**Southwest Power Pool**

**ECONOMIC STUDIES WORKING GROUP**

**September 15th, 2016**

**8th Floor AEP Offices – Dallas, TX**

**• SUMMARY OF ACTIONS TAKEN •**

1. Approved the ITP Manual TF charter as posted.
2. Approved the APC benefit % established during the RCAR I analysis to proxy the benefit of transmission outage mitigation for use in the 2017 ITP10.

**Southwest Power Pool**

**ECONOMIC STUDIES WORKING GROUP**

**September 15th, 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 8:02 AM, welcomed those in attendance, and asked for introductions.

There were 14 in-person participants and 50 web conference participants, representing 17 of 17 ESWG members. (Attachment 1 – September 15th, 2016 Attendance List)

### Agenda Item 1b – Receipt of Proxies

Alan Myers (ITC Great Plains) asked for any proxy statements; four proxies were identified. Jeremy Severson (Basin) named Matthew Stoltz as his proxy, Leon Howell (OGE) named Zac Hager (OGE) as his proxy, Michael Massery (AECC) named Brad Johnston (AECC) as his proxy, and Randy Collier (CUS) named John Boshears (CUS) as his proxy. Natasha Henderson (GSEC) temporarily named Jett Price (GSEC) as her proxy within agenda item 5. (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. Kelsey Allen (SPP Staff) asked to strike the Generation Siting Whitepaper agenda item. (Attachment 3 – September 15th, 2016 ESWG Agenda)

> **Kurt Stradley (LES) made a motion; seconded by Natasha Henderson (GSEC) 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 and asked for any comments or questions. (Attachment 4 – Past Action Items)

## Agenda Item 3 – Consent Agenda

The consent agenda included the following items:

Meetings Minutes – July 21st, 2016 (Attachment 5 – July 21st, 2016 ESWG Minutes)
Meetings Minutes – August 23rd, 2016 (Attachment 6 – August 23rd, 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 – Study Schedules

### Agenda Item 4a – 2017 ITP10

Juliano Freitas (SPP) reviewed the 2017 ITP10 schedule with the group. Staff is currently working on the project grouping milestone and expecting to have draft portfolios to review at the end of the month. The group discussed holding a joint conference call with a TWG to review the projects.

**ACTION ITEM**: Staff to send out a poll for a joint ESWG/TWG conference call on September 30th.

(Attachment 7 – 2017 ITP10 Schedule)

## Agenda Item 5 – RR180-ITP Transmission Needs

Liz Gephardt (SPP Staff) reviewed RR180 suggested changes to references in Attachment O to the SPP Tariff to transmission needs being identified in the ITP scope. The intent of the changes is to bring clarity to the process for defining transmission needs. Steve Gaw (Wind Coalition) expressed concern regarding the removal of language related to Public Policy Needs and Stakeholder identification of transmission needs, stating that the inclusion of the language in the Tariff was a FERC requirement under SPP's Tariff filing. Other members expressed the need for additional clarity, including the definition of a transmission need and other sections referencing Public Policy Requirements and methodology of determination of transmission needs.

The group took no action on RR180, citing the need for the concerns raised to be taken back to the RTWG as comments, and made slight modifications to the proposed document for RTWG consideration. (Attachment 8 - RR180 - ITP Transmission Needs_ Recommendation Report_ESWG edits)

**Agenda Item 6 – ITP Manual Task Force Charter**

Juliano Freitas (SPP Staff) reviewed the ITP Manual Task Force Charter with the group and requested approval.

> **Natasha Henderson (GSEC) made a motion; seconded by Kurt Stradley (LES) to adopt the agenda as modified. The motion was approved unanimously.**

(Attachment 9 – ITP Manual TF Charter)

**Agenda Item 7 – 2017 ITP10 Economic Project Grouping**

Kelsey Allen (SPP Staff) reviewed the process for grouping economic projects into potential portfolios and discussed some additional work being performed by Staff to help inform the 2017 ITP10 study. Jody Holland (SCMCM) expressed concern regarding the type of projects reviewed by SPP Staff at the Planning Summit and posted in the draft project list and challenged Staff to look for more opportunity for new transmission build out rather than small upgrades to existing facilities, given the 10th-year horizon of the study.

As a part of the grouping process, SPP Staff is developing of a multi-variable portfolio that encourages the use of additional criteria and judgement to select projects that address the needs of the study. Staff intends to utilize this portfolio to address some current SPP initiates related to transmission issues continually experienced in real-time operations, coordination with seams neighbors, and RCAR II. Staff will be looking for more robust solutions in the current target areas of the eastern seam near southwest Missouri, and one of the current top congested areas in the Texas panhandle.

SPP Staff is also working to better understand the impact of the model corrections submitted by stakeholders and NTC's issued by SPP after the powerflow model approval in October, 2015. Due to the volume of changes, Staff deemed it prudent to rebuild models and reassess system constraints with these changes to understand the impact to the 2017 ITP10 posted transmission Needs. This analysis will be considered when making project recommendations at the end of the study to ensure the appropriate transmission is being proposed.

(Attachment 10 – 2017 ITP10 Economic Project Grouping)

**ACTION ITEM**: SPP Staff to post models and data utilized for the 2017 ITP10 side-bar analysis when complete.

**Agenda Item 8 – Mitigation of Transmission Outages Metric-2017 ITP10**

Josh Ross (SPP Staff) reviewed the mitigation of transmission outages metric and the work involved to develop the data necessary for the calculations. Staff is proposing to continue using the % multiplier to APC calculated during the RCAR I for use in the 2017 ITP10 benefit metrics calculation. (Attachment 11 – 20160915_Mitigation_of_Transmission_Outages_Metric)

> **Pat McCool (KCPL) made a motion; seconded by Don Le (NEET) to adopt the agenda as modified. The motion was approved unanimously.**

**ACTION ITEM**: SPP Staff to perform the outage analysis to determine the appropriate APC benefit % to utilize in the mitigation of transmission outages benefit metric in the first part of 2017.

**Agenda Item 9 – ITP Scope Standardization**

Kelsey Allen (SPP Staff) began discussion on the ITP scope standardization by reviewing a more detailed checklist of items that will need to be discussed by the group with the goal of approving a criteria, methodology or data source for documentation in the ITP manual. The group requested that outline with for when these items will be discussed be developed.

**ACTION ITEM**: SPP Staff to develop an outline and timeline of upcoming discussion items related to ITP scope standardization.

Josh Ross (SPP Staff) reviewed a proposed methodology for resource planning under the new ITP study process. The group expressed a few concerns related moving away from the current standardized process and the standardizing specificity around renewables, but was generally supportive of the direction of the proposal. While the process would allow for more stakeholder input in identification of appropriate resource technology, Staff is still recommending that the location of the sites of new resources without firm commitment follow a standard methodology.

(Attachment 12 – 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 send out a poll for a joint ESWG/TWG conference call on September 30th.
2. SPP Staff to post models and data utilized for the 2017 ITP10 side-bar analysis when complete.
3. SPP Staff to perform the outage analysis to determine the appropriate APC benefit % to utilize in the mitigation of transmission outages benefit metric in the first part of 2017.
4. SPP Staff to develop an outline and timeline of upcoming discussion items related to ITP scope standardization.

The meeting was adjourned at 2:40 PM.

Respectfully Submitted,

Kelsey Allen
ESWG Secretary

**Name**
743 346 521
Adam Mummert
Alan Myers (ITC)
Anita
Antonio Barber
Ashley Swain
Ben Abing
Bennie Weeks (SPS)
Bethany King
Bill Leung (NPRB)
Blaine Erhardt
Brad Johnston
Brian Johnson - AEP
Chris Matthes
Clayton Mayfield
David Binkley
Don Le (NEET)
ed pfeiffer (quanta)
Gayle Nansel (WAPA)
J.P. Maddock
Jamie Hajek (NWE)
Jared Wolfford
Jason Davis (SPP)
Jason Schmidt (NextEra)
Jason Shook (GDS/ETEC)
Jeremy Harris
Jett Price (GSEC)
Jody Holland (SCMCN)
John Boshears (SPRM)
John Krajewski (Nebraska PRB)
Jon Iverson (OPPD)
Jon Shipman
Jose Restrepo (SNC-Lavalin)
Josh Ross (SPP)
Josie Daggett (WAPA)
Juliano Freitas (SPP)
Kelsey Allen (SPP)
Kirk Hall
Kurt Stradley (LES)
Kyle Combes
Liz Gephardt
matthew stoltz
Maureen Ochola
Meena Thomas (PUCT)
Michael Watt (OMPA)
Michael Wegner (ITC)

Mounika Kurra (Quanta)
Natasha Henderson (GSEC)
Nikki Roberts
PB
Randy Collier (CUS)
Richard Dahl (MRES)
Ross Hohlt
Ryan Yokley
Shawnee Claiborn-Pinto (PUCT)
Steve Gaw
tayeb meridji
Tim Owens (NPPD)
Tim Soles
Toby Hu
Todd Tadych  (DATC)
Wayne Penrod (SUNC)
Yan Du
Zachary Sharp

| Email | Attendance |
|---|---|
| smishra@aep.com | Webex |
| amummert@burnsmcd.com | Webex |
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| | In Person |
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| thu@ameren.com | Webex |
| ttadych@atcllc.com | Webex |
| | Webex |
| ydu@lspower.com | Webex |
| zsharp@spp.org | Webex |

1. **Jeremy Severson (Basin) proxy to Matthew Stoltz (Basin)**

**From:** Severson, Jeremy
**Sent:** Tuesday, September 13, 2016 1:59 PM
**To:** Myers, Alan; Kelsey Allen
**Cc:** Stoltz, Matthew
**Subject:** **External Email** Thursday ESWG

Hi Kelsey and Alan,

I will not be able to attend the Thursday ESWG meeting due to another conflict. Matthew Stoltz will take my proxy.

