Southwest Power Pool

ECONOMIC STUDIES WORKING GROUP

June 16th, 2016

8th Floor AEP Offices, Dallas, TX

• SUMMARY OF ACTIONS TAKEN •

1. Approved RR163, ITP Manual Reference Corrections.
2. Endorsed the TWG recommendation for the use of option 1 with regard to scenario 5 in the 2017 ITPNT.

Southwest Power Pool

ECONOMIC STUDIES WORKING GROUP

June 16th, 2016

8th Floor AEP Offices, Dallas, TX

• MINUTES •

Agenda Item 1 – Administrative Items

Agenda Item 1a - Call to Order, Introductions

Chair Alan Myers (ITC Great Plains) called the meeting of the Economic Studies Working Group (ESWG) to order at 8:00 AM, welcomed those in attendance, and asked for introductions.

There were 13 in-person participants and 56 web conference participants, representing 16 of 17 ESWG members. (Attachment 1 – June 16th, 2016 Attendance List)

Agenda Item 1b – Receipt of Proxies

Alan Myers (ITC Great Plains) asked for any proxy statements. One proxy was identified; Jon Iverson (OPPD) named Jon Shipman (OPPD) as his proxy. (Attachment 2 – Proxy Statements)

Agenda Item 1c – Review of Agenda

Chair Alan Myers (ITC Great Plains) presented the agenda for review and asked for any additions or corrections. (Attachment 3 – June 16th, 2016 ESWG Agenda)

> **Tim Owens (NPPD) made a motion; seconded by Pat McCool (KCPL) to adopt the agenda. The motion was approved unanimously.**

Agenda Item 2 – Review of Past Action Items

Kelsey Allen (SPP Staff) reviewed the list of past action items and asked for any comments or questions. The group asked if the action items discussed at the RARTF were formalized in their meeting minutes. Staff will investigate. (Attachment 4 – Past Action Items)

Agenda Item 3 – Consent Agenda

The consent agenda included the following items:

Meetings Minutes – May 18th-19th, 2016 (Attachment 5 – May 18th-19th, 2016 ESWG Minutes)

Alan Myers (ITC Great Plains) asked if any items should be removed from the consent agenda. Kelsey Allen (SPP) reviewed minor changes to the minutes since posted in the background materials.

> **Kurt Stradley (LES) made a motion; seconded by Leon Howell (OGE) to approve the minutes as amended. The motion was approved unanimously.**

Agenda Item 4 – Study Schedules

Agenda Item 4a – 2017 ITP10

Juliano Freitas (SPP) reviewed the 2017 ITP10 schedule. Jody Holland (SCMC) expressed concern regarding the model changes posted by SPP that will be evaluated for their impact on the posted needs for the study. (Attachment 6 – 2017 ITP10 Schedule)

Agenda Item 5 – RR163-ITP Manual Reference Correction

Clayton Mayfield (SPP Staff) reviewed RR163 which requests a Tariff change to update references from old transmission planning documents to the current ITP Manual. (Attachment 7 – Tariff RR163 ITP Manual Reference Corrections_ RTWG Approved 20160525)

Tim Owens (NPPD) made a motion; seconded by Bennis Weeks (SPS) to approve RR163. The motion was approved unanimously.

Agenda Item 6 – Scenario 5 in the 2017 ITPNT

Kirk Hall (SPP Staff) reviewed the proposal and TWG action on treatment of Scenario 5 modeling assumptions in the 2017 ITPNT. The MOPC assigned an action item to the TWG and ESWG to investigate the Scenario 5 modeling methodology for the 2017 ITPNT to incorporate thoughts of the Transmission Planning Improvement Task Force (TPITF) in order to address the TPITF concern with wind modeling in the summer peak models. The TWG approved the proposed option 1 to utilize an SPP Balancing Authority dispatch model coupled criteria for determination of Scenario 5 needs. (Attachment 8 - 2017 ITPNT Scenario 5)

Jody Holland (SCMCN) made a motion; seconded by Tim Owens (NPPD) to endorse the TWGs recommendation for the use of option 1 with regard to scenario 5 in the 2017 ITPNT. The motion was approved unanimously.

Agenda Item 7 – ITP Scope Standardization

Juliano Freitas (SPP Staff) reviewed a proposal for standardization of the ITP scope to consider recommendations of the TPITF. He stepped through the scope items to be reviewed and proposed a schedule for formalization over the next year. He overviewed the current process and a proposed future process for the load review, generation review, renewable policy survey, resource plan phase 1, resource plan phase 2, and resource siting plan. After discussion, SPP staff took feedback in preparation for development of future discussion materials on the following items:

ACTION ITEM: Staff to investigate the requirements for approval of a new standard ITP scope in order to determine the date of approval by the working groups needed prior to final approval by MOPC and the Board.

ACTION ITEM: Staff to coordinate with other SPP groups regarding requirements and opportunities for standardization of requesting and utilizing peak load data.

ACTION ITEM: Staff to investigate coordination opportunities regarding request for member hourly load data.

ACTION ITEM: Staff to develop examples and language for tackling synergies of powerflow and economic generation data.

ACTION ITEM: Staff to develop a process for annual update of the economic model with vendor data.

ACTION ITEM: Staff to develop criteria and methodology to developing resource plans absent a software tool.

(Attachment 9 – ITP Scope Standardization)

Closing Items

Chair Alan Myers (ITC Great Plains) requested other items meriting discussion.

List of action items from the meeting:

1. Staff to investigate the requirements for approval of a new standard ITP scope in order to determine the date of approval by the working groups needed prior to final approval by MOPC and the Board.
2. Staff to coordinate with other SPP groups regarding requirements and opportunities for standardization of requesting and utilizing peak load data.
3. Staff to investigate coordination opportunities regarding request for member hourly load data.
4. Staff to develop examples and language for tackling synergies of powerflow and economic generation data.
5. Staff to develop a process for annual update of the economic model with vendor data.
6. Staff to develop criteria and methodology to developing resource plans absent a software tool.

The meeting was adjourned at 2:20 PM.

Respectfully Submitted,

Kelsey Allen
ESWG Secretary

Southwest Power Pool, Inc.

ECONOMIC STUDIES WORKING GROUP

June 16, 2016

AEP Office/Dallas, TX

• ATTENDANCE LIST •

Name	Company
Kelsey Allen	SPP
Tim Owens	NPPD
Jason Davis	SPP
Alan Myers	ITC
Leon Howell	OGE
Meena Thomas	Texas PUC
Jason Chadwick	OCC
Bethany King	EDE
Natasha Henderson	GSEC
Bennie Weeks	Xcel Energy / SPS
Pat McCool	KCP&L
Jarrod Wolford	NTEC
Juliano Fontana	SPP

Name	Email
Adam Bell (SPP)	abell@spp.org
Al Tamimi	atamimi@sunflower.net
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Amber Greb	agreb@spp.org
Ben Abing	babing@itctransco.com
Bennie Weeks	bennie.weeks@xcelenergy.com
Bethany King	
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Evan Racine-Johnson GSEC	eracine-johnson@gsec.coop
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Jason Mazigian	jmazigian@bepc.com
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Jason Shook (GDS/ETEC)	jason.shook@gdsassociates.com
Jeremy Harris (WERE)	jeremy.harris@westarenergy.com
Jeremy Severson (BEPC)	jseverson@bepc.com
Jody Holland	jholland@gridliance.com
John Bell (KCC)	j.bell@kcc.ks.gov
John Boshears	john.boshears@cityutilities.net
John Boshears	john.boshears@cityutilities.net
Jon Shipman (OPPD)	jeshipman@oppd.com
Jordan Schmick	jordan.h.schmick@xcelenergy.com
Jordan Schmick	jordan.h.schmick@xcelenergy.com
Jordan Schmick	jordan.h.schmick@xcelenergy.com
Juliano Freitas - SPP	jfreitas@spp.org
justin radl	justin.w.radl@xcelenergy.com
Kelsey Allen	kallen@spp.org
Kelsey Zenko	kzenko@spp.org
Kirk Hall	khall@spp.org

