complies with NERC.**

# Probabilistic Planning Application Example

## Planning Study Yields N-1 Thermal Limit Violation

- The following mitigation options are identified
  - A. Install new 230kV circuit
  - B. Re-conductor 115kV circuit
  - C. Reconfigure existing local facilities
  - D. Implement operational guide
- Present Value is calculated for each option for the following
  - Economic Benefit
  - Transmission Investment Cost
  - Reliability Risk Cost
- Mitigation option value analysis is conducted

# Mitigation Option Value Analysis

Mitigation Option	Economic Benefit (\$M)	Investment Cost (\$M)	Reliability Risk Cost (\$M)	*Net <b>Benefit</b> or <b>Cost</b> (\$M)
New 230 KV Line	32	25	10	<b>3</b>
Re-Conductor 115KV Line	18	15	2	<b>1</b>
Local Reconfiguration	3	2	1	<b>0</b>
Operational Guide	0	1	15	<b>16</b>

\*Net **Benefit** or **Cost** = Economic Benefit – Investment Cost – Reliability Risk

# Probabilistic Planning Value Created

- In this example, evaluating reliability risk cost supports cost effective decision making by revealing
  - the perceived “least cost” option is actually the “highest cost” option.
  - the perceived “most economic” option is actually the “second most economic” option.
- Choosing to re-conductor the 115KV line saves up to \$17M

# Implementation Level Options

- **Level 1**
  - Primary focus is on concept research and development
  - Production application limited by current data availability and existing software capability
- **Level 2**
  - Gather outage data and develop data management system
  - Apply fundamental probabilistic methods
- **Level 3**
  - Fully customize software and data management systems
  - Apply advanced probabilistic methods

# Quantifying Implementation Benefits

- **Benefits are analyzed over a 10 year period**
- **Maximum of \$27.5M of potential savings was assumed based on**
  - **Avoidance of a new transmission line project: \$15M**
  - **Avoidance of a major supply interruption: \$10M**
  - **Improving System reliability: \$1M**
  - **Avoiding unreliability costs: \$.5M**
  - **Other: \$1M**
- **A maximum annual savings capture rate of 10% is assumed**

# Projected Capture Rates

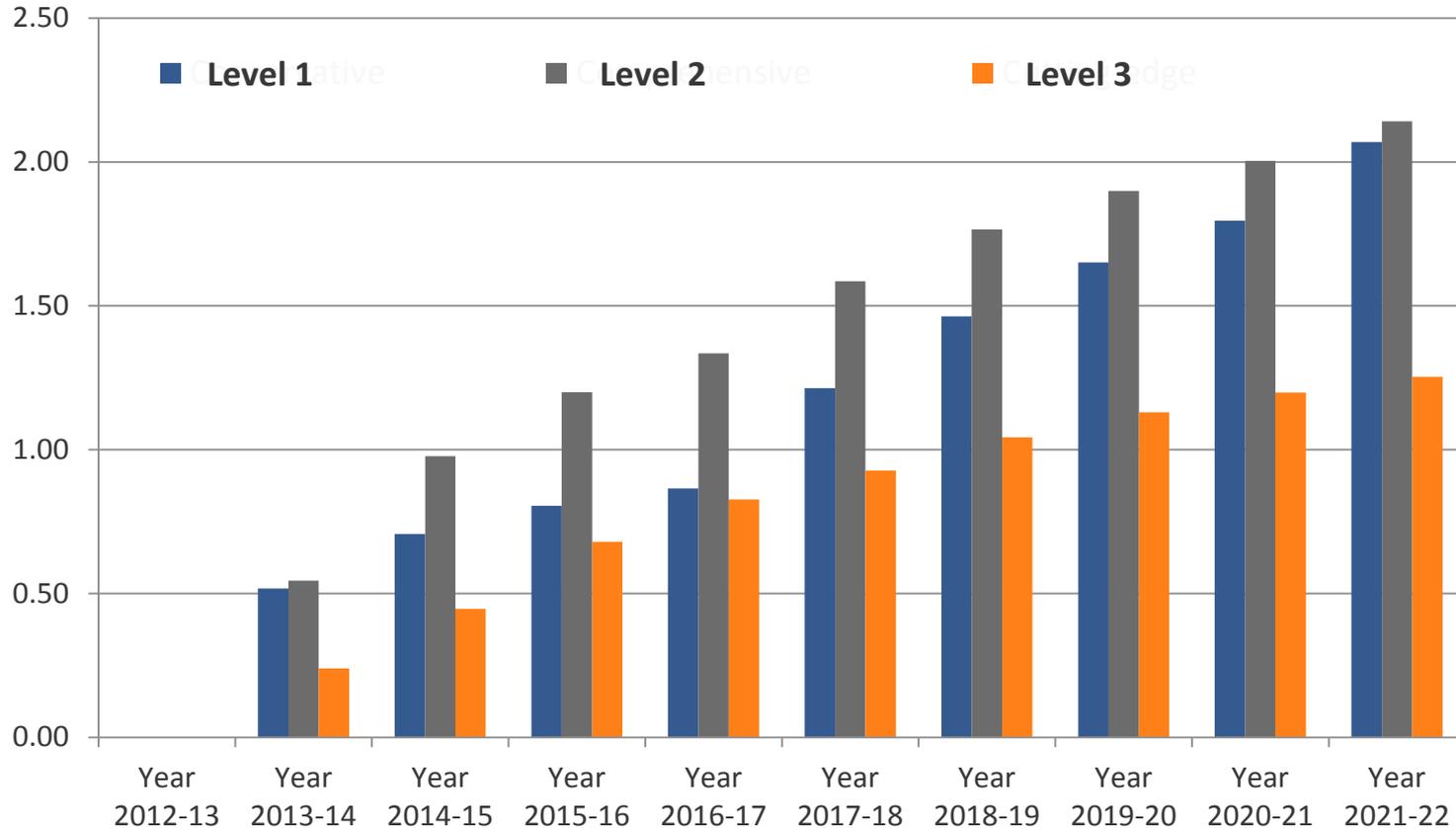
Capture rate increases with implementation level and experience

Level	Capture Rate by Implementation Year									
	1	2	3	4	5	6	7	8	9	10
1	0%	1%	1%	1%	1%	3%	3%	3%	3%	5%
2	0%	3%	5%	5%	5%	8%	8%	8%	8%	10%
3	0%	3%	5%	8%	8%	8%	10%	10%	10%	10%

# Projected Implementation Costs

Level	Cost Type	Implementation Cost (\$k)	Annual Operation Cost (\$k)
Level 1:	Labor	205	205
	Capital Expenditure	70	30
	Phase 1 Total	275	235
Program Total:		275	235
Level 2:	Labor	417	417
	Capital Expenditure	80	30
	Phase 2 Total	497	447
Program Total:		772	682
Phase 3:	Labor	417	417
	Capital Expenditure	410	50
	Consulting	350	200
	Phase 3 Total	1177	667
Program Total:		1949	1349

# Implementation Benefit/Cost Ratios



# Recommendation

- Staff recommends that TWG and ESWG support the probabilistic planning 'Level 1' implementation plan with consideration of moving to the 'Level 2' implementation plan in the future.