Thank you,

Jeremy..


**Jeremy Severson**
Transmission Services - Sr. Electrical Engineer
Basin Electric Power Cooperative
1717 E Interstate Ave
Bismarck, ND 58503
e-mail: jseverson@bepc.com
phone: 701.557.5707
web: basinelectric.com



2. **Leon Howell (OGE) proxy to Zac Hager (OGE)**

**From:** Howell, Leon
**Sent:** Thursday, September 15, 2016 8:51 AM
**To:** Kelsey Allen
**Cc:** Hager, Zac
**Subject:** **External Email** Re: ESWG 9/15 Discussion Items

Kelsey,
Zac Hager has my proxy for today's meeting.
Leon

3. **Michael Massery (AECC) proxy to Brad Johnston (AECC)**

**From:** Massery, Michael
**Sent:** Monday, September 12, 2016 2:01 PM
**To:** Kelsey Allen

**Cc:** Myers, Alan; Johnston, Brad
**Subject:** **External Email** FW: ESWG 9/15/16 Agenda & Background Materials posted

Kelsey,
I will not be able to attend the meeting this week but Brad Johnston will be dialing in with my proxy.
Thanks

4. **Natasha Henderson (GSEC) proxy to Jett Price (GSEC)**

**From:** Henderson, Natasha
**Sent:** Thursday, September 15, 2016 9:03 AM
**To:** Kelsey Allen; Myers, Alan
**Cc:** Jett L. Price
**Subject:** **External Email** I had to step out- Jett has my proxy while I'm out- thx

5. **Randy Collier (CUS) proxy to John Boshears (CUS)**

**From:** Collier, Randy
**Sent:** Wednesday, September 14, 2016 9:19 AM
**To:** Kelsey Allen; Myers, Alan
**Cc:** Boshears, John; Knottek, Jeff
**Subject:** **External Email** Preoxy for ESWG Meeting 9/15/16

Kelsey/Alan,
John Boshears has my proxy from 9 a.m. to 10 a.m. for the ESWG meeting on 9/15/16.

Thanks,
Randy Collier
Contract Manager-Electric Supply
O: 417.831.8323

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# ECONOMIC STUDIES WORKING GROUP

## September 15th, 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 – July 21st, 2016
    b. Approval of Meeting Minutes – August 23rd, 2016
4. Study Schedules ..... Juliano Freitas (15 minutes)
    a. 2017 ITP10
5. RR180 – ITP Transmission Needs (Approval Item) ..... Liz Gephardt (20 minutes)
6. ITP Manual Task Force Charter (Approval Item) ..... SPP Staff (15 minutes)
7. 2017 ITP10 Economic Project Grouping ..... SPP Staff (60 minutes)
8. Mitigation of Transmission Outages Metric – 2017 ITP10 (Approval Item) ..... Josh Ross (30 minutes)
9. ITP Scope Standardization ..... All (180 minutes)
10. Closing Items ..... All (5 minutes)
    a. Summary of Action Items (Kelsey Allen)
    b. Future Meetings
        i. October 20th, 2016: OMPA Offices, Edmond, OK
        ii. November 16th - 17th, 2016: SPP Corporate Office, Little Rock, AR
        iii. 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**

**September 15th, 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 | |

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|---|---|---|---|---|
| | 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<br>Staff | 7/21: Approval by April, 2017 for July MOPC/BOD approval.<br>8/23: Potential for work needing to be complete by January, 2017 in order to go through all necessary working groups. |
| 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<br>Staff | |
| 171 | Staff to investigate coordination opportunities regarding request for member hourly load data. | June 16th, 2016 | In Progress<br>Staff | |
| 172 | Staff to develop examples and language for tackling synergies of powerflow and economic generation data. | June 16th, 2016 | In Progress<br>Staff | |
| 173 | Staff to develop a process for annual update of the economic model with vendor data. | June 16th, 2016 | In Progress<br>Staff | |
| 174 | Staff to develop criteria and methodology to developing resource plans absent a software tool. | June 16th, 2016 | In Progress<br>Staff | |
| 177 | Staff to develop a checklist of decision points for development of the ITP standard scope. | July 21st, 2016 | In Progress<br>Staff | September 15th: Include timeline for bringing items to each meeting. |
| 178 | Staff to develop a presentation on the technical details, limitations and recommendation regarding the Transmission Outage benefit metric. | July 21st, 2016 | ~~In Progress~~Complete<br>Staff | |
| 180 | SPP Staff to investigate whether the current ITP manual needs to go through a more formal revision process (RR) in order to implement the recommendations of the TPITF. | August 23rd, 2016 | In Progress<br>Staff | |
| 181 | SPP Staff to reach out to the BPWG, ORWG, and RTWG regarding coordination with and level of involvement of those groups in the ITP Manual Task Force efforts to | August 23rd, 2016 | ~~In Progress~~Complete | BPWG, ORWG, and RTWG have been contacted. Robert Pick (NPPD) will represent RTWG in necessary |

| | | | | |
|---|---|---|---|---|
| | implement TPITF recommendations. | | Staff | discussions. |
| 182 | SPP Staff to post models and data utilized for the 2017 ITP10 side-bar analysis when complete. | September 15th, 2016 | In Progress<br>Staff | |
| 183 | SPP Staff to perform the outage analysis to determine the appropriate APC benefit % to utilize in the mitigation of transmission outages benefit metric in the first part of 2017. | September 15th, 2016 | In Progress<br>Staff | |

**Southwest Power Pool**

**ECONOMIC STUDIES WORKING GROUP**

**July 21st, 2016**

**VistaTech at Schoolcraft College (ITC Host) – Livonia, MI**

**• SUMMARY OF ACTIONS TAKEN •**

1. Approved RR164, ITP Schedule Clarification.

**Southwest Power Pool**

**ECONOMIC STUDIES WORKING GROUP**

**July 21st, 2016**

**VistaTech at Schoolcraft College (ITC Host) – Livonia, MI**

**• 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 10 in-person participants and 52 web conference participants, representing 16 of 17 ESWG members. (Attachment 1 – July 21st, 2016 Attendance List)

### Agenda Item 1b – Receipt of Proxies

Alan Myers (ITC Great Plains) asked for any proxy statements. Six proxies were identified; Don Le (NextEra Energy Transmission) named Alan Myers (ITC Great Plains) as his proxy, Jody Holland (South Central MCN) named Eric Burkey (South Central MCN) as his proxy, Leon Howell (OGE) named Zac Hager (OGE) as his proxy, Natasha Henderson (GSEC) named Evan Racine-Johnson (GSEC) as her proxy, Randy Collier (CUS) named Kevin Foflygen (CUS) as his proxy (12-3pm), and Tim Owens (NPPD) named Kurt Stradley (LES) as his proxy (afternoon). (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 – July 21st, 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. (Attachment 4 – Past Action Items)

## Agenda Item 3 – Consent Agenda

The consent agenda included the following items:

Meetings Minutes – June 16th, 2016 (Attachment 5 – June 16th, 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 – Study Schedules

### Agenda Item 4a – 2017 ITP10

Juliano Freitas (SPP) reviewed the 2017 ITP10 schedule. This updated focused on the current status of DPP processing by SPP Staff and next steps for development of portfolios based on project screening. SPP Staff will be developing a list of projects that will be considered for portfolio development and sending those out for Study cost estimates. Projects determined to be likely competitive will be sent to a third party for cost estimation and those determined to be likely non-competitive will be sent to the incumbent transmission owners. SPP will be requesting that these estimates be returned within 4 weeks and will be holding a Planning Summit August 18th for interim discussion on the potential projects being

considered. The group asked that the list of projects being sent out for Study estimates be posted for public consumption for the sake of transparency. (Attachment 6 – 2017 ITP10 Schedule)

**ACTION ITEM**: Staff to post project lists for the 2017 ITP10 when sent out for cost estimation.

**Agenda Item 5 – 2017 ITP10 Needs Assessment Review**

**Agenda Item 5a – Economic**

Kelsey Allen (SPP Staff) reviewed the process for defining economic needs and the resulting needs by future. Staff incorporated additional considerations for defining the posted needs after what was originally presented to the group.

**Agenda Item 5b – Policy**

Kelsey Allen (SPP Staff) reviewed process for defining policy needs and the details of the needs assessment resulting in no policy needs being identified for the 2017 ITP10 study.