Kurt Stradley	kstradley@les.com
Leon Howell	
Meena Thomas	
michael massery (AECC)	michael.massery@aecc.com
Michael Watt (OMPA)	mwatt@ompa.com
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Nicholas Gangi	nicholas.gangi@eversource.com
Nikki Roberts (SPP)	nroberts@spp.org
Pat Hayes	phayes@ameren.com
Pat McCool	
Randy Collier (CUS)	randy.collier@cityutilities.net
Ray Brush	ray.brush@northwestern.com
Ray Brush (NWE)	ray.brush@northwestern.com
Ross Hohlt	dhohlt@ameren.com
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Steve Gaw	rsgaw1@gmail.com
Steve Gaw	rsgaw1@gmail.com
Steve Gaw	rsgaw1@gmail.com
Tim Owens	
Todd Tadych (DATC)	ttadych@atcllc.com
Yan Du	ydu@lspower.com

Company	Attendance
	Webex
	Webex
ITC	In Person
	Webex
	Webex
	In Person
EDE	In Person
	Webex
	Webex
	Webex
	Webex
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	Webex
	Webex
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	Webex
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NTEC	In Person
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SPP	In Person
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SPP	In Person
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	Webex
OGE	In Person
Texas PUC	In Person
	Webex
	Webex
GSEC	In Person
	Webex
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	Webex
KCPL	In Person
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NPPD	In Person
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	Webex

1. **Jon Iverson (OPPD) proxy to Jon Shipman (OPPD)**

From: Iverson, Jon
Sent: Wednesday, June 15, 2016 8:50 PM
To: Kelsey Allen
Cc: Shipman, Jon; Stradley, Kurt
Subject: **External Email** OPPD Proxy for June 16 ESWG meeting

Kelsey,
Jon Shipman of OPPD will have my proxy for the ESWG meeting on Thursday, June 16. If Jon Shipman is unable to attend, then Kurt Stradley will have OPPD's proxy.
Thanks,
Jon Iverson
OPPD
ESWG Member

ECONOMIC STUDIES WORKING GROUP

June 16th, 2016

8th Floor AEP Offices – Dallas, TX

• A G E N D A •

8:00am – 3:00pm

1. Administrative items
    a. Call to Order, Introductions..... Alan Myers (5 minutes)
    b. Receipt of Proxies ..... Kelsey Allen (1 minute)
    c. Review of Agenda[1] ..... Alan Myers (1 minute)
2. Review of Past Action Items[1] ..... Kelsey Allen (5 minutes)
3. Consent Agenda[1] (Approval Item)..... Alan Myers (5 minutes)
    a. Approval of Meeting Minutes – May 18th-19th, 2016
4. Study Schedules..... Juliano Freitas (15 minutes)
    a. 2017 ITP10[1]
5. RR163 – ITP Manual Reference Correction[1] (Approval Item)..... Clayton Mayfield (15 minutes)
6. Scenario 5 in the 2017 ITPNT[1] (Approval Item) .....Kirk Hall (20 minutes)
7. ITP Scope Standardization[1] ..... All (240 minutes)
8. Closing Items..... All (5 minutes)
    a. Summary of Action Items (Kelsey Allen)
    b. Future Meetings
        i. July 21st, 2016: VistaTech at Schoolcraft College, Livonia, MI
        ii. August 17th – 18th, 2016: TBD, Billings, MT
        iii. September 15th, 2016: 8th Floor AEP Offices, Dallas, TX
        iv. October 20th, 2016: OMPA Offices, Edmond, OK
        v. November 17th, 2016: SPP Corporate Office, Little Rock, AR
        vi. December 8th, 2016: 8th Floor AEP Offices, Dallas, TX

[1] Background Material Included

Southwest Power Pool, Inc.

ECONOMIC STUDIES WORKING GROUP

Pending Action Items Status Report

June 16th, 2016

	Action Item	Date Originated	Status	Comments
057	SPP staff will write a straw-man procedure or portion of the ITP manual that deals with conventional and wind generation planning and siting within the ITP process. The process should be in place by the Spring of 2015.	August 23rd, 2012	In Progress Staff	A draft resource siting whitepaper will be developed for review mid-2016.
151	Staff to look into optional software tools for use in ITP studies.	May 20th, 2015	In Progress Staff	Staff is meeting with software vendors and users and expects to have a recommendation on any potential resource planning software changes by 4th quarter 2016.
160	SPP Staff and the ESWG are to formalize standard procedures for data requests and member review of information related to ITP studies.	January 21st, 2016	In Progress Staff/ESWG	Combined item representative of AI148 and AI149.
161	Staff to report on carbon emissions as the 2017 ITP10 study moves forward through the different milestones.	February 24th-25th, 2016	In Progress Staff	
163	SPP Staff and members to prepare for discussion on scope standardization and prioritization of discussion items.	April 21st, 2016	In Progress Staff/Members	
165	ESWG to review the assumed benefit of mandated reliability projects	May 13th, 2016 RARTF	In Progress ESWG	
166	ESWG to review the impacts of using the system reconfiguration hybrid approach for the Assumed Benefit of Mandated Reliability Projects	May 13th, 2016 RARTF	In Progress ESWG	
167	ESWG to review the classification of projects in the ITP process	May 13th, 2016 RARTF	In Progress ESWG	
168	Staff and the ESWG to evaluate the issues seen in the DC to AC model	May 18th-19th,	In Progress	

	conversion process.	2016	Staff/ESWG	
169	Staff to investigate the requirements for approval of a new standard ITP scope in order to determine the date of approval by the working groups needed prior to final approval by MOPC and the Board.	June 16th, 2016	In Progress Staff	
170	Staff to coordinate with other SPP groups regarding requirements and opportunities for standardization of requesting and utilizing peak load data.	June 16th, 2016	In Progress Staff	
171	Staff to investigate coordination opportunities regarding request for member hourly load data.	June 16th, 2016	In Progress Staff	
172	Staff to develop examples and language for tackling synergies of powerflow and economic generation data.	June 16th, 2016	In Progress Staff	
173	Staff to develop a process for annual update of the economic model with vendor data.	June 16th, 2016	In Progress Staff	
174	Staff to develop criteria and methodology to developing resource plans absent a software tool.	June 16th, 2016	In Progress Staff	

Southwest Power Pool

ECONOMIC STUDIES WORKING GROUP

May 18th-19th, 2016

Embassy Suites Downtown, Omaha, NE

• SUMMARY OF ACTIONS TAKEN •

1. Approved the proposed changes to the ITP Manual, as amended [regarding details of data request administration for modeling and assumptions information and the process for inclusion of planned resources in the long-term assessments].
2. Approved the Staff recommendation to invalidate AC overloads when also defined as a DC constraint or related to a DC constraint.