# Acknowledgments

- **SPP staff collaborated with PowerTech Labs, Inc. to customize plans to implement probabilistic planning at SPP.**

# Order 1000 Interregional Policy Paper

January 3, 2012

Brett Hooton

[bhooton@spp.org](mailto:bhooton@spp.org) 501.951.1144



# Purpose

- **Policy Paper Approved by the Seams Steering Committee (SSC)**
- **Provided to TWG and ESWG for information**
- **Builds on processes and concepts previously discussed at TWG and ESWG meetings**

# Policy Paper Background

- **Seams FERC Order 1000 Task Force**
  - Policy paper is a compilation SFOTF efforts regarding compliance with the interregional requirements of Order 1000
  - March – December
  - Member of the TWG and ESWG on the SFOTF
- **Included input from ESWG, TWG, SSC, CAWG members, other stakeholders and neighboring regions**
- **Approved by SSC in December**

# Policy Paper Purpose

- Official SPP stakeholder position on interregional Order 1000
- Guide for development of OATT and JOA language
  - RTWG for OATT language
  - SSC for SSC language
- Negotiate language with each seam
  - Each seam will be somewhat different
- Deviations from the policy paper reported to the SSC

# POLICY PAPER CONCEPTS

# Data Sharing & Website

- **2 Categories for Data Sharing**
  - **Data for Annual Sharing**
    - 30 day requirement
    - Schedule developed based upon when data is available
  - **Data Available Upon Request**
- **Option to utilize multiregional activities**
- **Website to share information regarding interregional coordination**

# Joint Planning Committee (JPC)

- **Staffs of two planning regions, one JPC for each seam**
- **Each region gets one vote**
- **Decision making body for interregional transmission coordination**
- **Responsible for interregional coordination**
- **Meets at least annually**

# Interregional Planning Stakeholder Advisory Committee (IPSAC)

- One IPSAC for each seam
- Stakeholders from each planning region
- Each region only gets 1 votes
- Advisory to the JPC
- Stakeholder input for all aspects of interregional coordination
- Meet at least once per year
- SPP portion made of up SSC and interconnected transmission owners

# Issues Review

- **Process for determining whether to perform an interregional transmission study**
- **Annual review**
  - **Transmission issues for consideration presented by either region or any stakeholder**
- **IPSAC recommendation and JPC decision on whether to perform a study**
  - **Requires unanimous vote**
- **If a study has not been performed for two years, either region may trigger a study**

# Scope Development

- Once it is determined to perform an interregional transmission study, the JPC will develop the scope, with input from the IPSAC
- Individual scope for each study
- Scope must include
  - Description of the issue(s)
  - Data Inputs
  - Analysis
  - Timeline
  - Deliverables

# Model Development

- **JPC will develop a “joint and common model” for the analysis**
  - **Single model to be used by the JPC to perform all analysis**
- **Scope will include a timeline for model development**
- **Model review by the IPSAC**

# Analysis

- **Analysis must include one of the following**
  - SCUC & SCED planning analysis
  - AC Analysis (steady state N-1, stability, etc.)
  - DC Analysis (FCITC)
- **Determined by the scope**
- **Benefit metrics for interregional evaluation**

# Solution Development

- **JPC will make a request for solutions**
  - **Based on identified issues**
- **Solutions may be recommended by stakeholders**
- **Solutions will be evaluated by the IPSAC & JPC through the interregional evaluation**
- **Need to comply with regional requirements for submitting projects**
- **Preferred solutions recommended in the CSP report**

# Regional Review

- **After the interregional evaluation, the JPC will make a recommendation to each region on the preferred transmission solution(s) to address the identified issues**
- **Solutions from the interregional evaluation will be reviewed regionally**
  - **SPP stakeholder process (ESWG, TWG, SSC)**
- **Regional review methodology to be developed by ESWG and TWG**

# Stakeholder Input

- **Input in the interregional evaluation through the IPSAC**
- **Direction from stakeholders on the regional review through the SSC, ESWG, and TWG**
- **For a project to be approved, it must go through the SPP working group process including the MOPC and eventually the SPP Board/RSC**

# Interregional Project Type

- SPP plans to develop a new project type in SPP OATT called “Interregional Project”
- Could be a project that is completely in one region but provides value to more than one region
  - Or a tie line
- Must be approved in the interregional process and approved in the regional review

# Cost Allocation

- **Costs will be allocated based on benefits**
  - Each region measures benefits differently in their regional processes
- **Currently SPP & MISO both agree to use APC to determine cost allocation**
  - SPP prefers to use the same metrics as used in the SPP regional process
- **SPP & MISO disagree on project applicability**
  - Reliability projects
  - Voltage threshold limit

# Cost Increases After Approval

- **Interregional projects inside one region**
  - Cost increases shared based on cost allocation until a B/C threshold is reached.
  - Cost increases after B/C limit are covered by the constructing region
- **Tie Lines**
  - Cost increases are covered by the constructing region

# Cost Increases on Jurisdiction Tie Lines

- **For the excess building region:**
  - Split cost increases based on cost allocation until the limiting regional B/C ratio falls below the applicable B/C threshold
  - The benefits for the B/C ratio would be the benefits calculated at the time of project approval
- Increases for the other planning region will be the responsibility of that planning region

# Project Termination & Capacity

- **Neither region may unilaterally termination a project except for:**
  - **Regulatory denial of a project**
  - **Cost overruns that result in a B/C less than the B/C threshold**
  - **Further provisions as have yet to be defined**
- **Transmission Capacity**
  - **New capacity allocated based on cost allocation**