(Attachment 7 – 2017 ITP10 Needs Assessments)

**Agenda Item 6 – RR164-ITP Schedule Clarification**

Kelsey Allen (SPP Staff) reviewed RR164 regarding clarification of the ITP schedule referenced in the Tariff. (Attachment 8 - RR 164_Recommendation Report_Revised _Approved_20160608)

> **Kurt Stradley (LES) made a motion; seconded by Tim Owens (NPPD) to approve RR164. The motion was approved unanimously.**

**Agenda Item 7 – ITP Manual Task Force**

Juliano Freitas (SPP Staff) informed the group that SPP Staff is working on a draft of the ITP Manual Task Force (ITPMTF) charter and asked for anyone interested in being involved. The task force will be a joint effort with the ESWG and TWG. The group asked that the charter be sent to the ESWG and TWG for review with solicitation of new members.

**ACTION ITEM:** Staff to send the ITP Manual TF charter to the TWG/ESWG for review with solicitation of new members.

The group asked for items likely to be standardized and the level of detail that would need to be covered by the ITPMTF and requested that Staff develop a list of decision points that will need to be discussed in order to begin work on the ITP manual.

**ACTION ITEM:** Staff to develop a checklist of decision points for development of the ITP standard scope.

**Agenda Item 8 – 2017 ESWG Meeting Schedule**

Kelsey Allen (SPP Staff) reviewed the proposed 2017 ESWG meeting schedule and asked for any comments or proposed adjustments. Dates and locations have been proposed for 8 of 12 meetings with the remaining 4 to be coordinated with the TWG. Kelsey asked for any volunteers to host the meeting for any of the proposed dates. (Attachment 9 – 2017 ESWG Meeting Schedule)

**Agenda Item 9 – Mitigation of Transmission Outages Metric – 2017 ITP10**

Juliano Freitas (SPP Staff) began discussion on the mitigation of transmission outages metric in the context of the 2017 ITP10. SPP Staff posed the question of what, if any, data updates need to be made for the 2017 ITP10 in light of the discussion during review of the RCAR II results. Staff utilized the previous results of outage analysis to determine the benefit of mitigating transmission outages as a function of APC. Staff recommended to continue with the current percentage of APC for the 2017 ITP10 and to spend the effort in the future to analyze potential adjustments. Gayle Nansel (WAPA-UGP) noted that the Integrated System was not included in the original analysis and asked if the incorporation of that system would have an impact on the metric. While including new systems in the analysis would likely have an impact, it would likely have less of an impact than a reassessment with a selection of different outages across the region due to the metric being a function of regional APC differences with an without

the outages modeled. The group also pointed out that this metric has much less of an impact in the 2017 ITP10 than in an RCAR assessment because of the smaller group of projects and the fact that the metric is for informational purposes, not used in the selection of transmission projects. The group requested that Staff come back with additional information before making a decision on how to proceed in the 2017 ITP10.

**ACTION ITEM:** Staff to develop a presentation on the technical details, limitations and recommendation regarding the Transmission Outage benefit metric.

**Agenda Item 10 – ITP Scope Standardization**

Juliano Freitas (SPP Staff) continued review of the proposal for standardization of the ITP scope. This review focused on benchmarking, development of the economic model, and resource planning. Juliano reviewed the current state of the Model Development and Benchmarking process, touching on the data sources utilized and the data items reviewed, and requested feedback on the current process. The group discussed many of the challenges with benchmarking against real-world expectations due to model limitations, such as granularity, and real-world volatility, such as gas prices. Discussion continued on how much of the vendor data is updated as a part of the benchmarking process. Some members make updates, some do not in order to achieve more realistic operation. There was concern that these different approaches to data scrubbing can cause certain zones to be out of step with others if updates are not made consistently. Staff mentioned the idea of moving to a more standard dataset produced by a vendor to gain that consistency and streamline the model development process. The group requested that Staff contact ABB to present on the methodology and sources behind development of the Reference Case dataset. In discussion of other economic model related items, members expressed concern regarding the modeling of DC ties, including lack of pricing signals to simulate operation and loss of TTC on DC ties with the current methodology, wind price modeling, including VOM and curtailment pricing and whether the model should reflect true VOM or PPA type pricing, and demand modeling, including validation of total load and load shapes. (Attachment 10 – ITP Scope Standardization) (Attachment 11 – Working Group Involvement)

**ACTION ITEM:** Staff to contact ABB to present the methodology and data sources behind development of the Reference Case.

**Closing Items**

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

List of action items from the meeting:

1. Staff to post project lists for the 2017 ITP10 when sent out for cost estimation.
2. Staff to send the ITP Manual TF charter to the TWG/ESWG for review with solicitation of new members.
3. Staff to develop a checklist of decision points for development of the ITP standard scope.
4. Staff to develop a presentation on the technical details, limitations and recommendation regarding the Transmission Outage benefit metric.
5. Staff to contact ABB to present the methodology and data sources behind development of the Reference Case.

The meeting was adjourned at 2:20 PM.

Respectfully Submitted,

Kelsey Allen
ESWG Secretary

**Southwest Power Pool**

**ECONOMIC STUDIES WORKING GROUP**

**August 23rd, 2016**

**Northern Hotel – Billings, MT**

**• SUMMARY OF ACTIONS TAKEN •**

1. None

**Southwest Power Pool**

**ECONOMIC STUDIES WORKING GROUP**

**August 23rd, 2016**

**Northern Hotel – Billings, MT**

**• 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 8:10 AM, welcomed those in attendance, and asked for introductions.

There were 20 in-person participants and 57 web conference participants, representing 16 of 17 ESWG members. (Attachment 1 – August 23rd, 2016 Attendance List)

### Agenda Item 1b – Receipt of Proxies

Alan Myers (ITC Great Plains) asked for any proxy statements. No proxies were identified.

### Agenda Item 1c – Review of Agenda

Chair Alan Myers (ITC Great Plains) presented the agenda for review and asked for any additions or corrections. Kelsey Allen (SPP Staff) requested to strike the items for consent approval. (Attachment 2 – August 23rd, 2016 ESWG Agenda)

> **Tim Owens (NPPD) made a motion; seconded by Pat McCool (KCPL) 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 and asked for any comments or questions. Steve Gaw (Wind Coalition) asked for an update on action item 057 and whether the resource and siting methodology would be rolled into discussion regarding ITP scope standardization. SPP Staff currently has a draft whitepaper and will be bringing it to the ESWG for review after internal vetting. (Attachment 3 – Past Action Items)

## Agenda Item 3 – Study Schedules

### Agenda Item 3a – 2017 ITP10

Juliano Freitas (SPP) reviewed the 2017 ITP10 schedule with the group. SPP Staff is currently working on development of project portfolios and working to complete study estimates for the candidate projects list. Staff also expects to have a draft phase 1 of the study report, covering inputs and assumptions milestones, complete and sent out for review in September.

Jody Holland (SCMCN) expressed concerns regarding SPP staff's initial upgrade determinations and timing of information dissemination. "SCMCN seeks clarification on staff's interpretation of construction of a new substation tying to an existing line as non-competitive. This policy implementation appears to assume that the substation would be built on existing transmission line ROW. It is SCMCN's opinion that this is an incorrect implementation of the non-competitive policy. SCMCN does not believe transmission line ROW will allow a utility to construct a substation on the ROW. Furthermore, SCMCN does not believe TX ROW is wide enough or optimal for construction of a substation. Additionally, SCMCN does not believe ownership of land near existing ROW should warrant classification of a project as non-competitive. SCMCN suggests staff consider both MISO and PJM implementations of this same new substation policy as competitive.

The second point of concern for competitive vs. non-competitive policy implementation is staff's practice of sending cost estimate requests for non-competitive projects to incumbents 1-2 weeks ahead of posting the entire preliminary project list. SCMCN's opinion is that this can serve as a 'heads-up' to incumbents and can be used by incumbents to discredit competitive projects to their non-competitive projects." (Attachment 4 – 2017 ITP10 Schedule)

**Agenda Item 4 – DPP Submittal Form Lessons Learned Session**

Kelsey Allen (SPP Staff) informed the group of a lessons learned session that SPP Engineering will be holding via teleconference on September 7th. The intent of the session is to share lessons learned and potential improvements to the DPP submittal form and the DPP submittal process.

**Agenda Item 5 – ITP Manual Task Force Charter and Membership**

Juliano Freitas (SPP Staff) reviewed the proposed charter for the ITP Manual Task Force and asked for additional volunteers to participate on the group. The focus of the task force will be to implement the standardized scope recommendations of the TPITF. Michael Wegner (ITC) has volunteered to chair the group, with interest expressed from Pat McCool (KCPL), Tim Owens (NPPD), Gayle Nansel (WAPA) and Steve Gaw (Wind Coalition). The group made adjustments to the draft charter and discussed the level of involvement that might be needed of other working groups, including the BPWG, MDWG, ORWG and RTWG. It was requested that the task force representation consist of member representing the ESWG, MDWG, and TWG. Representation from the MDWG will help facilitate the TPITF recommendation to develop a common planning model used for all assessments and creating a single data request to fit into the current MDWG model development schedule. Nate Morris (EDE) expressed the need to ensure that the enhanced process and schedule is well defined and contains the appropriate granularity. Gayle Nansel (WAPA) suggested the potential need to reconstitute the MDWG to have appropriate expertise from both a reliability and economics perspective. (Attachment 5 – ITP Manual) (Attachment 6 – ITP Manual TF Charter_redline)

**ACTION ITEM**: SPP Staff to investigate whether the current ITP manual needs to go through a more formal revision process (RR) in order to implement the recommendations of the TPITF.