Southwest Power Pool

ECONOMIC STUDIES WORKING GROUP

May 18th-19th, 2016

Embassy Suites Downtown, Omaha, NE

• MINUTES •

Agenda Item 1 – Administrative Items

Agenda Item 1a - Call to Order, Introductions

Chair Alan Myers (ITC Great Plains) called the meeting of the Economic Studies Working Group (ESWG) to order at 1:00 PM, welcomed those in attendance, and asked for introductions.

There were ~~a good number of in-person participants and 58~~75 ~~web conference~~ participants, representing 17 of 17 ESWG members. (Attachment 1 – May 18th-19th, 2016 Attendance List)

Agenda Item 1b – Receipt of Proxies

Alan Myers (ITC Great Plains) asked for any proxy statements. Two proxies were identified; Jody Holland (SCMCN) named Noman Williams (SCMCN) as his proxy and Natasha Henderson (GSEC) named Evan Racine-Johnson (GSEC) as her proxy (beginning 5/19/16 9:39AM). (Attachment 2 – Proxy Statements)

Agenda Item 1c – Review of Agenda

Chair Alan Myers (ITC Great Plains) presented the agenda for review and asked for any additions or corrections. (Attachment 3 – May 18th-19th, 2016 ESWG Agenda)

Kurt Stradley (LES) made a motion; seconded by Bethany King (EDE) to adopt the agenda as modified. The motion was approved unanimously.

Agenda Item 2 – Review of Past Action Items

Kelsey Allen (SPP Staff) reviewed the list of past action items. Juliano Freitas (SPP) reviewed the list of action items given to the ESWG by the RARTF on their May 13th conference call. (Attachment 4 – Past Action Items)

Agenda Item 3 – Consent Agenda

The consent agenda included the following items:

Meetings Minutes – April 21st, 2016 (Attachment 5 – April 21st, 2016 ESWG Minutes)

Alan Myers (ITC Great Plains) asked if any items should be removed from the consent agenda.

The consent agenda was approved unanimously.

Agenda Item 4 – RCAR II Update

Paul Suskie (SPP Staff) began the RCAR II update with a review of the process by which Highway/Byway Cost Allocation is reviewed, principles of the RARTF, and the recommendations developed through the RCAR I Lessons Learned process. (Attachment 6 - RARTF II ESWG Presentation)

Any questions or comments regarding the results of the RCAR II analysis should be submitted via the Stakeholder Comments Form to Ben Bright (bbright@spp.org) by June 3rd, 2016. An RCAR II Lessons Learned process will be forthcoming with focus on adjustments to the process for RCAR III. (Attachment 7 - SPP Stakeholder Comments Form) (Attatchment 8 - RCAR II Stakeholder Feedback Process - UPDATED 051516)

Agenda Item 4a – Results Review

Amber Greb (SPP Staff), Josh Ross (SPP Staff) and Akarsh Sheilendranath (The Brattle Group) reviewed the results of the RCAR II metrics analysis. The review focused on helping the stakeholders understand the results and answer questions related to the calculations and modeling assumptions driving the results. (Attachment 9 – RCAR II Results Review)

Agenda Item 4b – Schedule

Juliano Freitas (SPP Staff) reminded the group of next steps for the RCAR II study. (Attachment 10 – RCAR II Schedule)

Agenda Item 5 – 2017 ITP10 Schedule

Juliano Freitas (SPP Staff) gave an update on the status of the 2017 ITP10. The needs assessments are continuing on with the updates to the PROMOD event files. The DPP window is currently scheduled to open June 1st, 2016. (Attachment 11 - 2017 ITP10 Schedule_Updated)

Agenda Item 6 – ITP Manual Update

Kelsey Allen (SPP Staff) reviewed the proposed changes to the ITP manual. The updates incorporated the group's request to clarify certain portions of the resource addition request process for the long-term ITP assessments as well as include the process by which stakeholders would be notified when such requests are made by SPP staff. (Attachment 12 - 2015 ITP Manual_Append_ProposedGenEdit_rev2)

Leon Howell (OGE) made a motion; seconded by Kurt Stradley (LES) to approve the proposed changes to the ITP manual, as amended. The motion was approved unanimously.

Agenda Item 7 – Coordination of Reliability and Economic Issues

Kelsey Allen (SPP Staff) reviewed a staff proposal for the coordination of reliability and economic issues in the current ITP assessment. Staff has identified certain DC constraints that are also being identified as AC thermal overloads in the 2017 ITP10 model set. Staff recognizes differences in the economic modeling versus AC powerflow modeling as well as shortcomings in the DC to AC conversion process that can explain the differences in loadings between the two model sets. Staff's recommendation is that because the DC model was able to redispatch around the defined constraints, any AC overloads that are equivalent or related to a DC constraint should not be defined as a transmission need for the study. Some members were concerned with not being given the opportunity to review the invalidated list while others expressed concern with the issues identified by staff in the overall process. (Attachment 13 – Coordination of Reliability and Economic Issues)

Bennie Weeks (SPS) made a motion; seconded by Tim Owens (NPPD) to approve the Staff recommendation to invalidate AC overloads when also defined as a DC constraint or related to a DC constraint. The motion was approved with three abstentions, Pat McCool (KCPL), Gayle Nansel (Western), Jeremy Severson (Basin).

Pat McCool abstained for the following reasons: ~~[None provided]~~"I abstained from the vote due to uncertainty of how this would affect the ITP studies and DPP process and also due to the issue appearing to be more appropriate for consideration by the TWG."

Jeremy Severson abstained for the following reasons: "The reason I abstained is due to the lack of understanding/examples of how this would affect the number of deficiencies and needs in an ITP study."

Gayle Nansel abstained for the following reasons: "I abstained because ambiguity around both what would be on the list and how these would be handled if they were posted with the needs during the DPP window."

ACTION ITEM: Staff and the ESWG to evaluate the issues seen in the DC to AC model conversion process.

Agenda Item 8 – Guidelines for Addressing Congested Interfaces

Kelsey Allen (SPP Staff) reviewed a staff proposal to provide additional information regarding how to accurately address any Power Transfer Distribution Factor (PTDF) flowgates that may show up as needs for the 2017 ITP10 study. SPP staff is proposing to provide additional scopes of work that must be completed when targeting a rating change of a congested PTDF flowgate in order to properly address the underlying thermal, voltage, or stability issues that drive the rating of the flowgate. SPP staff suggested that the scope and subsequent results of these studies would need to be vetted by planning and operations personnel at both SPP and the member companies with ownership of the flowgate Stakeholders generally did not have an issue with this concept, but expressed concern that SPP does not yet have a plan for who all would need to be involved (i.e. flowgates with multiple stakeholder parties involved) as well as how these results would be reviewed and vetted in the given solution development timeframe. A straw poll was taken with 11 for and 0 against. Staff will be moving forward with this process in order to provide Stakeholders with the proper information to evaluate any congested flowgates posted as needs for the 2017 ITP10. (Attachment 14 – Guidelines for Addressing Congested Interfaces)

Agenda Item 9 – Transmission Planning Improvement Task Force (TPITF) Discussion

Agenda Item 9a – Task Force Activities Update

The TPITF has not met since the last ESWG meeting. Juliano Freitas (SPP Staff) gave a brief update of Staff's work related to TPITF efforts, mainly focused on synchronization of schedules and personnel requirements that will be presented at the next TPITF meeting on May 26th, 2016.