# Order 1000 Interregional Policy Paper

Date Published

Interregional Coordination



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## Revision History

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Date or Version Number	Author	Change Description	Comments
<b>10/30/2012</b>	Brett Hooton	1 <sup>st</sup> Draft	
<b>11/14/2012</b>	Brett Hooton	Cost allocation placeholder, Block 5 edits	
<b>11/29/2012</b>	Sam Loudenslager	Added Section for Cost Allocation	
12/06/2012	Brett Hooton	Additional edits based on feedback	
12/11/2012	Brett Hooton	Updates on cost allocation and other minor edits	
<b>12/18/2012</b>	Brett Hooton	SSC Edits	Approved by the SSC

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# Introduction

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## **Purpose**

On July 21, 2011, the Federal Energy Regulatory Commission (FERC) issued Order No. 1000, also called Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities (Order 1000)<sup>1</sup>. FERC also provided additional clarification on Order 1000 in Order No. 1000-A (Order 1000-A)<sup>2</sup> and Order No. 1000-B (Order 1000-B)<sup>3</sup>.

Order 1000 contains both regional and interregional requirements. The purpose of this paper is to discuss proposed policies relating to the interregional coordination requirements which will guide the development of language in the Joint Operating Agreements (JOA) and the SPP Open Access Transmission Tariff (OATT).

For the purposes of Order 1000 interregional compliance, SPP has three neighboring planning regions: Midwest ISO (MISO), Associated Electric Cooperatives Inc. (AECI), and Mid-Continent Area Power Pool (MAPP). Language included in each JOA, or other bilateral agreement, as well as certain OATT language will have to be agreed upon by each party. For compliance on the SPP – MISO seam, SPP and MISO will have to agree to all of the conditions included in the JOA. To get agreement, the policies included in the JOAs may vary from what is in the Policy Paper. Any variations will be reported to the SPP Seams Steering Committee (SSC). The same approach will be taken for the seams with AECI and MAPP.

Compliance will be met using SPP's JOAs and the OATT. The order allows the use of the JOAs to identify the interregional coordination procedures. These JOAs will be filed with FERC for compliance purposes.

This paper is not meant to be a draft of JOA language. Additional detail will need to be included in the JOA.

## **Definitions**

**Benefits:** Benefits are calculated based on the metrics agreed to by the planning regions. The benefits as referenced in this policy paper are the benefit values included in the Coordinated System Plan report.

**Interregional Project:** An interregional project may be a tie line between two or more planning regions or a line wholly within one region which provides value to multiple regions.

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<sup>1</sup> <http://www.ferc.gov/whats-new/comm-meet/2011/072111/E-6.pdf>

<sup>2</sup> <http://www.ferc.gov/whats-new/comm-meet/2012/051712/E-1.pdf>

<sup>3</sup> <http://www.ferc.gov/whats-new/comm-meet/2012/101812/E-1.pdf>

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## Data Sharing

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Order 1000 requires procedures to be developed that provide for the annual (at a minimum) exchange of planning data and information. The procedures must identify specific obligations for sharing planning data and information.

### **Two Categories for Data Sharing**

The JOA will contain two sections regarding data sharing. The first section is called “Data for Annual Sharing”. The second section is called “Data Available Upon Request”. For both data types market sensitive data should not be exchanged.

#### **Data for Annual Sharing**

This category includes data and information that should be shared each year. An appendix to the JOA will contain the “share by” dates as agreed upon by both parties. The types of data in this category are listed below.

- Data required for the development of load flow cases, short-circuit cases, and stability cases, including ten (10) year load forecasts, including all critical assumptions that are used in the development of these cases;
- Load flow models used for transmission expansion planning (up to the next ten (10) years) on an annual basis;
- Any publicly available long-term or short-term reliability assessment reports produced by the planning region;
- An update on completed expansion studies, transmission service studies and generation interconnection studies since the previous year;
- Data and assumptions used for the development of economic dispatch models. This includes without limitations generating unit parameters, fuel price assumptions, load curves, etc.; and
- Contingency lists for use in load flow, including lists of all single contingency events and multiple facility tower line contingencies.

#### **Data Available Upon Request**

This category includes data and information that is not required to be shared every year. This data will be made available to the other planning region within 30 days of its request.

It is not expected that the either planning region will be forced to develop data that is not used on a regular basis by that region. Only data that is currently available is subject to the 30 day requirement. It is sufficient for the planning region to provide the latest data that is available.

The types of data in this category are listed below.

- Such data and information as is needed for each planning region to plan its own system accurately and reliably and to assess the impact of conditions existing on the system of the other planning region;

- Each planning region agrees to support model building and maintenance activities on a collaborative basis, including but not limited to planned transmission expansion projects, generation commitment and dispatch schedules, firm imports and exports, and load forecasts;
- Long term generation resource plans including generation retirements.
- Generation siting used in the planning region's transmission planning studies with accompanying documentation on the assumptions used. If the planning region is using multiple futures or scenarios this information will be provided for each future, including generation retirement dates.
- Transmission system maps for the planning region's bulk transmission system and lower voltage transmission system maps that are relevant to the coordination of planning between the systems. An electronic copy should be provided if available.
- Breaker rating information and diagrams for the portions of the Party's transmission system that are relevant to the coordination of planning between the systems.
- Operating assessment reports produced by the Party
- The timing of each planned enhancement, including estimated completion dates, and indications of the likelihood a system enhancement will be completed and whether the system enhancement should be included in system expansion studies, system impact studies and generation interconnection studies, and all related applications for regulatory approval and the status thereof.
- Contingency lists for use in economic planning models.
- Contingency lists for use in stability analyses, including lists of all single contingency events and multiple facility tower line contingencies
- Information regarding long-term firm transmission services on interfaces relevant to the coordination of planning between or among the systems.

### **Multiregional Activities**

Other multiregional activities, such as data compiled by the Multiregional Modeling Working Group (MMWG), may be used to meet other appropriate portions of this requirement as agreed to in writing by both planning regions.

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## **Website for Interregional Activities**

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Each planning region will host its own website for the communication of information related to interregional transmission coordination procedures. SPP will utilize the Interregional Coordination page of the SPP website.