**ACTION ITEM**: SPP Staff to post the ITP Manual Task Force charter for review, and solicit approval by the ESWG and TWG. (Added as additional note to AI-176)

**ACTION ITEM**: SPP Staff to reach out to the BPWG, ORWG, and RTWG regarding coordination with and level of involvement of those groups in the ITP Manual Task Force efforts to implement TPITF recommendations.

**Agenda Item 6 – ABB PROMOD IV Reference Case Overview**

Tom Sweet (ABB) presented an overview of the PROMOD IV Reference Case that is released biannually by ABB. Tom reviewed the general ABB corporate structure and groups responsible for the different datasets produced by ABB and then did a dive into the 2016 Spring Reference Case, covering the methodology of gathering data and some of the results and trends of data in the most current release. (Attachment 7 – SPP-ESWG_ReferenceCaseOverview)

**Agenda Item 7 – ITP Scope Standardization**

Juliano Freitas (SPP Staff) reviewed the schedule and proposed milestones for standardization of ITP scope and focused discussion on the review of load and generation data. SPP Staff has had internal discussions to address the action items given by the group at the June 16th meeting to investigate opportunities for standardization of requesting and utilization of peak and hourly load data and identifying synergies between powerflow and economic generation data (AI 170-172). SPP Staff proposed a holistic approach to data requests in support of development of a common planning model that combines the processes by which load and generation data are currently requested and utilized under the MDWG model development, EIA-411, ESWG gen and load review, and SPP OATT Attachment G processes. SPP Staff also proposed folding the work of the CMTF that will be reconstituted as a new working group to support capacity margin efforts and LOLE studies. The group was concerned that developing a single methodology and the potential for stale data based on timing requirements for some of the efforts would

not appropriately meet the needs of all these items. After much detailed discussion, the group generally felt that there was too great a mismatch in purposes and timing to develop a holistic approach and directed staff to continue to work focusing on the ITP efforts. Staff urged the group to continue to consider synchronization of certain items on a micro level.

Staff continued discussion about increased utilization of vendor data related to generation data. Staff proposed a feedback loop for any member updates to the base data such that the information is relayed to the vendor for future releases. The group was generally not opposed to this but raised concerns about potential confidentiality issues as well as the selective nature of provided the stakeholder feeback to only one vendor. (Attachment 8 – ITP Scope Standardization Final)

**Closing Items**

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

List of action items from the meeting:

1. SPP Staff to investigate whether the current ITP manual needs to go through a more formal revision process (RR) in order to implement the recommendations of the TPITF.
2. SPP Staff to post the ITP Manual Task Force charter for review, and solicit approval by the ESWG and TWG. (Added as additional note to AI-176)
3. SPP Staff to reach out to the BPWG, ORWG, and RTWG regarding coordination with and level of involvement of those groups in the ITP Manual Task Force efforts to implement TPITF recommendations.

The meeting was adjourned at 3:45 PM.

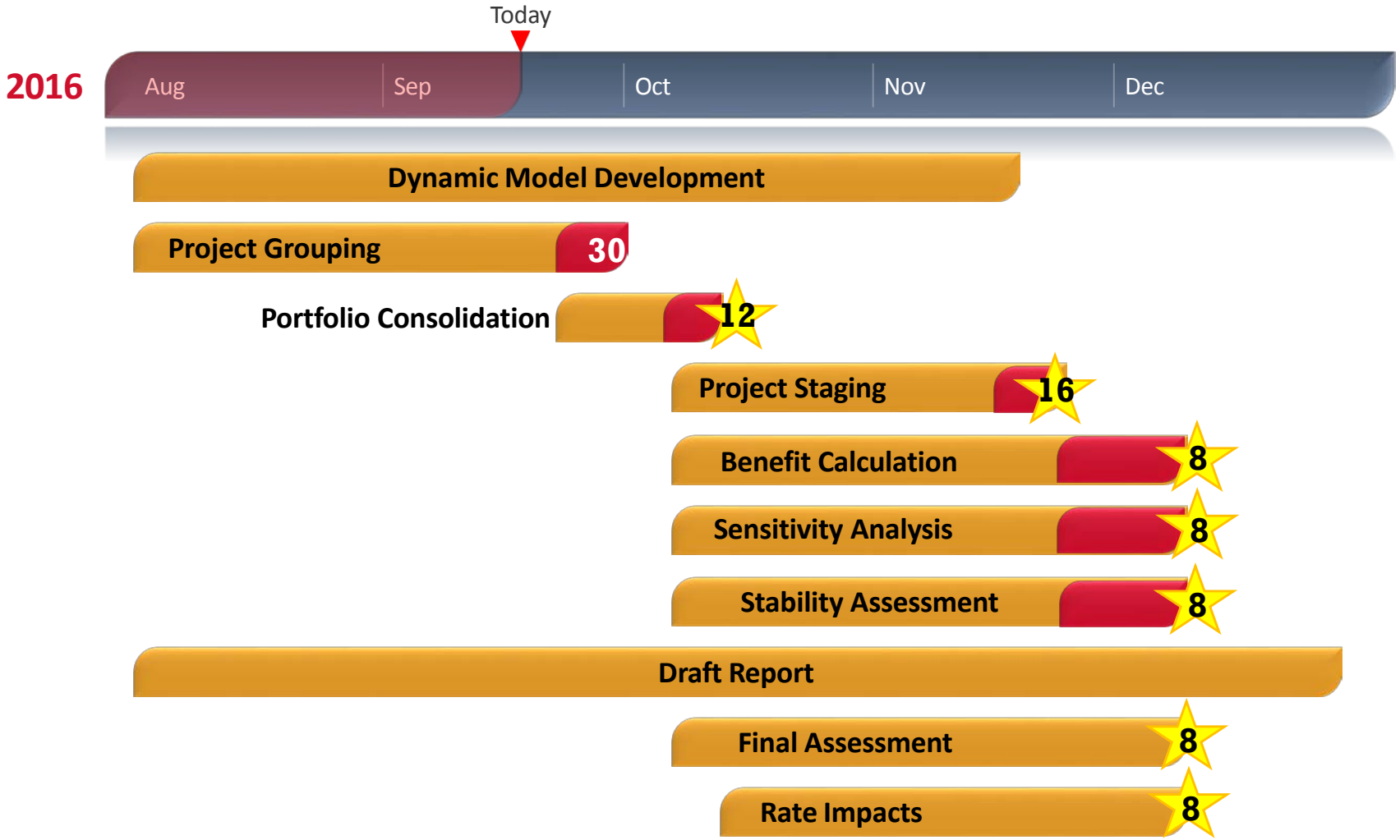
Respectfully Submitted,

Kelsey Allen
ESWG Secretary

# 2017 ITP10 Schedule

ESWG

September 15th, 2016




WG Approval

Member Review/Feedback Period

Milestone Period

# Revision Request Recommendation Report

| | |
|---|---|
| **RR #: 180** | **Date: 8/11/2016** |
| **RR Title: ITP Transmission Needs** | |

**SUBMITTER INFORMATION**

| | |
|---|---|
| **Submitter Name: Liz Gephardt** | **Company:** Southwest Power Pool |
| **Email:** lgephardt@spp.org | **Phone:** 501-482-2236 |

**EXECUTIVE SUMMARY OF ACTION AND RECOMMENDATION**

**OBJECTIVE OF REVISION**

**Objectives of Revision Request:**
*Describe the problem/issue this revision request will resolve.*

**The current language in this section that refers to "transmission needs" in the study scopes is ambiguous as to what is required. Clarity is needed for current and upcoming ITP cycles as it relates to what is required to be included in the study scopes**.