Agenda Item 9b – ITP Scope Standardization

Kelsey Allen (SPP Staff) briefly introduced a presentation to kickstart the ITP scope standardization recommendation from the TPITF. Staff is asking members to review the presentation to prepare for more detailed discussions in upcoming meetings. (Attachment 15 – ITP Scope Standardization)

Email Voting 5/26 – 6/1

> **Tim Owens (NPPD) made a motion; seconded by Jon Iverson (OPPD) to approve the 2016 Variable Generation Integration Study Phase 2 Scope, as provided via email on May, 24, 2016. The motion was approved with 16 in favor, none against, and no abstentions.**

Closing Items

Chair Alan Myers (ITC Great Plains) requested other items meriting discussion.

List of action items from the meeting:

1. ESWG to review the assumed benefit of mandated reliability projects.
2. ESWG to review the impacts of using the system reconfiguration hybrid approach for the Assumed Benefit of Mandated Reliability Projects.
3. ESWG to review the classification of projects in the ITP process.
4. Staff and the ESWG to evaluate the issues seen in the DC to AC model conversion process.

The meeting was adjourned at 11:20 AM.

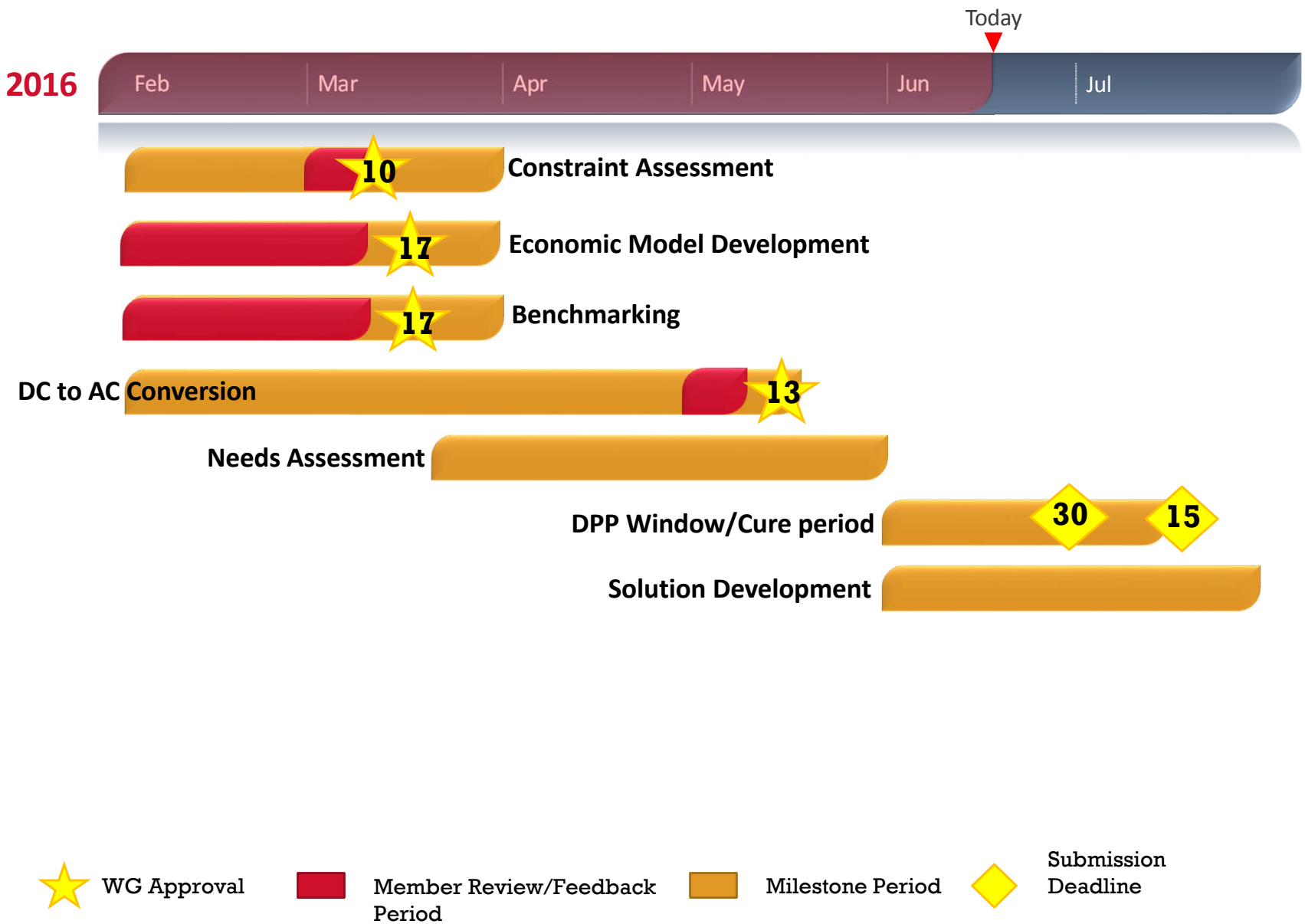
Respectfully Submitted,

Kelsey Allen
ESWG Secretary

2017 ITP10 Schedule

ESWG

June 16th, 2016


Today
2016
Feb
Mar
Apr
May
Jun
Jul
2016
10
Constraint Assessment
17
Economic Model Development
17
Benchmarking
DC to AC Conversion
13
Needs Assessment
DPP Window/Cure period
30
15
Solution Development
WG Approval
Member Review/Feedback Period
Milestone Period
Submission Deadline

Revision Request Recommendation Report

RR #: 163	Date: 4/19/2016
RR Title: ITP Manual Reference Corrections	
SUBMITTER INFORMATION	
Submitter Name: Liz Gephardt	**Company:** Southwest Power Pool
Email: lgephardt@spp.org	**Phone:** 501-482-2236
EXECUTIVE SUMMARY AND RECOMMENDATION FOR MOPC AND BOD ACTION	
OBJECTIVE OF REVISION	

Objectives of Revision Request:

Describe the problem/issue this revision request will resolve.

The Tariff currently requires that certain material be contained in a "Transmission Network Economic Modeling & Methods manual" and a "SPP Transmission Expansion Planning Manual" on the SPP website. These manuals do not exist, however all required material is contained in the "Integrated Transmission Planning Manual."

Describe the benefits that will be realized from this revision.

This RR correctly identifies the "Integrated Transmission Planning Manual" on the SPP website as the document which covers the various requirements referenced in the Tariff.

SPP STAFF ASSESSMENT

IMPACT

Will the revision result in system changes ☐ **No** ☐ **Yes**

Summarize changes:

Will the revision result in process changes? ☐ **No** ☐ **Yes**

Summarize changes:

Is an Impact Assessment required? ☐ **No** ☐ **Yes**

If no, explain:

Estimated Cost: $		**Estimated Duration:** months
Primary Working Group Score/Priority:		
SPP DOCUMENTS IMPACTED		
☐ **Market Protocols**	**Protocol Section(s):**	**Protocol Version:**
☐ **Operating Criteria**	**Criteria Section(s):**	**Criteria Date:**
☐ **Planning Criteria**	**Criteria Section(s):**	**Criteria Date:**
☒ **Tariff**	**Tariff Section(s):** Attachment O, Sections II, IV, VII	
☐ **Business Practice**	**Business Practice Number:**	
WORKING GROUP REVIEWS AND RECOMMENDATIONS List Primary and any Secondary/Impacted WG Recommendations as appropriate		
Primary Working Group: **RTWG**	**Date: 5/26/2016** **Action Taken: Unanimously Approved** **Abstained:** **Opposed:**	
Reason for Opposition:		
Secondary Working Group: **PCWG**	**Date: 5/6/2016** **Action Taken: Unanimously Approved** **Abstained:** **Opposed:**	
Reasons for Opposition:		
Secondary Working Group: **RCWG**	**Date: 6/7/2016** **Action Taken: Unanimously Approved** **Abstained:** **Opposed:**	
Reasons for Opposition:		
Secondary Working Group:	**Date:** **Action Taken:** **Abstained:** **Opposed:**	
Reasons for Opposition:		