The planning regions will coordinate with each JOA entity on the documents and information that is posted to ensure consistency of information between each region's respective websites.

The SPP website will contain, at a minimum, the following information:

- Links to the SPP Joint Operating Agreements (JOAs) and other seams agreements
- Notice of upcoming Interregional Planning Stakeholder Advisory Committee (IPSAC) meetings
- Links to materials for IPSAC meetings

- Seams Monthly Activity Report
- Documents relating to Coordinated System Planning with neighboring entities

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## Joint Planning Committee

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The Joint Planning Committee (JPC) is a staff committee comprised of representatives from the staff of each planning region on a particular seam. The JPC is identified in SPP's current JOAs with MISO, Western Area Power Administration (WAPA), and AECI. The JPC will be the decision making body for interregional transmission coordination.

### **Membership**

The JPC is comprised of representatives of each planning region's staff. The representatives are appointed by the Operating Committee (OC).<sup>4</sup> As is consistent with the current JOAs, there is no limitation on the number of members on the JPC. Every four years each planning region will have the right to designate a chairman of the JPC to serve a rotating two-year calendar term. The JPC will only have one chairman at a time.

### **Responsibilities**

The JPC is the decision making body for interregional transmission coordination. The IPSAC, defined in a later section, and other stakeholder groups may provide guidance and recommendations to the JPC. The JPC is responsible for all aspects of interregional transmission coordination, including the development of a Coordinated System Plan (CSP).

The JPC will determine if a transmission study should be performed in any particular interregional planning cycle.<sup>5</sup> If it is determined that a transmission study should be performed, the JPC with guidance from the IPSAC, will develop the study scope.<sup>6</sup> The scope must include all assumptions, an explanation of the types of studies that will be performed, and a description of the models that will be used.

The JPC is responsible for assuring that the models used in the interregional evaluation by each planning region are sufficiently similar. The models that are used must be agreed upon by the JPC to ensure confidence in the results.

The JPC will verify that the results of the study are accurate and meet the expectations of the JPC based on the study scope.

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<sup>4</sup> The OC is currently defined in SPP's JOAs with MISO, WAPA, and AECI. The OC is responsible for all aspects of the JOA.

<sup>5</sup> This process is discussed in a later section.

<sup>6</sup> Study scope development is included in a later section.

## **Voting**

While the JPC may have multiple representatives from each planning region, each planning region only gets one vote. Therefore no more than two votes may be cast on any particular issue at a JPC meeting. For an issue to be approved by the JPC, both planning regions must vote for the issue. If the vote is tied the issue fails.

## **Meetings**

For the purpose of interregional transmission coordination, the JPC will meet no less than once per year. During an interregional transmission study the JPC will meet more frequently as required by the study scope. There is no limitation on the number of meetings of the JPC. Either party may request a meeting of the JPC.

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# **Interregional Planning Stakeholder Advisory Committee**

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The IPSAC is a joint stakeholder advisory committee which is comprised of stakeholders from each planning region for a particular seam. There is an IPSAC for the seams with MISO, AECI, and MAPP.

## **Membership**

There are two segments of the IPSAC, one for each planning region. Each planning region will determine the membership of their segment. The SPP segment of each IPSAC will be comprised of the membership of the SSC and any SPP transmission owner interconnected to the other planning region who is not a member of the SSC. No SPP member shall have more than one representative on the IPSAC.

## **Responsibilities**

The IPSAC is an advisory committee and not a decision making committee. The IPSAC may make recommendations to the JPC on any aspect of interregional planning.

At the beginning of the interregional planning cycle the IPSAC will review issues along the seam as presented by the planning regions and stakeholders. After reviewing the issues the IPSAC will make a recommendation to the JPC on whether a transmission study should be performed. If the IPSAC recommends a study should be performed, it will also include a recommendation on what issues should be studied to identify transmission solutions.<sup>7</sup>

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<sup>7</sup> This is discussed in a later section.

The IPSAC will provide guidance to the JPC throughout the interregional evaluation. Particularly the IPSAC will be involved in an advisory capacity in the following activities:

- Scope development
- Assumption development
- Model development
- Solution development
- Analysis review
- Results review

## **Voting**

The IPSAC will vote to make a recommendation to the JPC. Each planning region gets one vote. The SPP vote will be based on a poll of the SPP IPSAC members. For any issue to be approved or recommended by the IPSAC both planning regions must vote for it. If the vote is tied the issue fails.

## **Meetings**

For the purpose of interregional transmission coordination, the IPSAC will meet no less than once per year. During an interregional transmission study the IPSAC will meet more frequently as required by the study scope. There is no limitation on the number of meetings of the IPSAC. While voting is limited to the IPSAC membership, all IPSAC meetings will be open. Any stakeholders are able to attend and participate in IPSAC meetings.

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# **Issues Review & Determining to Perform a Study**

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## **Issue Review**

Potential issues that are to be reviewed by the IPSAC and the JPC for consideration to be evaluated in a transmission study may be submitted by either of the planning regions or any stakeholder. The JPC will schedule a meeting for the IPSAC to review the issues and provide meeting materials regarding the issues to the IPSAC two weeks before the meeting. If a stakeholder is submitting an issue for review, it is the responsibility of that stakeholder to provide materials supporting their recommendation. The IPSAC will discuss the issues and provide a recommendation to the JPC on whether an interregional transmission study needs to be performed.

The JPC will meet within 45 days of receiving the IPSAC recommendation. The JPC will review all issues that were submitted. Taking into consideration the IPSAC recommendation, the JPC will decide whether a study should be performed.

## **Determining to Perform a Study**

The JPC will vote to determine whether or not to perform an interregional transmission study. For a vote to pass to perform a study both planning regions must vote in favor of performing a study. If for two consecutive years a study was not performed, starting the following year either planning region's vote will be sufficient to require performing an interregional transmission study.

Within 30 days of the JPC's decision on whether a study should be performed, the JPC will inform the IPSAC of the decision. If the JPC decided to not perform a study, and the decision was contrary to the IPSAC recommendation, the JPC will provide the IPSAC with their rationale as well as the recorded vote.

Once it has been determined to perform an interregional study, the JPC will determine when to start the study, taking into consideration other ongoing or upcoming interregional evaluations, available resources, etc. The study must begin within six months of the JPC's decision to perform the study<sup>8</sup>.