*Describe the benefits that will be realized from this revision.*

**Updating the language in this section will clarify details to be included in the ITP studies' scopes as they relate to "transmission needs".**

**IMPACT ANALYSIS REQUIRED:** ☐ **Yes** ☐ **No**

| | |
|---|---|
| **Estimated Cost: $**<br>*Cost is a **rough order of magnitude** estimate, approx. +/-50%* | **Estimated Duration:** months<br>*Duration is a **rough order of magnitude** estimate, approx. +/-50%* |

**Priority Rank for System Change:** ☐ **1 – Critical** ☐ **2 – High** ☐ **3 – Medium** ☐ **4 – Low**

**SPP DOCUMENTS IMPACTED**

| | | |
|---|---|---|
| ☐ **Market Protocols** | **Protocol Section(s):** | **Protocol Version:** |
| ☐ **Criteria** | **Criteria Section(s):** | **Criteria Date:** |
| ☒ **Tariff** | **Tariff Section(s):** Attachment O Section III.3-6, other sub-sections provided for clarity | |
| ☐ **Business Practice** | **Business Practice Number:** | |

**WORKING GROUP REVIEWS AND RECOMMENDATIONS**
List Primary and any Secondary/Impacted WG Recommendations as appropriate

| | |
|---|---|
| **Primary Working Group:**<br>**RTWG** | **Date: 8/25/2016**<br>**Action Taken: Approved**<br>**Abstained:**<br>**Opposed:** |
| **Reason for Opposition:** | |
| **Regional Compliance Working Group Recommendation**<br>***(if applicable)*** | **Date:**<br>**Recommended Action:** |

| | |
|---|---|
| **Secondary Working Group: PCWG** | **Date:** 9/8/2016<br>**Action Taken:** Unanimously Approved<br>**Abstained:**<br>**Opposed:** |
| **Reasons for Opposition:** | |
| **Secondary Working Group:** | **Date:**<br>**Action Taken:**<br>**Abstained:**<br>**Opposed:** |
| **Reasons for Opposition:** | |
| **Secondary Working Group:** | **Date:**<br>**Action Taken:**<br>**Abstained:**<br>**Opposed:** |
| **Reasons for Opposition:** | |
| **MOPC** | **Date:**<br>**Action Taken:**<br>**Abstained:**<br>**Opposed:** |
| **Reasons for Opposition:** | |
| **BOD/Member Committee** | **Date:**<br>**Action Taken:**<br>**Abstained:**<br>**Opposed:** |
| **Reasons for Opposition:** | |
| **COMMENTS** | |
| **Comment Author:** | |
| **Date Comments Submitted:** | |
| **Description of Comments:** | |
| **Status:** | |

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|---|
| **Comment Author:** |
| **Date Comments Submitted:** |
| **Description of Comments:** |
| **Status:** |
| **PROPOSED REVISION(S) TO SPP DOCUMENTS** |
| **Market Protocols** |

| |
|---|
| **Tariff (OATT)** |

**III. The Integrated Transmission Planning Process**

The ITP process is an iterative three-year process that includes 20-Year, 10-Year and Near Term Assessments. The 20-Year Assessment identifies the transmission projects, generally above 300 kV, and provides a grid flexible enough to provide benefits to the region across multiple scenarios. The 10-Year Assessment focuses on facilities 100 kV and above to meet the system needs over a ten-year horizon. The Near Term Assessment is performed annually and assesses the system upgrades, at all applicable voltage levels, required in the near term planning horizon.

**1) Commencement of the Process**

At the beginning of each calendar year the Transmission Provider shall notify stakeholders as to which part(s) of the integrated transmission planning cycle will take place during that year and the approximate timing of activities required to develop the SPP Transmission Expansion Plan. Notice of commencement of the process shall be posted on the SPP website and distributed via email distribution lists. Such notice shall include a timeline indicating when stakeholders are able to submit transmission needs, including transmission needs driven by Public Policy Requirements, and solutions to such needs as described in this Section III of this Attachment O.

**2) Transmission Planning Forums**

The transmission planning forums include planning summits and sub-regional planning meetings and these are conducted as follows:

a) Planning Summits

i) The purpose of the planning summits is for the Transmission Provider and the stakeholders to share current SPP transmission network issues, develop the study scopes, provide solution alternatives and review study findings. These summits also provide an open forum where all stakeholders have an opportunity to provide advice and recommendations to the Transmission Provider to aid in the development of the SPP Transmission Expansion Plan.

ii) The planning summits shall be open to all entities.

iii) The Transmission Provider shall chair and facilitate the planning summits.

iv) Planning summits shall be held at least semi-annually, including sub-regional breakout sessions of the SPP Region. Teleconference capability will be made available for planning summits. Planning summit web conferences shall be held as needed.

v) Notice of the planning summits and web conferences shall be posted on the SPP website and distributed via email distribution lists.

b) Sub-regional Planning Meetings

i) The Transmission Provider shall define sub-regions from time to time to address local area planning issues.

ii) The purpose of the sub-regional planning meetings is to identify unresolved local stakeholder issues and transmission solutions at a more granular level. The sub-regional planning meetings shall provide stakeholders with local needs the opportunity to provide advice and recommendations to the Transmission Provider and to the Transmission Owners. The sub-regional planning meetings shall provide a forum to review local planning criteria and needs as specified in Section II of this Attachment O.

iii) The sub-regional planning meetings shall be open to all entities.

iv) The Transmission Provider shall facilitate the sub-regional planning meetings.

v) A planning meeting shall be held at least annually for each individual sub-region.

vi) The sub-regional planning meetings shall be held in conjunction with the stakeholder working group meetings. Teleconference capability will be made available for sub-regional planning meetings. Sub-regional planning web conferences shall be held as needed.

vii) Notice of the sub-regional planning meetings, teleconferences and web conferences shall be posted on the SPP website and distributed via email distribution lists.

**3) Preparation of the 20-Year Assessment**

a) The Transmission Provider shall perform a 20-Year Assessment once every three years. The timing of this assessment shall generally be in the first half of each three-year cycle.

b) The 20-Year Assessment shall review the system for a twenty-year planning horizon and address, at a minimum, facilities 300 kV and above needed in year 20. This assessment is not intended to review each consecutive year in the planning horizon. The Transmission Provider shall work with stakeholders to identify the appropriate year(s) to study in developing the assessment study scope.

c) The 20-Year Assessment shall assess the cost effectiveness of proposed solutions over a forty-year time horizon.

d) The Transmission Provider shall develop the assessment study scope with input from the stakeholders. The study scope shall take into consideration the input requirements described in Section III.6 of this Attachment O.

e) The assessment study scope shall specify the methodology, criteria, assumptions, and data to be used.

f) The Transmission Provider, in consultation with the stakeholder working groups, shall finalize the assessment study scope including the methodology to be used to identify which transmission needs will be studied, ~~identification of those transmission needs that will be studied, such as transmission needs~~ including those driven by Public Policy Requirements, as further described in the Integrated Transmission Planning Manual. The assessment study scope shall also include the identification of any ~~current~~chronic operational or anticipated transmission needs to be studied.

g) The assessment study scope shall be posted on the SPP website and will be included in the published annual SPP Transmission Expansion Plan report. ~~The assessment study scope shall include an explanation of which transmission needs driven by Public Policy Requirements will be evaluated for potential solutions in the local and regional transmission planning process, as well as an explanation of why other suggested transmission needs will not be evaluated.~~

h) Notice of the transmission needs being evaluated in the assessment will be provided pursuant to Section III.8.b of this Attachment O. In accordance with the assessment study scope, the Transmission Provider shall analyze potential solutions following the process set forth in Section III.8 of this Attachment O.

**4) Preparation of the 10-Year Assessment**

a) The Transmission Provider shall perform a 10-Year Assessment once every three years as part of the three year planning cycle. The timing of this assessment shall generally be in the second half of the three-year planning cycle.

b) The 10-Year Assessment shall review the system for a ten-year planning horizon and address, at a minimum, facilities 100 kV and above needed in year 10. This assessment is not intended to review each consecutive year in the planning horizon. The Transmission Provider shall work with stakeholders to identify the appropriate year(s) to study in developing the assessment study scope.

c) The 10-Year Assessment shall assess the cost effectiveness of proposed solutions over a forty-year time horizon.

d) The Transmission Provider shall develop the assessment study scope with input from the stakeholders. The study scope shall take into consideration the input requirements described in Section III.6 of this Attachment O.

e) The assessment study scope shall specify the methodology, criteria, assumptions, and data to be used.

f) The Transmission Provider, in consultation with the stakeholder working groups, shall finalize the assessment study scope, including the methodology to be used to identify which

transmission needs will be studied.,identification of those transmission needs that will be studied, such as transmission needs including those driven by Public Policy Requirements, as further described in the Integrated Transmission Planning Manual. The assessment study scope shall also include the identification of any currentchronic operational or anticipated transmission needs to be studied.

g) The assessment study scope shall be posted on the SPP website and will be included in the published annual SPP Transmission Expansion Plan report. The assessment study scope shall include an explanation of which transmission needs driven by Public Policy Requirements will be evaluated for potential solutions in the local and regional transmission planning process, as well as an explanation of why other suggested transmission needs will not be evaluated.

h) Notice of the transmission needs being evaluated in the assessment will be provided pursuant to Section III.8.b of this Attachment O. In accordance with the assessment study scope, the Transmission Provider shall analyze potential solutions, including those upgrades approved by the SPP Board of Directors from the most recent 20-Year Assessment, following the process set forth in Section III.8 of this Attachment O.

**5) Preparation of the Near Term Assessment**

a) The Transmission Provider shall perform the Near Term Assessment on an annual basis.

b) The Near Term Assessment will be performed on a shorter planning horizon than the 10-Year Assessment and shall focus primarily on identifying solutions required to meet the reliability criteria defined in Section III.6 of this Attachment O.

c) The assessment study scope shall specify the methodology, criteria, assumptions, and data to be used to develop the list of proposed near term upgrades.

d) The Transmission Provider, in consultation with the stakeholder working groups, shall finalize the assessment study scope, including the methodology to be used to identify which transmission needs will be studied., identification of those transmission needs that will be studied, such as transmission needs including those driven by Public Policy Requirements, as further described in the Integrated Transmission Planning Manual. The

assessment study scope shall also include the identification of any ~~current~~chronic operational or anticipated transmission needs to be studied. The study scope shall take into consideration the input requirements described in Section III.6 of this Attachment O.

e) The assessment study scope shall be posted on the SPP website and will be included in the published annual SPP Transmission Expansion Plan report. ~~The assessment study scope shall include an explanation of which transmission needs driven by Public Policy Requirements will be evaluated for potential solutions in the local and regional transmission planning process, as well as an explanation of why other suggested transmission needs will not be evaluated.~~

f) Notice of the transmission needs being evaluated in the assessment will be provided pursuant to Section III.8.b of this Attachment O. In accordance with the assessment study scope, the Transmission Provider shall analyze potential solutions, including those upgrades approved by the SPP Board of Directors from the most recent 20-Year Assessment and 10-Year Assessment,~~-~~ following the process set forth in Section III.8 of this Attachment O.