MOPC	**Date:** **Action Taken:** **Abstained:** **Opposed:**
Reasons for Opposition:	
BOD/Member Committee	**Date:** **Action Taken:** **Abstained:** **Opposed:**
Reasons for Opposition:	
COMMENTS	
Comment Author:	
Date Comments Submitted:	
Description of Comments:	
Status:	
COMMENTS	
Comment Author:	
Date Comments Submitted:	
Description of Comments:	
Status:	
PROPOSED REVISION(S) TO SPP DOCUMENTS	
Market Protocols	

Tariff (OATT)

II. Roles and Responsibilities

References to the "stakeholder working group" is a generic term that references those working group(s) as defined in the SPP Bylaws, Sections 3 through 6 that are charged with the transmission planning process. The current names of all the working groups shall be posted on the SPP website.

1. Division of Responsibilities

a) The rights, powers and obligations for planning are set forth in the SPP Membership Agreement in (i) Article 2.0 for the Transmission Provider and (ii) Article 3.0 for the Members. The division of responsibility between the Transmission Provider and the Members is set forth in the SPP Criteria and in ~~this~~ Attachment O of this Tariff. The SPP Membership Agreement, the SPP Criteria and the Tariff shall be posted on the SPP website.

b) The Transmission Provider shall be responsible for developing the list of projects in accordance with the stakeholder process set forth in Sections II, III and V of this Attachment O, and including inter-regional coordination set forth in Section VIII of this Attachment O.

c) The Transmission Provider shall perform transmission planning studies to assess the reliability and economic operation of the Transmission System in accordance with Section III of this Attachment O.

d) As inputs to the planning process, the Transmission Provider shall include and maintain requirements to serve existing commitments for long-term transmission service and interconnection service in accordance with Section III.7 of this Attachment O and any applicable roll-over rights as set out in Section 2.2 of the~~e~~is Tariff. It shall also take into account all previously approved projects.

e) The Transmission Provider shall review, and include as appropriate, all local area upgrades to meet local area reliability criteria as proposed by the Transmission Owners including those plans developed by Transmission Owners that have their own FERC approved local planning process to ensure coordination of the projects set forth in such plans with the potential solutions developed in the regional planning process.

f) The Transmission Provider shall review and include, as appropriate, all reasonable expected demand resource, transmission, or generation options identified by stakeholders.

g) The Transmission Provider shall describe the details regarding expansion planning methodology, criteria, assumptions and data in the ~~SPP Transmission Expansion Planning~~Integrated Transmission Planning Manual which shall be posted on the SPP website.

h) In accordance with its NERC reporting requirements, the Transmission Provider shall publish an annual reliability report that shall include a list of the following:

i) Regional upgrades required to maintain reliability in accordance with the NERC Reliability Standards and SPP Criteria;

ii) Zonal upgrades required to maintain reliability in accordance with more stringent individual Transmission Owner planning criteria; and

iii) Upgrades developed with neighboring Transmission Providers, including results from the coordinated system plans.

2) Stakeholder Working Groups

a) The purpose of the stakeholder working groups is to provide technical advice, assistance and oversight to the Transmission Provider in all aspects of the regional, sub-regional and local planning process, including but not limited to:

i) Review and development of coordinated planning among the Transmission Provider and the Transmission Owners including accepted Network Upgrades developed by those Transmission Owners that have their own FERC approved local planning process to meet local area reliability criteria;

ii) Review and development of regional planning criteria;

iii) Review and development of Available Transfer Capability related calculation criteria as specified in Attachment C ~~to the~~of this Tariff;

iv) Review and development of transmission rating criteria; ~~*and*~~

v) Compliance with NERC Reliability Standards concerning transmission assessment, transfer capability and ratings of transmission facilities*;*

vi) Review and development of the list of transmission needs driven in whole or in part by Public Policy Requirements for which transmission solutions will be evaluated; and

vii) Review of Interregional Projects in accordance with Section IV.6 (e) of this Attachment O.

b) All the stakeholder working group representation shall be appointed and chaired in accordance with Article 3.0 of the SPP Bylaws. All meetings of the stakeholder working groups are open to all entities.

c) Voting in the various stakeholder working groups shall conform to Article 3.9 of the SPP Bylaws.

d) The data, information, and technical support necessary for the Transmission Provider to perform studies as required by the planning process and to develop the regional reliability projects are provided by the Transmission Owners, Transmission Customers and Generation Interconnection Customers and other entities. This process is described in Section VII of this Attachment O.

e) Stakeholder working groups that work with the Transmission Provider on transmission planning shall meet at least quarterly and additional meetings, web conferences and teleconferences shall be scheduled as needed. Teleconference capability will be made available for stakeholder working group meetings. Notice of meetings of the stakeholder working groups shall be posted on the SPP website and distributed via email distribution lists. Meeting agendas and minutes shall be posted on the SPP website.

3) Participation by State Regulators

In accordance with the SPP Bylaws, any regulatory agency having utility rates or services jurisdiction over a Member may participate fully in all SPP planning activities.

4) Adherence to Regional Planning Criteria

i) The regional planning criteria are comprised of the NERC Reliability Standards and SPP Criteria.

ii) The regional planning criteria may change from time to time based upon the then current process for changing reliability criteria.

iii) 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.

5) Use of Local Planning Criteria

i) 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.

ii) For each annual planning cycle, Transmission Owners, including those Transmission Owners that have their own FERC approved local planning process, 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 in the SPP Transmission Expansion Plan.

iii) Transmission Owner planning criteria and assumptions 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's planning criteria shall be made available via an electronic link on the SPP website.

iv) The individual planning criteria of each Transmission Owner, including those Transmission Owners that have their own FERC approved local planning process, shall be the basis for determining whether a reliability violation exists for which a need for a new Zonal Reliability Upgrade should be considered.

v) The Transmission Owner shall apply its local planning criteria comparably to all load in its service territory.

vi) Transmission Owners' company-specific planning criteria and local planning processes must provide for: (a) the identification of transmission needs driven in whole or in part by Public Policy Requirements; and (b) the evaluation of potential solutions to meet those needs.

IV. Other Planning Studies

1) Sponsored Upgrade Studies

Any entity may request that a Sponsored Upgrade be built. SPP will evaluate the impact of any proposed Sponsored Upgrade on Transmission System reliability and identify any necessary mitigation of these impacts. The proposed Sponsored Upgrade shall not be approved as a Sponsored Upgrade if it has been previously identified and included in the current SPP Transmission Expansion Plan as either 1) an upgrade required to satisfy requests for Transmission Service; 2) an upgrade required to satisfy requests for generation interconnection; 3) an approved ITP Upgrade; 4) an upgrade within approved Balanced Portfolios; or 5) an approved high priority upgrade. 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.