### **Issues to Include in Study**

After determining to perform an interregional study, the JPC will determine what issues will be evaluated in the study. Either planning region may include any item in the scope that was reviewed when determining whether or not to perform an interregional study.

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## **Scope Development**

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At the beginning of an interregional study the JPC, with input from the IPSAC, will develop a scope specific for that study. Each interregional study will have its own scope. The scope must include at least these five sections:

1. Issue(s) Description
2. Data Inputs
3. Analysis
4. Timeline
5. Deliverables

The scope developed by the JPC will focus on the interregional evaluation portion of the analysis. Each planning region will use their own scope or methodology for the regional review portion of the study.<sup>9</sup>

### **Issue Description**

The scope will include a section called "Issue Description". This section will define the issues that should be reviewed in the interregional study based on the decision by the JPC. There must be enough information in the scope to clearly define the issue. If the issue was recommended by a stakeholder, the stakeholder is responsible for providing this information.

### **Data Inputs**

The data inputs section will include a discussion of all items related to futures/scenarios, assumptions, resource plans, and model development. In the development of the assumptions for the interregional evaluation, assumptions used in the planning regions' respective regional analyses

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<sup>8</sup> If one party initiates the study if a study has not been performed for two years, the 6 month window starts the day after the JPC meeting.

<sup>9</sup> The regional review is discussed in a later section.

should be leveraged where applicable, along with the expertise of the regional stakeholder groups, such as the Economic Studies Working Group (ESWG) and the Transmission Working Group (TWG).

The JPC will include in the scope a description of any futures/scenarios that will be used, along with the corresponding set of assumptions. If multiple futures/scenarios will be used, then assumptions, models, and a resource plan, if needed, will be developed for each.

As different studies require different types of assumptions, the scope will guide what assumptions need to be developed. The following list provides examples of the types of assumptions that will need to be agreed to by the planning regions. This list is not meant to be all-inclusive and additional assumptions not included in the list below may be used.

- Environmental and public policy criteria
- Emissions
- System topology
- Generation parameters
- Fuel prices
- Hurdle rates
- Load forecasts
- Market structure
- System Dispatch
- Footprint and voltage levels in study
- Voltage, Thermal, and Stability Thresholds (criteria such as SPP Criteria 3)
- NERC Standards
- Future Generation
- Study horizon

## **Analysis**

The scope will include a description of the types of studies that will be used for the analysis. The studies will be used to determine the magnitude of the issue being analyzed, to test potential solutions, identify the preferred solution, and to determine the benefits of the solution(s). The types of issues identified and the metrics used to measure the benefits of solutions will help guide the types of studies that should be included in the scope. The types of studies included in the scope may include, but are not limited to, security constrained unit commitment and security constrained economic dispatch (SCUC & SCED) planning analysis, AC analysis (steady state N-1, stability, etc.), and DC analysis (FCITC). At least one of the previously mentioned studies should be included in the scope.

## **Timeline**

The scope will include a description of the timeline for the interregional study, including the due date for all deliverables and when the results will be presented to each region's stakeholders. The timeline will be developed to be commensurate with the scope, however the timeline for the interregional evaluation shall not exceed 18 months.

## **Deliverables**

The deliverable for the interregional planning process will be the CSP report. The report will include all aspects of the study as well as any recommended solutions. The description of the recommended solution will also include the cost allocation between the two regions. The JPC will present the report to the IPSAC for an opportunity to provide feedback. After consideration of the IPSAC feedback and any resulting action, the JPC will ask the IPSAC to provide a recommendation to each region regarding the CSP report and the solutions contained therein.

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## **Model Development**

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The JPC will develop a joint and common model(s) for the analysis. This model(s) will be used by the JPC to perform all analysis related to joint evaluation and will be based on the assumptions defined in the scope and the types of analyses being performed.

Assumptions used in the model will be defined in the scope and must be agreed upon by both planning regions. If the development of a resource plan is required, the parameters of that plan will be agreed upon by both planning regions.

The scope will include a timeline for the finalization of the data to be used in the model. The JPC will provide the model(s) to the IPSAC for their review.

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## **Analysis**

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The type of analysis that is performed will be based on the identified issues and the metrics being used for determining project benefits. The analysis will be guided by the scope. Potential solutions will be evaluated to determine if they address the identified issue(s). If the solution addresses the issue, the benefits will be evaluated and compared to the cost of the projects.

## **Benefit Metrics**

Metrics for calculating the benefits of a project, for purposes of cost allocation, must be agreed upon by both planning regions. SPP is proposing to use the following metrics: improvements in reliability, reliability project deferrals, deferred generation investment, Adjusted Production Cost (APC) savings, reduced losses (impact on capacity), public policy, interregional transfer capability, and reduced emissions. Calculation methodologies for these metrics can be found in the Metrics Task Force Report.<sup>10</sup>

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<sup>10</sup> <http://www.spp.org/publications/20120717%20Metrics%20Task%20Force%20Report.doc>

The planning regions must develop and agree to a calculation methodology for each of the benefit metrics. The benefit value used in the cost effective analysis will be the sum of the annual benefits over a period of time as defined in the scope of the study.

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## Solution Development

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Solutions will be developed to meet the needs identified in the scope with the most cost effective project being selected as the preferred solution. The JPC will request suggestions for solutions from stakeholders for the needs identified in the joint evaluation. For a project to be the preferred solution the JPC must both agree that it is the most cost effective solution. Any proposed solution must have an in-service (or need) date within 10 years.

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## CSP Report

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The CSP Report will be developed by the JPC with input provided by the IPSAC. The CSP Report will contain a description of all aspects of the study including solutions and cost allocation between the regions. The report will be provided to the IPSAC which will be asked to make a recommendation to each respective region on the report and the solutions. The report should contain sufficient information that stakeholders are able to make an informed decision regarding the merits of the study and the results.

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## SPP Regional Review

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After the joint evaluation and the development of the CSP report, the IPSAC will make a recommendation to each planning region on the report and on the preferred solutions identified in the report. Each region will review the results of the joint evaluation. This policy paper only discusses SPP's review process; however both regions must approve a project in their respective regional process for it to qualify for interregional cost allocation.