**6) Policy, Reliability, and Economic Input Requirements to Planning Studies**

The Transmission Provider shall incorporate, as appropriate for the assessment being performed, the following into its planning studies:

a) NERC Reliability Standards;

b) SPP Criteria;

c) Transmission Owner-specific planning criteria as set forth in Section II of this Attachment O;

d) Previously identified and approved transmission projects;

e) Zonal Reliability Upgrades developed by Transmission Owners, including those that have their own FERC approved local planning process, to meet local area reliability criteria;

f) Long-term firm Transmission Service;

g) Load forecasts, including the impact on load of existing and planned demand management programs, exclusive of demand response resources;

h) Capacity forecasts, including generation additions and retirements;

i) Existing and planned demand response resources;

j) Congestion within SPP and between the SPP Region and other regions and balancing areas;

k) Renewable energy standards;

l) Fuel price forecasts;

m) Energy efficiency requirements;

n) Other relevant environmental or government mandates;

o) Transmission needs driven by Public Policy Requirements identified through a survey of stakeholders to identify Public Policy Requirements ~~and additional Public Policy Requirements as determined by the Transmission Provider~~ using the methodology in the assessment study scope ~~and stakeholders during study scope development;~~ and

p) Other input requirements identified during the stakeholder process.

q) In developing the long term capacity forecasts, the studies will reflect generation and demand response resources capable of providing any of the functions assessed in the SPP planning process, and can be relied upon on a long-term basis. Such demand response resources shall be permitted to participate in the planning process on a comparable basis. These studies will consider operational experience gained from markets operated by the Transmission Provider.

**8) Process to Analyze Transmission Alternatives for each Assessment**

The following shall be performed, at the appropriate time in the respective planning cycle, for the 20-Year Assessment, 10-Year Assessment and Near Term Assessment studies:

a) The Transmission Provider shall perform the required studies to analyze the potential alternatives for improvements to the Transmission System, provided by the Transmission Provider and by the stakeholders, in order to address the final assessment study scope agreed to with the stakeholders. This analysis shall consider the current and anticipated future needs of the SPP Region within the parameters of the study scope. The analysis shall also consider the value brought to the SPP Region by incremental changes to the proposed solutions.

b) After the study scope has been approved, the Transmission Provider shall notify stakeholders of identified transmission needs and provide a transmission planning response window of thirty (30) days during which any stakeholder may propose a detailed project proposal ("DPP"). The Transmission Provider shall track each DPP and retain the information submitted pursuant to Section III.8.b(i) of this Attachment O. If the project described in a DPP is included in the ITP plan, the submitting stakeholder may qualify for incentive points as described in Section III of Attachment Y of this Tariff. A stakeholder that submits a DPP that is equivalent to a DPP or Transmission Provider identified project submitted in a previous assessment during the current three (3) year planning cycle shall not be eligible for incentive points.

i) The information supplied by the stakeholder must be sufficient to allow the Transmission Provider to evaluate the project described in the DPP. At a minimum, the DPP must include the following information:

a. description of the project including one-line diagrams, configuration(s), proposed line routing, preliminary transmission line and substation engineering and design data;

b. description of the needs identified in the ITP process to be addressed;

c. proposed project schedule including, at a minimum, timelines for completing regulatory, right-of-way, environmental, engineering, procurement and construction activities;

d. description of any known or anticipated risks to the project schedule and any recommended mitigation plans;

e. description of any known or anticipated environmental impacts;

f. engineering and modeling data required by the Transmission Provider;

g. identification and justification of any changes in modeling assumptions from those used in the current ITP process;

h. results of transmission project economic or reliability analysis, if applicable; and

i. any other information available to support the evaluation of the project.

ii) Any Stakeholder providing a DPP that meets the requirements set forth in Section III.8.b(i) of this Attachment O will be recorded by the Transmission Provider for the ITP planning assessment for the which the DPP was submitted, including the contact information of the stakeholder that submitted the DPP.

iii) If the Transmission Provider, in its sole discretion, determines that the information provided in a DPP is incomplete, the Transmission Provider shall provide written notice to the stakeholder that submitted the DPP. The stakeholder shall be permitted to cure the such deficiency by the later of the end of the transmission planning response window or 10 days after the Transmission Provider issues such notice. Failure to cure the deficiency shall result in the submission being disqualified as a DPP.

iv) The Transmission Provider shall hold all DPPs in confidence until the thirty (30) day transmission planning response window has closed. Subsequent to the close of the transmission planning response window, information contained in a DPP shall be disclosed to stakeholders only as the Transmission Provider determines is necessary for review and documentation of the reason(s) why the DPP was or was not chosen in the current ITP assessment. The remaining information in the DPP will remain confidential.

v) A stakeholder that submits a DPP may remain eligible for incentive points, in accordance with Section III of Attachment Y of this Tariff, for the remainder of the current three (3) year planning cycle of the ITP process. In order for the stakeholder to maintain its eligibility for incentive points in any subsequent ITP assessment within the current three (3) year planning cycle, the stakeholder must resubmit the information required by Section III.8.b(1) of this Attachment O, including identification of the need(s) in the ITP assessment that the DPP is proposed to solve. If the stakeholder does not provide the updated information, the stakeholder will not be eligible for incentive points for the DPP for that subsequent assessment; however, the stakeholder would be eligible for incentive points in any other ITP assessment during the current three (3) year planning

cycle, provided that the stakeholder updates the DPP information for that assessment.

c) For all potential alternatives provided by the stakeholders, including reliability upgrades that Transmission Owners (which includes those Transmission Owners that have their own FERC approved local planning process), propose to address violations of company-specific planning criteria pursuant to Section II.5 of this Attachment O, and upgrades to address transmission needs driven in whole or in part by identified Public Policy Requirements, the Transmission Provider shall determine if there is a more comprehensive regional solution to address the reliability needs,
economic needs, and needs driven by Public Policy Requirements identified in the assessment.

d) In addition to recommended upgrades, the Transmission Provider will consider, on a comparable basis, any alternative proposals which could include, but would not be limited to, generation options, demand response programs, "smart grid" technologies, and energy efficiency programs. Solutions will be evaluated against each other based on a comparison of their relative effectiveness of performance and economics.

e) The Transmission Provider shall assess the cost effectiveness of proposed solutions. Such assessments shall be performed in accordance with the Integrated Transmission Planning Manual, which shall be developed by the Transmission Provider, in consultation with stakeholders, and approved by the Markets and Operations Policy Committee. SPP shall post this manual on its website.

f) The analysis described above shall take into consideration the following:

i) The financial modeling time frame for the analysis shall be 40 years (with the last 20 years provided by a terminal value).

ii) The analysis shall include quantifying the benefits resulting from dispatch savings, loss reductions, avoided projects, applicable environmental impacts, reduction in

required operating reserves, interconnection improvements, congestion reduction, and other benefit metrics as appropriate.

iii) The analysis shall identify and quantify, if possible, the benefits related to any proposed transmission upgrade that is required to meet any regional reliability criteria.

iv) The analysis scope shall include different scenarios to analyze sensitivities to load forecasts, wind generation levels, fuel prices, environmental costs, and other relevant factors. The Transmission Provider shall consult the stakeholders to guide the development of these scenarios.

v) The results of the analysis shall be reported on a regional, zonal, and state-specific basis.

vi) The analysis shall assess the net impact of the transmission plan, developed in accordance with this Attachment O, on a typical residential customer within the SPP Region and on a $/kWh basis.

g) The Transmission Provider shall make a comprehensive presentation of the preferred potential solutions, including the results of the analysis above, to the stakeholder working groups and at a planning summit meeting or web conference. The presentation shall include a discussion of all the Transmission Provider and stakeholder alternatives considered and reasons for choosing the particular preferred solutions.

h) The Transmission Provider shall solicit feedback on the solutions from the stakeholder working groups and through the stakeholders attending the various planning summits. The Transmission Provider will also include feedback from stakeholders through other meetings, teleconferences, web conferences, and via email or secure web-based workspace. Stakeholders may propose any combination of demand resources, transmission, or generation as alternate solutions to identified reliability and economic needs.

i) Upon consideration of the results of the cost effectiveness analysis and feedback received in the subsequent review process, the Transmission Provider shall prepare a draft list of projects for review and approval in accordance with Section V of this Attachment O.

| **SPP Criteria** |
| --- |

| **SPP Business Practices** |
| --- |

**Southwest Power Pool**
**Integrated Transmission Planning Manual Task Force Charter**
**August 25th, 2016**

## PURPOSE

The Integrated Transmission Planning Manual Task Force (ITP Manual TF) is responsible for reviewing and updating the Southwest Power Pool (SPP) ITP Manual. The ITP Manual TF will review the ITP planning processes and will propose new language and changes to the current manual to facilitate effective and efficient Integrated Transmission Planning studies pursuant to the direction of the ESWG and TWG. The ITP Manual TF will make a recommendation to the Economic Studies Working Group (ESWG) and the Transmission Working Group (TWG) of its findings.