2) High Priority Studies

a) The Transmission Provider shall perform high priority studies in accordance with ~~this~~ Attachment O of this Tariff and the ~~Transmission Network Economic Modeling & Methods~~Integrated Transmission Planning ~~m~~Manual which shall be maintained on the SPP website.

b) Potential Balanced Portfolios, as developed through the process specified in Section IV.3 of this Attachment O, shall be considered to be high priority studies.

c) The stakeholders may request high priority studies, including a request for the Transmission Provider to study potential upgrades or other investments necessary to integrate any combination of resources, whether demand resources, transmission, or generation, identified by the stakeholders. 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 this Tariff. 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.2.c of this Attachment O.

d) 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.

e) Each study shall include:

i) Quantification of benefits and costs in accordance with this Attachment O and the ~~Transmission Network Economic Modeling and Methods~~ Integrated Transmission Planning ~~m~~Manual; and

ii) An analysis of the sensitivity of the economics of the upgrades included in the high priority study to changes in assumptions.

f) The Transmission Provider shall solicit input from the stakeholders and the Regional State Committee regarding the appropriate sensitivity analyses to be performed.

g) 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, any third party impacts, 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 Tariff 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.

h) The Transmission Provider may recommend, based on the results of a high priority study, a high priority upgrade for inclusion in the SPP Transmission Expansion Plan in accordance with the approval process set forth in Section V of this Attachment O.

3) Evaluation of Potential Balanced Portfolios

a) The Transmission Provider shall solicit input from stakeholders on combinations of potential economic upgrades to be evaluated as potential Balanced Portfolios.

b) Each economic upgrade to be included in a potential Balanced Portfolio:

i) Must include a 345 kV or higher voltage facility;

ii) 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

iii) 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.

iv) 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.

c) The Transmission Provider shall determine for each Zone the net present value of the revenue requirements of each potential Balanced Portfolio as follows:

i) 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.

ii) 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.

iii) 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.

iv) 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.

v) 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.

vi) 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.

vii) 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.

viii) 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.

d) The Transmission Provider shall determine for each Zone the net present value of the benefits of each potential Balanced Portfolio as follows:

i) 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.

ii) 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.5 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.

iii) 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.

iv) 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.

e) A potential Balanced Portfolio shall meet the following conditions:

i) Cost Beneficial: The sum of the benefits of the potential Balanced Portfolio determined in Section IV.3.d of this Attachment O must equal or exceed the sum of the costs determined in Section IV.3.c of this Attachment O; and

ii) Balanced: For each Zone, the sum of the benefits of the potential Balanced Portfolio determined in Section IV.3.d of this Attachment O must equal or exceed the sum of the costs determined in Section IV.3.c of this Attachment O. Additionally, the balance may be achieved through the provisions set forth in Section IV.4 of this Attachment O.

f) 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 VII (Information Exchange) and Section IV.2 (High Priority Studies) of this Attachment O, including the requirements for treatment of confidential information.

4) Options for Achieving a Balanced Portfolio

a) Section IV.3 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.3.c exceed the benefits allocated to the Zone in Section IV.3.d, including any additional costs or benefits derived from the application of the provisions in this Section IV.4 of this Attachment O.

b) 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.3.b.i and ii of this Attachment O.

c) 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:

i) 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;

ii) Transfer from the Base Plan Zonal Annual Transmission Revenue Requirement first, then, if necessary, transfer from the Zonal Annual Transmission Revenue Requirement; and

iii) For each Zone, meet the conditions specified in Section IV.3.e.ii of this Attachment O.

5) Development of Additional Benefit Metrics *for Balanced Portfolios*

a) The 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:

i) Reduction in system losses;

ii) Differing environmental impacts;

iii) Improvement to capacity margin and operating reserve requirements;

iv) Energy, capacity and ancillary service market facilitation;

v) Increased competition in wholesale markets;

vi) Reliability enhancement, including storm hardening and black start capability; and

vii) Critical infrastructure and homeland security.

b) 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 Tariff amendments.

6) Evaluation of Proposed Interregional Projects

a) Proposed Interregional Projects shall be developed through the Transmission Provider's participation in an Interregional Planning Process with one or more Interregional Planning Regions in accordance with the provisions of Section VIII of this Attachment O.

b) The Transmission Provider shall facilitate a regional review of the proposed Interregional Projects identified in the Coordinated System Plan ("CSP") report developed and issued pursuant to the applicable Interregional Planning Process. The regional review will be subject to the timelines identified in the respective Interregional Planning Region procedures in accordance with the applicable Addendum(s) to this Attachment O.

c) The Transmission Provider shall, in consultation with stakeholders, develop the Regional Review Methodology which shall be posted on the Transmission Provider's website. The methodology will contain, at a minimum, the specific procedures to:

i. Determine the assumptions and criteria necessary to complete the regional review of proposed Interregional Projects.

ii. Determine the regional models to be used in the evaluation of proposed Interregional Projects.

iii. Determine the appropriate updates to the regional models to be used in the evaluation of proposed Interregional Projects.

iv. Quantify the benefits of each proposed Interregional Project using the Transmission Provider's regional benefit metrics consistent with Section III.6 of this Attachment O.

d) For an Interregional Project that is reviewed pursuant to the Regional Review Methodology, the Transmission Provider shall perform the following types of transmission planning studies:

i. Projects Addressing Reliability Issues Description of Analyses: The study scope will determine what types of analyses will be performed. These analyses will be based on the issue that is being addressed by the interregional transmission project. At a minimum a steady state N-1 analysis will be performed. If needed, the scope will also include directives to perform stability and/or dynamic analyses. Additional analyses can be performed if determined to be needed by the Transmission Provider, in consultation with the stakeholder working group assigned to analyze transmission reliability issues.

ii. Projects Addressing Economic Issues Description of Analyses: The analyses that will be performed will be based on the benefit metrics that will be used as determined by the Transmission Provider, in consultation with the stakeholder working group

assigned to analyze economic issues. At a minimum a security constrained unit commitment /security constrained economic dispatch analysis will be utilized for the calculation of adjusted production cost. Additional analyses will be included in the scope as determined by the Transmission Provider, in consultation with the stakeholder working groups, on what metrics to utilize.

iii. Projects Addressing Public Policy Issues Description of Analyses: Public policy projects will be evaluated to determine whether or not the transmission project will aid in meeting the applicable public policy requirement, and if so, is it more efficient or cost effective than regional solutions. The analysis will use a security constrained economic dispatch and unit commitment model to perform a curtailment and dispatch study. Additional analyses performed in the latest ITP10 may also be utilized as determined by the Transmission Provider, in consultation with the applicable stakeholder working groups.

e) For each regional review of a proposed Interregional Project, the Transmission Provider shall publish a report which includes, but is not limited to, the following:

i. The results of the regional review analysis and a comparison to the results contained in the CSP report;

ii. The study input assumptions and criteria used to assess the proposed Interregional Project;

iii. The proposed Interregional Project’s reliability impacts on the Transmission Provider’s system and impacts on third parties not participating in the applicable Interregional Planning Process;

iv. Any expected benefits of the proposed Interregional Project; and

v. The Transmission Provider shall make a recommendation whether to approve the proposed Interregional Project and the allocation of proposed Interregional Project costs between the Interregional Planning Regions.

f) The Transmission Provider's report shall be posted on the Transmission Provider's website. If the Transmission Provider's report contains confidential information in accordance with the provisions of the Tariff, the SPP Membership Agreement, or CEII requirements the report will be password protected to preserve the confidentiality of information and a redacted version of the report shall be posted on the Transmission Provider's website. The redacted version shall include instructions for acquiring the complete version of the report.