After the IPSAC makes its recommendation, SPP staff will evaluate the preferred transmission solutions identified in the CSP report using models, assumptions, and criteria, related to SPP's Integrated Transmission Planning (ITP) process. The latest applicable ITP model will be used, including the stakeholder approved and vetted assumptions and criteria. Any additional projects not included in the model will be added along with updates for generation such as adding generation that has a signed interconnection agreement and removing units that are, or will be, retired.

### **Regional Review Methodology**

SPP staff will develop a regional review methodology. This methodology will contain specific procedures regarding the development of assumptions and criteria for the regional review. It will also contain the procedures for determining which of SPP's regional models to use and what updates to apply to those models for use in the regional review. The methodology will be presented to the TWG and ESWG for their review, comments, and eventual approval.

## **Project Approval Process**

The benefits, using SPP's regionally approved metrics, for SPP will be calculated and compared with the proposed cost assigned to SPP for the interregional solution. SPP staff will compile a report which will discuss the regional review analysis and compare the results to the analysis performed in the joint evaluation. The report will also include a recommendation from SPP staff on whether the interregional solutions, including their cost allocation, should be approved.

SPP's regional working groups, specifically the TWG, ESWG, SSC, and the Cost Allocation Working Group (CAWG), will review the results of the SPP analysis and the corresponding report. The applicable working group(s) and SPP staff will then provide a recommendation to the SPP Markets and Operations Policy Committee (MOPC). The MOPC will be asked to approve the report and recommendation. The MOPC action will then be sent to the Regional State Committee (RSC) for review and the SPP Board of Directors (Board) for their consideration.

A Board approved interregional project will automatically start SPP's process to award a Notification to Construct (NTC). The NTC process will follow the applicable SPP OATT and Business Practice requirements.

If the Board approves the interregional transmission solutions then the projects will have received approval through SPP's regional process. If the other planning region has also approved the projects through their regional process, the interregional solution will be approved for interregional cost allocation.

## **Stakeholder Input**

The SPP stakeholder working groups will review the proposed methodology containing the specific procedures for reviewing an interregional project in the SPP regional process.

During the joint evaluation stakeholders have an opportunity to provide comment and advice through the IPSAC. The IPSAC will meet multiple times throughout the joint evaluation. During the regional review process stakeholders will have an opportunity to provide comment and direction through the applicable stakeholder working groups. Unlike the IPSAC which is advisory, the ESWG, TWG, and SSC will provide direction to SPP for the regional review.

As with SPP's regional processes, the regional review portion of the interregional process will be reviewed by the MOPC.

## **Regional Review Timeline**

The JPC will identify the timeline that will be used for the interregional process in the scope. This timeline shall not exceed 18 months. After the joint evaluation is complete and the recommendation has been provided to each region by the IPSAC, each region must review the project in their regional process within six months. Each region must approve or disapprove the project regionally within the six month timeframe. If the project is not approved within this timeline it must be reevaluated by the JPC to qualify for interregional cost allocation. The JPC may provide an extension to the regional review timeline.

After each region has made a determination on the proposed interregional projects, or at the end of the timeline, whichever comes first, the JPC will report back to the IPSAC on the results and decision of each region.

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## **Interregional Project Type**

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A new project type will be created in the SPP Tariff called “Interregional Project”. An interregional project is a project which is approved through the interregional process, including the regional review, and qualifies for interregional cost allocation.

Each region will be allocated the additional transmission capacity based on the allocation of the cost assumed by each region for the entire interregional project.

Either planning region will have the right to interconnect to the interregional facility. The non-constructing region would have to meet the interconnection criteria of the constructing region. Interconnection costs would be the responsibility of the region interconnecting or if it is an approved interregional project the costs would be split according to the results of that analysis.

Parties could negotiate any advancement of the in-service date for interregional projects. The planning regions would determine how the advancement costs would be allocated.

Benefits for the B/C calculation will be those benefits identified and included in the CSP report at the time of project approval.

If a planning region is paying for a part of the line, that planning region has the ability to interconnect to that line.

Once approved, neither party can unilaterally terminate a project, except for regulatory denial of a project, cost overruns as described below, and further provisions to be determined.

Each region will be allocated the additional transmission capacity based on the allocation of the cost assumed by each region for the entire interregional project. Capacity of a seams project includes both the capacity of the project and also the change in capacity of any existing flowgates affected by the seams project. A seams entity’s capacity is its allocated usage share of the project and any additional capacity on existing flow gates affected by the project. Unused capacity will be allocated based on the CMP process.

### **Projects Completely Inside One Planning Region**

The region responsible for constructing the project is the region in which the project resides. The other region will pay the constructing region for their portion of the annual revenue requirement. Physical ownership and maintenance of the project will be the constructing region. The project will be under the OATT of the constructing region or entity.

The regions will share cost increases until the point where the applicable regional B/C ratio falls below the limiting regional B/C threshold. The benefits for the B/C ratio would be the benefits calculated at the time of project approval. Cost overruns, which cause the regional B/C ratio to fall below the limiting regional B/C threshold, are covered by the region constructing the project. If the project cost increases such that the B/C ratios for each region are still above the respective regional B/C criteria, then the constructing region may not terminate a project without agreement from the other planning region. If the project cost increases such that the B/C ratio for the constructing region falls below the regional B/C criteria, the constructing region may terminate the project without requiring mutual agreement.

### **Tie Lines**

Each region will be responsible for the construction of the project in direct relation to the portion of cost for which they are responsible. Physical ownership of the line will correlate to the portion to which each region builds. Each region's owned portion will be subject to that region's OATT. Each region will maintain the portion of the facility that corresponds to the portion each region constructed. The interregional line will be in the BA of the region which builds the majority of the miles of the line.

Cost overruns above the cost estimate at the time of approval on each region's portion of the cost are covered by the constructing region. The cost tracking process of a planning region would apply to their portion of the interregional project.

A region may not terminate a project unless the limiting regional B/C ratio falls below the regional B/C threshold. Neither region may terminate a project based on cost increases without allowing the other region the option to pick up some additional cost.

### **Tie line with Jurisdictional Issues**

This section covers cost increases if there are state jurisdictional issues that limit one region's ability to construct a project which would otherwise be allowed to build a project based on the cost allocation. The party that is limited by the jurisdictional issue will build and own what it can; the rest will be built by the other region.

The region which is building more than it would be allotted based on cost allocation due to jurisdictional issues is called the excess building region. The other region will pay the constructing region for their portion of the annual revenue requirement.