## SCOPE OF ACTIVITIES

In carrying out its purposes, the ITP Manual TF will:

1. Meet periodically to review the existing manual, discuss needed improvements, and propose new language in light of the recommendations of the Transmission Planning Improvement Task Force (TPITF) as approved by ~~MOPC and the Strategic Planning Committee (SPC)~~the SPP Board of Directors,

2. Submit new or modified business practices and any tariff changes being proposed to the ESWG and TWG for approval,

3. Provide frequent updates to the ESWG and TWG on the status and progress of ITP Manual,

4. Seek input from the Operating Reliability Working Group (ORWG) to ensure operational issues are properly addressed in the planning processes.

## REPRESENTATION

ITP Manual TF membership will consist of at least six and up to eight members representing ESWG, MDWG, and TWG, including a chairman.

## DURATION

The ITP Manual TF is expected to finish work by August 2017.

## REPORTING

The ITP Manual TF reports to the ESWG and TWG.

# 2017 ITP10 Economic Project Grouping

ESWG

09/15/2016

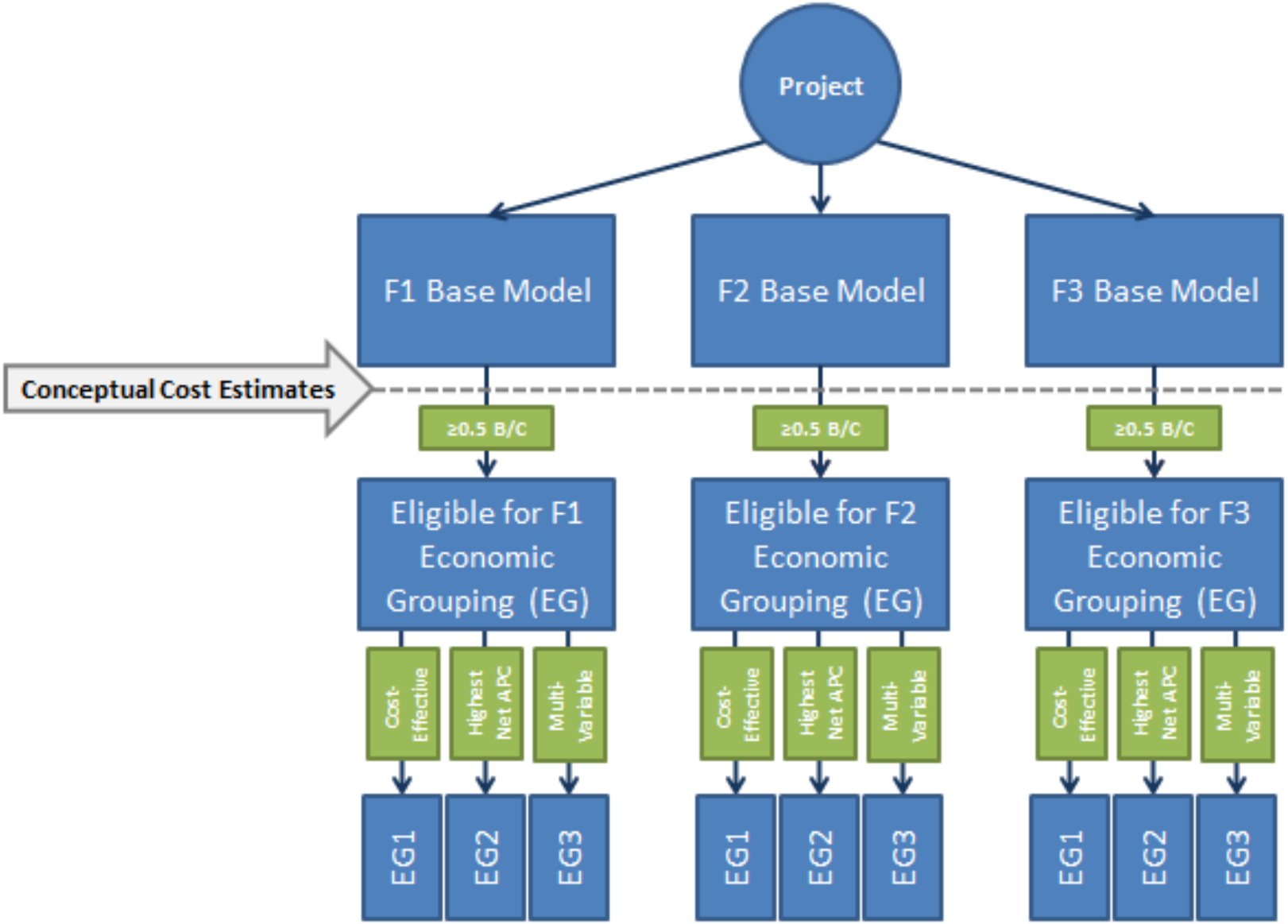
# Overview

- Review of economic project grouping methodology
- Multi-variable portfolio discussion
- Model correction impacts on economic needs
- Additional informative analysis

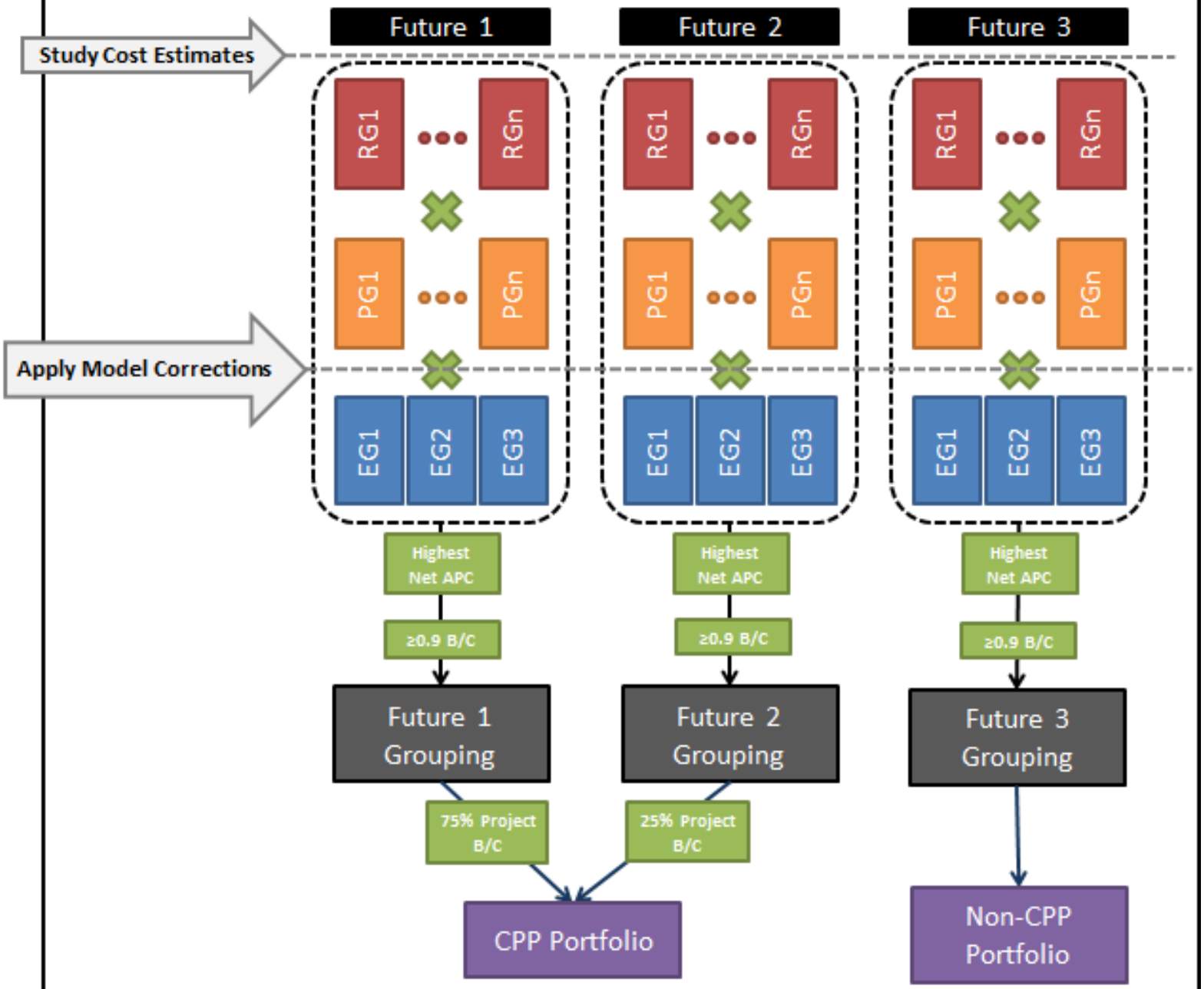
# Project Grouping Portfolios

- Cost-Effective
  - (Project cost) / (flowgate congestion score relief)
  - Inherently targets selection of a project per flowgate
- Highest Net APC Benefit
  - (SPP APC benefit) – (project cost)
  - Project selection per total SPP net APC benefit with review of relief per need
- Multi-Variable
  - Layer projects from other two groupings, additional analysis, and engineering judgment to develop a portfolio
- Grouping with the highest net APC as a portfolio is selected as the final portfolio for each future

# Economic Project Screening/Grouping



# Grouping Selection and Consolidation



# Multi-Variable Portfolio

- *Needs Assessment Posting:* "In light of other SPP initiatives (i.e., RCAR II and seams projects) and identified chronic operational issues not previously addressed in the long-term planning processes, SPP determined it is necessary to perform further analysis on the identified needs and to provide an opportunity for the submission of solutions."
- Current Target Areas
  - CUS/Seam (Brookline)
  - SPS

# Model Corrections

- *Needs Assessment Posting:* "SPP will be evaluating the impacts of any model changes during the solution development phase of the 2017 ITP10. This includes any model corrections submitted after the October 1, 2015 deadline. […] Model corrections will be evaluated to determine the impact on posted transmission needs and utilized as solutions in development of transmission portfolios."