g) The Transmission Provider's report shall be reviewed by the appropriate stakeholder group(s) in accordance with the provisions of Section II of this Attachment O. The stakeholder group(s) and the Transmission Provider will each provide a recommendation to the Markets and Operations Policy Committee. The Markets and Operations Policy Committee shall make a recommendation to the SPP Board of Directors regarding the approval of a proposed Interregional Project.

h) The SPP Board of Directors shall review all reports and recommendations related to the regional review of the proposed Interregional Project.

i. The SPP Board of Directors may approve a proposed Interregional Project only where the benefits equal or exceed the costs for the SPP Region.

ii. The Transmission Provider shall notify the applicable interregional joint planning committee whether a proposed Interregional Project has been approved by the SPP Board of Directors.

i) To qualify as an approved Interregional Project, the proposed Interregional Project must be approved by the SPP Board of Directors and the corresponding Interregional Planning Region in accordance with the applicable Interregional Planning Process.

j) Upon approval by the corresponding Interregional Planning Region and the SPP Board of Directors, the Transmission Provider's portion of the approved Interregional Project will be constructed in accordance with Section VI of this Attachment O.

VII. Information Exchange

1) Data Requirements

a) 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").

b) When an entity has developed a preliminary engineering concept for 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.

c) In preparation for the annual update of transmission planning models for each annual planning cycle, Members, Transmission Customers, Transmission Owners, Generation Interconnection Customers and all other stakeholders must provide to the Transmission Provider the data specified in this Section VII of this Attachment O.

d) 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.

e) The format required to submit modeling data shall be posted on the SPP website.

f) The modeling data shall be posted on the SPP website with password protected access.

2) Owners of transmission facilities shall provide to the Transmission Provider:

a) Modeling data for power flow, short-circuit and stability analysis;

b) Detailed power system models of their transmission systems and provide updates to their models via a password protected web based application;

c) Data regarding the design and operation of their transmission facilities;

d) Their FERC Form 715;

e) Their individual company-specific planning criteria;

f) Planning grade cost estimates and schedules for upgrades in the SPP Transmission Expansion Plan in a timely manner;

g) Their five-year transmission construction plans; and

h) Their transmission fixed charge rate.

3) Generator owners shall provide to the Transmission Provider:

a) Modeling data for power flow, short-circuit and stability analysis;

b) Data for planned additions or upgrades, including status and expected in-service dates, planned retirements and environmental restrictions; and

~~c)~~ Modeling data to perform economic planning studies in accordance with Sections III and IV of this Attachment O. Data required to model generating units for the economic planning studies is documented in the ~~Transmission Network Economic Modeling and Methods~~Integrated Transmission Planning ~~m~~Manual which shall be posted on the SPP website.

4) Transmission Customers

a) 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.

b) 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.

c) Transmission Customers with existing and planned demand response resources, including demand response resources, shall provide information on such resources.

5) Neighboring Transmission Providers and RTOs

In accordance with applicable agreements and Section VIII of this Attachment O, 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.

6) Stakeholder Access to Transmission Planning Information

a) The planning information, data, and models provided pursuant to this Section VII shall be sufficient to allow parties to replicate results of the planning studies.

b) The Transmission Provider shall provide a secure web-based workspace for hosting and sharing planning information, data, and models.

c) The secure web-based workspace shall be password protected and require CEII clearance in accordance with Section VII.8 of this Attachment O.

d) Instructions to obtain access to the Transmission Provider's power flow models shall be posted on the SPP website.

e) Instructions to obtain copies of the Transmission Provider's transmission planning maps shall be posted on the SPP website.

7) Confidentiality Requirements

a) The Transmission Provider shall make all reasonable efforts to preserve the confidentiality of information in accordance with the provisions of the Tariff and the SPP Membership Agreement.

b) 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.

c) The form of confidentiality agreement shall be posted on the SPP website.

d) The confidentiality agreement shall allow access to applicable system design software results needed to participate in the SPP Transmission Expansion Plan process, replicate the results of specified transmission planning studies, or to confirm assumptions used in creating adjusted production cost-benefit metrics used to analyze a specified Balanced Portfolio; provided however, if the results include resource-specific data (including input data), access will be limited to individuals that are not Competitive Duty Personnel. For the purposes of this section:

i) "Competitive Duty Personnel" are any individuals directly engaged in Competitive Duties.

ii) "Competitive Duties" include: (1) the marketing, purchase, or sale of electric power at wholesale, or (2) the direct supervision of any employee with responsibilities for the marketing, purchase, or sale of electric power at wholesale.

e) Other transmission planning information shall be posted on the SPP website and may be password protected, as appropriate.

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

8) Critical Energy Infrastructure Information (CEII) Requirements

a) The Transmission Provider shall take appropriate steps to protect CEII information.

b) The Transmission Provider shall screen Members and Market Participants prior to providing access to CEII information. Individuals that do not belong to a confirmed pre-screened Member or Market Participant shall make application for approval to obtain CEII used in the transmission planning process in accordance with the procedures posted on the SPP website.

c) For those entities that have met the CEII requirements in Section VII.8.b of this Attachment O, 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.

d) The Transmission Provider shall follow the guidelines set forth by the Commission to flag data which shall be treated as CEII sensitive.

SPP Planning Criteria

SPP Business Practices


SPP
75th Anniversary
75
SEVENTY-FIVE YEARS OF
RELIABILITY THROUGH RELATIONSHIPS

2017 ITPNT Scenario 5

Steady State Planning

Background

- Scenario 5
  - SPP OATT, Attachment O, III.6.f
    - Long-term firm Transmission Service incorporation in ITP process
  - Current methodology models max wind with firm transmission service in the ITPNT Scenario 5 models
- MOPC Action Item 266
  - TWG/ESWG investigate the Scenario 5 method in the 2017 ITPNT to incorporate thoughts of the TPITF
- TPITF Whitepaper
  - New Base Reliability Model (subject to TWG review)
    - Non-Coincident Peak load forecasts
    - Assumed Long-term firm transmission service usage levels
    - Expected conventional and renewable resource output levels

Identification of Impacts

- Low Impact: < 2 weeks
- Medium Impact: >2 weeks → < 2 months
- High Impact: < 2 months

Scenario 5 Methodology Options

- Option 1
  - Utilize an SPP Balancing Authority (SPP BA) coupled criteria for determination of Scenario 5 needs
  - Would apply to summer peak case only

Model (Base Case)	p.u. Voltage	Criteria
Scenario 5 Summer Peak	.93	<.95
SPP BA Summer Peak	.94	<.95
Model (Base Case)	**% Loading**	**Criteria**
Scenario 5 Summer Peak	100.4	>100
SPP BA Summer Peak	98	>100

Model (N-1)	p.u. Voltage	Criteria
Scenario 5 Summer Peak	.88	<.90
SPP BA Summer Peak	.91	<.92
Model (N-1)	**% Loading**	**Criteria**
Scenario 5 Summer Peak	100.4	>100
SPP BA Summer Peak	98	>95

Scenario 5 Methodology Options

- Option 2
  - Develop a new model scenario which accounts for long-term firm transmission service but utilizes expected conventional and renewable resource output levels based upon TPITF recommendations subject to TWG review
  - Could contain:
    - Non-Coincident Peak load forecasts
    - Assumed Long-term firm transmission service usage levels in relation to the year & season
    - Expected conventional and renewable resource output levels