For the excess building region:

- The regions will share cost increases until the point where the limiting regional B/C ratio falls below the applicable B/C threshold<sup>11</sup>. The benefits for the B/C ratio would be the benefits calculated at the time of project approval.
  - For purposes of termination, the excess portion will be treated with the rest of the portion being constructed in the building region.
- Cost overruns for the other planning region will be the responsibility of that planning region.

## Cost Allocation

In Order 1000, the FERC requires public utility transmission providers in each transmission planning region to develop, together with public utility transmission providers in neighboring transmission planning regions, a common method, or set of methods, for allocating the costs of new interregional transmission facilities that are jointly evaluated by two or more planning regions in their interregional transmission coordination procedures. FERC has encouraged planning regions to reach agreement with adjacent planning regions regarding the allocation of costs of interregional projects between regions. In the event that an agreement cannot be reached, FERC will decide what cost allocation method will be used for allocating the costs of interregional projects. SPP, through the Regional State Committee, has adopted a set of guidelines and principles to be used to negotiate the question of cost allocation with its neighbors.

Approved interregional projects will be considered in the SPP Regional Cost Allocation Review (RCAR) process.

General benefit principles that will be used to guide development of an equitable cost allocation methodology include:

- Recognition that interregional projects may offer combinations of different types of benefits and entirely different sets of benefits may accrue to each entity;
- Benefit metrics used for the evaluation of interregional projects by each entity will include all benefits and metrics considered in each entity's internal (local and regional) transmission planning process;
- Each entity shall have the option, but not the obligation, to consider some or all of the benefits and metrics used by the other entity;
- Seams entities will develop a common set of benefits and metrics for use in evaluating interregional projects;
- Interregional projects can offer unique benefits beyond those currently considered in either entity's internal transmission planning process; and
- Additional benefits can be developed and documented as more experience is gained;

<sup>11</sup> Not to exceed a B/C ratio requirement of 1.25

Interregional cost allocation principles to be used in arriving at an equitable cost allocation methodology include:

- Allocated costs should be at least roughly commensurate with total benefits to each entity; neither seams entity shall be allocated costs without receiving benefits (consistent with Order 1000);
- Cost allocation methodologies used and the identification of benefits must be transparent (consistent with Order 1000);
- Different cost allocation methodologies may be applied to different types or different portions of transmission facilities. This principal recognizes that transmission may be needed for different reasons. (consistent with Order 1000);
- Seams entities will quantify and, if possible, monetize benefits. However, non-monetized and non-quantified benefits may also be recognized in assessing overall reasonableness of proposed interregional cost allocations;
- Monetized reliability, load serving, or public policy benefits will be at least equal to the avoided cost of achieving the same benefit through local or regional upgrades;
- If minimum benefit-to-cost thresholds are utilized, they should not exceed 1.25 (consistent with Order 1000);
- The share of benefits to each seams entity should be sufficient to support the interregional projects' approval through each entity's internal planning process; and
- The costs of an interregional project allocated to each seams entity will be recovered by use of the existing internal cost allocation process of each entity (consistent with Order 1000).

The RSC, with authority over cost allocation within the SPP region, has adopted the methodology that costs of interregional projects will be recovered regionally through the highway portion only of the approved highway/byway cost allocation methodology.<sup>12</sup>

Agreements that have been reached with adjacent seams entities on cost allocation should be included in both the OATT and the JOA.

### **Status of Discussions with MISO**

SPP and MISO (the parties) have tentatively agreed on the following issues related to interregional cost allocation:

- A minimum project cost of \$5 million total cost;
- One or more futures will be used in the evaluation;
- The appropriate present value will be determined at the time of the study;
- Adjusted production cost savings will be utilized as the basis for allocating the costs of a project between SPP and MISO. This would not require use of a minimum benefit/cost

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<sup>12</sup> Reference the meeting where this position was approved.

ration threshold (1.25 vs. 1). Instead, the parties will calculate the APC savings that each party would see from a project and allocate the cost of the project based on each party's percentage share. Then each party would evaluate its share of the project using the benefits it utilizes to evaluate for regional projects.

- The timeframe to be utilized for the calculation of benefits will be 20 years from the year the project is in service;
- a project should provide a minimum of 5% benefits to each party in order for a project to be considered; and
- MISO has also committed to explore further with its stakeholders use of a portfolio of benefit metrics to evaluate interregional projects with SPP.

The following issues have not been agreed to by MISO and SPP

- On the question of voltage threshold, MISO advocates that the focus would be primarily 345kV facilities (i.e., 345kV facilities would be 50% or more of the total project costs). SPP supports evaluating any voltage threshold for interregional projects; and
- MISO does not support consideration of projects that provide only reliability benefits for interregional cost allocation. SPP does not distinguish between reliability, economic, or public policy projects.

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## Compliance

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FERC is allowing the use of bi-lateral agreements to contain provisions for interregional coordination. If these bi-lateral agreements are filed with FERC, and are referenced in the OATT, they can be used to show compliance with the Order 1000 interregional requirements. However, some items must still be included in the SPP OATT.

### **Items for the OATT**

Below are the sections of this report of which all or part of the section will be included in the SPP OATT.

- SPP Regional Review
  - Regional Review Methodology
  - Project Approval Process
  - Stakeholder Input
  - Regional Review Timeline
- Interregional Project Type
  - Projects Completely Inside One Planning Region
  - Tie Lines
- Cost Allocation

These sections of this paper should not be considered draft OATT language.

## **Items for SPP's JOAs**

Below are the sections of this report which all or part of the section will be included in an SPP JOA.

- Data Sharing
  - Two Categories for Data Sharing
  - Multiregional Activities
- Website for Interregional Activities
- Joint Planning Committee
  - Membership
  - Responsibilities
  - Voting
  - Meetings
- Interregional Planning Stakeholder Advisory Committee
  - Membership
  - Responsibilities
  - Voting
  - Meetings
- Issues Review & Determining to Perform a Study
  - Issues Review
  - Determining to Perform a Study
  - Issues to Include in Study
- Scope Development
  - Issue Description
  - Data Inputs
  - Analysis
  - Timeline
  - Deliverables
- Model Development
- Analysis
  - Benefit Metrics
- Solution Development
- CSP Report
- SPP Regional Review
  - Regional Review Timeline
- Interregional Project Type
  - Projects Completely Inside One Planning Region
  - Tie Lines
- Cost Allocation

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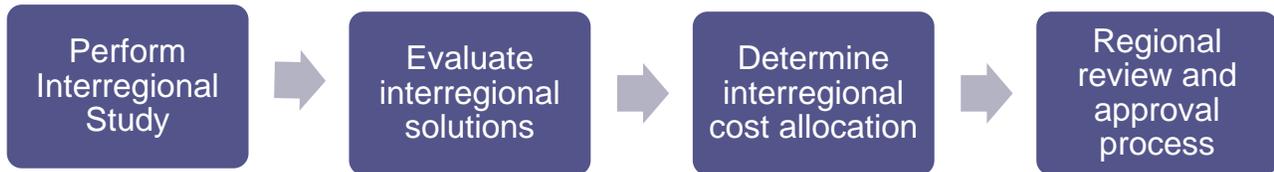
## Flowcharts

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- Annual Processes

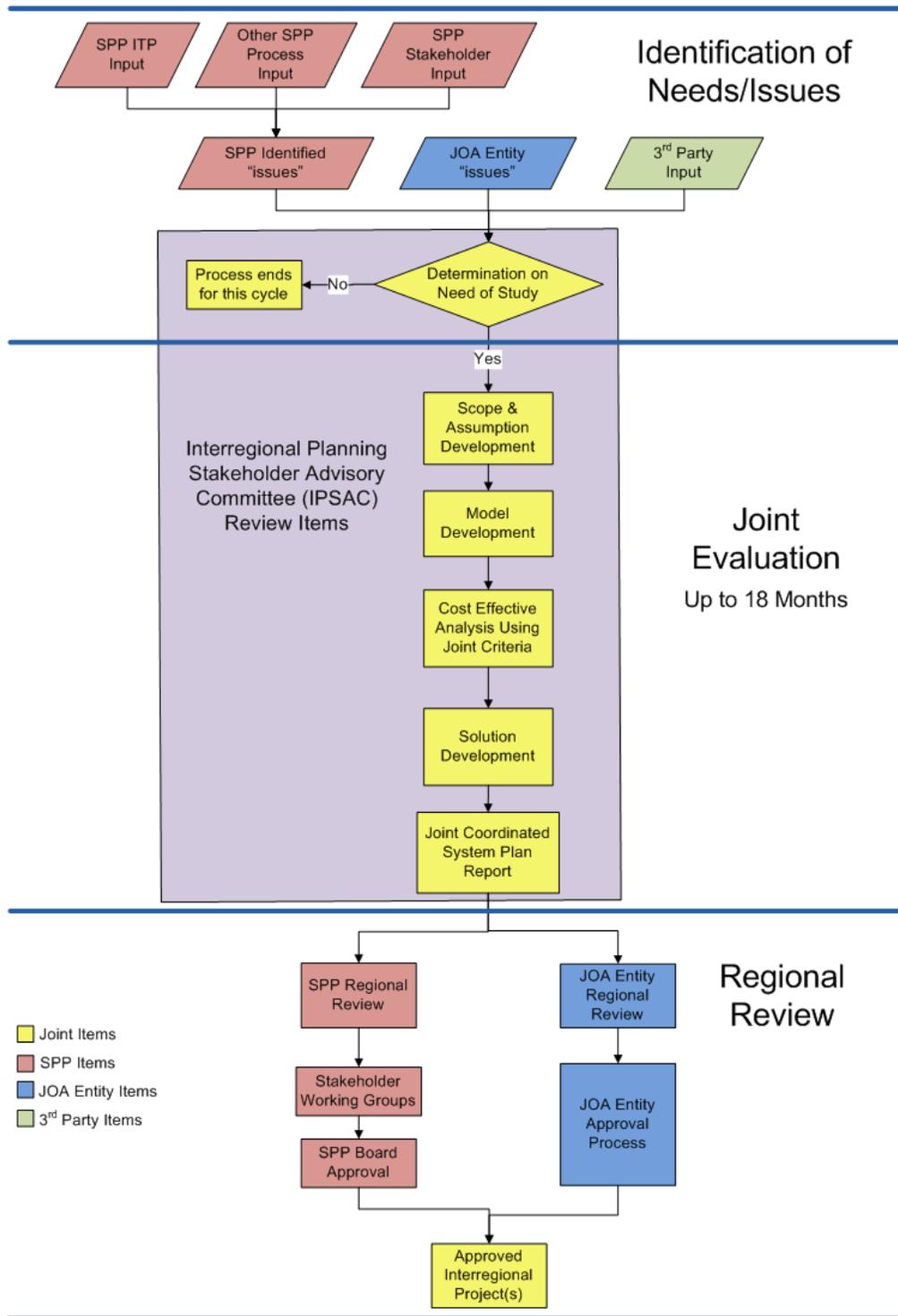


- Process when an interregional study is performed





# Proposed Interregional Process



8/14/2012 Version 3.1



Southwest Power Pool, Inc.  
ECONOMIC STUDIES WORKING GROUP MEETING  
TRANSMISSION WORKING GROUP MEETING

January 3, 2013  
Net Conference

• A G E N D A •

9:00 a.m. - 11:00 a.m.

- 1. Probabilistic Planning Business Case (Action Item)..... Antoine Lucas
- 2. SFOTF Report ..... Brett Hooton

*TWG Meeting only*

11:00 a.m. - 1:00 p.m.

- 3. 2013 ITPNT Report (Action Item) ..... Staff
- 4. BPR Reviews ..... Antoine Lucas
  - a. BPR-033 NTC Re-evaluation (Action Item)
  - b. BPR-020 ATP (Action Item)
- 5. Voltage Security Study (Action Item)..... Jody Holland
- 6. Teleconference schedule for 2013 ..... Rachel Hulett

## TWG Proxy

### Sunflower Electric, Al Tamimi for Noman Williams

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**From:** Williams, Noman [mailto:NWilliams@sunflower.net]  
**Sent:** Thursday, January 03, 2013 10:28 AM  
**To:** Rachel Hulett  
**Subject:** ESWG/TWG Proxy

Al Tamimi has my proxy for an TWG voting until I return.

***Noman Williams***

Vice President, Transmission Policy  
Sunflower Electric Power Corporation

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