Scenario 5 Methodology Impacts

- Option 1 Impacts (coupling Scenario 5 and SPP BA needs)
  - Low schedule impact
    - Filter Scenario 5 needs based on coupling criteria prior to DPP Window opening
  - Low SPP resource impact
    - Potential reduction of posted Needs from Scenario 5 models
  - Potential reduction on TO resources

Scenario 5 Methodology Impacts

- Option 2 Impacts (Hybrid model)
  - High Schedule impact
    - Consensus on modeling guidelines necessary
    - Additional time to build models
    - Postponing DPP Window
  - High SPP resources impact
    - Model build
    - Stakeholder vetting
  - High TO resource impact
    - Model build
    - Stakeholder vetting

TWG Recommendation

- Email vote underway with a motion to approve Option 1 using the values of 95% for thermal loading and .92 pu voltage
- Vote closing on Friday, June 10th
- Scope language approval scheduled for June 15th conference call


SPP
75th Anniversary
75
SEVENTY-FIVE YEARS OF
RELIABILITY THROUGH RELATIONSHIPS

ITP Scope Standardization

ESWG

June 16th, 2016

ITP Scope Items

- Load Review
- Generation Review
- Renewable Policy Survey
- Resource Plan phase 1 (Renewables)
- Resource Plan phase 2 (Conventional + Renewables)
- Siting Plan
- Generation Outlet Facilities (GOF)
- Economic Model
- Benchmarking
- Constraint Assessment
- DC to AC Conversion
- Needs Assessment
- Project Selection
- Project Grouping
- Portfolio Consolidation
- Project Staging
- Benefit Metrics
- Sensitivities

ITP Specific Scope Items

- System Topology
- Fuel/Emissions prices
- DC Ties
- Hourly Load Profiles
- Hourly Renewable Profiles
- Capacity accreditation/margin
- Generation Prototypes
- Wind Prices
- Hurdle Rates

Other Specifics?

- Brainstorm on other specifics not already listed, not normally detailed in the scope document, or inherent in scope items listed that need to be called out separately

Proposed Schedule for Scope Development

	2016							2017						
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
Load review														
Generation review														
Policy Survey														
Resource Plan Phase 1														
Resource Plan Phase 2														
Siting Plan														
GOF														
Economic Model														
Benchmarking														
Constraint Assessment														
DC to AC Conversion														
Needs Assessment														
Project Selection														
Project Grouping														
Portfolio Consolidation														
Project Staging														
Benefit Metrics														
Sensitivities														

ITP Models

Description	Year 2	Year 5	Year 10	Total
Reliability: CBA (TPL Sensitivity Case)	One Future Coincident Peak On/Off-Peak (2)	Up to Three Futures Coincident Peak On/Off-Peak (6)	Up to Three Futures Coincident Peak On/Off-Peak (6)	14
Reliability: Base Scenario TPL: Powerflow	Summer Winter Light Load Non-coincident Peak (3)	Summer Winter Light Load Non-coincident Peak (3)	Summer Winter Light Load Non-coincident Peak (3)	9
Economic	One Future Coincident Peak 8760 (1)	Up to Three Futures Coincident Peak 8760 (3)	Up to Three Futures Coincident Peak 8760 (3)	7

Current Methodologies

Reference

Load Review (Current State)

- Projected peak load per area for the years 5 and 10
- Stakeholders review peak demand from most recent powerflow model, as well as annual load and loss factors
- Peak load and energy identified for load serving entities within SPP RTO areas

Load Review (Future State)

- Stakeholders submit data to MDWG
- Staff would use a standard process for non-submitted data
- Data requested:
  - Peak Load
    - Option 1: Transmission and generation Forecast
    - Option 2: Gross Forecast
      - Passive and active demand response
      - Energy efficiency
      - Behind the meter generation
    - Backup: latest MDWG model series (calculated value)
  - Hourly Load Shape
    - Develop process for members to create hourly load shapes
    - Backup A: vendor data
    - Backup B: develop process to get data from operations

Load Review (Future State)

- Monthly Peak and Monthly Energy
  - Backup: calculate from hourly load shape data
- Annual Load Factor
  - Backup A: calculate from hourly load shape data
  - Backup B: previous study data
- Annual Loss Factor
  - Backup: previous study data
- Bus mapping
  - Individual bus mapping to PROMOD demand groups
  - Reference table demand group to MDWG owner identification
    - Backup: SPP Staff will determine the bus mapping

Generation Review (Current State)

- ESWG and MDWG review the data for all generators added to the model as part of the ITP10 Study (Conventional + Renewable)
- Proposed resources are included and designated to a utility if it meets the resource criteria approved by the ESWG
- Non-designated resources are included based on commercial operation statuses

Generation Review (Future State)

- Stakeholders submit data through MDWG model development process
- Staff would use an standard process for non-submitted data

Generation Review (Future State)

- Member data requested:
  - Commission and retirement dates
  - Seasonal maximum capacity by year
  - Powerflow bus mappings
  - Ownership by year
  - Fleet PPAs
  - DC Ties Profiles
  - Backup: previous study data

- Vendor data reviewed:
  - Generation category
  - Variable O&M
  - Fixed O&M
  - Heat rate
  - Heat rate profile
  - Annual maintenance hours
  - Forced outage rates
  - Must run status
  - Effluents
  - Effluents (% removed)
  - Fuel forecast
  - Hydro energy limits
  - Unit location (state)
  - Backup A: member data for new units
  - Backup B: use data from similar units

Renewable Policy Survey (Current State)

- Stakeholders provide feedback through a survey (conducted by the ESWG), on anticipated renewable mandates and goals based on current regulations
- Energy or capacity requirements for years 5 and 10
- The current process requires 50 hours of work (2.5 months)

Renewable Policy Survey (Future State)

- Stakeholders provide data through the MDWG model development process

Resource Plan Phase 1 (Current State)

- Additional renewables are included in the models, as needed, to meet the renewable Mandates and Goals projections, as supplied by the Renewable Policy Survey

Resource Plan Phase 1 (Future State)

- In the end of the Resource Plan phase 2 SPP Staff would check the renewables added to model, and compare it with Mandates and Goals projections, as supplied by the Renewable Policy Survey

Resource Plan Phase 2 (Current State)

- Each SPP RTO load serving member must meet the current reserve margin requirement outlined in SPP Criteria
- Capacity needs are identified for each Future for years 5 and 10
- The process requires SPP Staff to use a software to determine new resource additions
  - Wind and solar generation are added based on methodologies developed by the ESWG
- SPP Staff uses prototypes (Lazard data for the 2017 ITP10) approved by the ESWG for new generation

Resource Plan Phase 2 (Future State)

- Stakeholders to provide company IRPs to SPP Staff for years 5 and 10
- For non-submitted data, SPP Staff would develop a default plan to determine new generation using a ratio (CTs/CCs/Renewables) for each zone
  - Would be necessary to develop criteria to determine the need of peaking and base load generation for each zone

Siting Plan (Current State)

- Expected locations of future generation are considered in areas with appropriate potential
- Sites selected based on past ITP Studies, SPP Generation Interconnection queue, stakeholder feedback, engineering analysis, in addition to other analysis as appropriate for the Futures considered during the study

Siting Plan (Future State)

- Stakeholders would submit data to model generation planned through company IRP
- For non-submitted data SPP Staff would follow the current criteria approved the ESWG

Next Steps

- Continue to develop the scope for items discussed today, deadline to finalize these items is September 2016