- Clarification of red text
  - Model corrections were evaluated for relief or aggravation of posted needs
  - Model corrections will be modeled as a new baseline when evaluating APC benefit of project portfolios in order to appropriately reflect the benefit of proposed projects

# Model Correction Impacts

| Constraint Common Name | F1 Relief | F2 Relief | F3 Relief |
|---|---|---|---|
| Watford City 230/115kV Transformer (System Intact Event) | 100% | 100% | 100% |
| Coyote - Beulah 115kV FLO Center - Mandon 230kV | 100% | 100% | -- |
| GRE-McHenrey 230/115kV Transformer (System Intact Event) | 83% | 87% | -- |
| Winnebago- Blueeta 161kV FLO Field - Wilmart 345kV | -112% | -94% | -- |
| Tupelo Tap - Tupelo 138kV FLO Pittsburg - Seminole 345kV | 66% | 86% | -- |
| Fort Calhoun Interface | 100% | 100% | -- |
| Sundown 230/115kV Transformer FLO Lamb County - Hockley 115kV | 74% | 74% | 60% |
| Grand Rapids - Pokegma 115kV FLO Forbes - Chisago 500kV | 100% | -- | -- |
| Naples Tap - Cornville Tap 138kV FLO Sunnyside - G14-057T 345kV | -- | 94% | 96% |
| Highway 59 - VBI North 161kV FLO Fort Smith - Muskogee 345kV | -- | 100% | -- |
| Chub Lake - Kenrick 115kV FLO Helena - Scott Co 345kV | -- | 100% | -- |
| Tupelo Tap - Tupelo 138kV FLO Pittsburg - Valiant 345kV | -- | -- | 94% |
| Huron - B Tap 115kV Ckt1 FLO Ft. Thompson - Letcher 230kV Ckt 1 | -- | -- | 100% |
| Scottsbluff - Victory Hill 115kV Ckt1 FLO Stegall 345/230kV Transformer Ckt 1 | -- | -- | 94% |

# Additional Analysis

- SPP Staff currently leveraging outside consulting to help inform project recommendations
  - Outside of scoped analysis and portfolio development
  - May impact project approval recommendations
- Analysis
  - Inclusion of all known model corrections and NTC projects in base model
  - Additional economic model changes to support improvement of DC-AC model issues
  - Currently performing constraint assessment
  - Will be reassessing system congestion and reliability criteria violations to determine impacts to 2017 ITP10 needs

# Mitigation of Transmission Outages Metric – 2017 ITP10

ESWG

09/15/2016

# Mitigation of Transmission Outages Metric

- Transmission outages are not captured in standard PROMOD simulations
- Additional PROMOD runs with a subset of outages are performed, and APC calculated
- Incremental APC benefit due to transmission outages is captured as the benefit of Mitigating Transmission Outages

# Process

- Obtain historical data from operations
  - Which year(s) to analyze?
- Manipulate the data into a workable format
- Determine outage threshold (5 days+, 230 kV+, etc.)
- Create import template to be read into PowerBase/PROMOD
- Work through issues in order to get PROMOD to run
  - Identify historical versus future topology differences, edit outages accordingly
    - Branch or Bus differences
  - Perform for base and change cases
- Perform constraint assessment, identify new constraints
  - How should this be performed?
- Analyze APC benefit

# Alternative Technique

- The full analysis was performed for RCAR I in 2012/2013.
- The additional benefit when outages were present was 11.3% of the total APC benefit
- In other studies since, this 11.3% has been applied in lieu of performing the full analysis
  - 2015 ITP10
  - RCAR II
- ESWG 6/24/14 Minutes:
  - The calculation of Mitigation of Transmission Outage Costs benefits should include a "periodic review of the historical transmission outages to ensure the methodology is historically reasonable."

# Issues with Conducting Full Analysis

- Staff hours
  - Approximately 220 hours
- Stakeholder hours
  - Approving constraint assessment process and results
- Pushes times out
  - Additional four to six weeks to schedule

# Recommendation

- For the 2017 ITP10, Staff recommends the Mitigation of Transmission Outages benefit metric be calculated on the final portfolios using the previously-calculated 11.3% multiplier


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

# ITP Scope Standardization

ESWG

09/15/2016

# ITP Scope Items

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

# Discussion Items Checklist

ITP Scope Standardization

# Modeling Data

- ABB Reference Case
  - Member review of what data items?
- Load and generation review
  - What data items?
- Resource Addition Request Process
- Benchmarking
  - What data items?
  - What model(s)?
- Hourly profiles
  - DC Tie methodology
  - Renewable data source and years
  - Load data source and years
  - Methodology for updates

# Modeling Data

- Fuel prices
  - Data source
- Emission prices
  - Data source
- Wind pricing
  - Cost and curtailment methodology
- Hurdle rates
  - Data source and methodology
- Hydro transaction methodology
- Interruptible load modeling

# Resource Planning Data

- Renewable policy survey
  - Structure and usage
- Resource plan methodology
- Resource plan prototypes
  - Data source
- Renewable capacity factor
  - Data source
- Renewable accreditation
  - Existing
  - Future
- Resource siting
  - Whitepaper

# Assessments/Solutions

- Economic needs criteria
  - Study
  - Operational
- Policy needs criteria
- Solution criteria
  - Screening/portfolio
  - Methodology for interaction between years
- Project grouping criteria
  - Methodology for interaction between years
- Portfolio consolidation criteria
- Sensitivities
  - What portfolio(s)?
  - What future(s)?
- Metrics
  - What portfolio(s)?
  - What future(s)?

# Resource Planning

ITP Scope Standardization

# RP Proposal – Baseline

- Members submit expected future generation (conventional/renewable) through the MDWG model development process
  - Load and generation review
  - Reflective of company IRP
  - Includes bus siting
- Member submitted parameters vs. standard prototype parameters

# RP Proposal – Renewables

- Not based on renewable mandates/goals
- No software simulations
- Develop low, mid, and high % increase in wind and solar to document in ITP Manual
  - For each study, will select low, mid, or high for each
  - Allows for flexibility in additions
- 2017 Renewable Additions as product of zonal peak load:

| | Non-CPP | CPP |
|---|---|---|
| Wind | 20% | 25% |
| Solar (Utility) | 3% | 5% |
| Solar (Rooftop) | 1% | 0% |

- Proposed low/mid/high:
  - Wind: 20%/25%/30% of peak demand
  - Solar: (Minus 1 Std Dev)/System IRP Average/(Plus 1 Std Dev)
  - Rooftop Solar: 0%/1%/2%

# RP Proposal – Renewables

- Export wind and solar additions
  - Calculate ratio of existing export wind to existing total wind in SPP
  - After computing wind additions for SPP entities, add export wind for external entities to keep the same ratio
  - Example: 10 GW existing wind for SPP entities, 1 GW existing wind for export
    - If adding 5 GW of wind for SPP entities, add 500 MW of wind for export
  - Same process for solar
- Hydro, Biomass, Other – RAR process

# RP Proposal – Conventional

- After renewable additions, perform zonal resource shortfall calculations by spreadsheet
- Add CCs and CTs by zone to meet target peaking/total gen ratio
  - No software simulations
  - Based on historical ITP10 models and resource planning results, develop formula that relates these parameters, by zone:
    - Load Factor
    - Peaking Generation
    - Total Generation
  - Based on zonal load factors, determine target peaking/total gen ratio by zone
    - The target vs. actual ratio drives the mix of CC vs. CT additions for that zone

# Historical Resource Planning Results – Conventional

| Study | Future | CPP | 10-yr Conventional Additions (MW) | CC Additions | CT Additions |
|---|---|---|---|---|---|
| 2017 ITP10 | F1 | Yes | 9,350 | **100%** | **0%** |
| 2017 ITP10 | F2 | Yes | 10,332 | **96%** | **4%** |
| 2017 ITP10 | F3 | No | 9,192 | **72%** | **28%** |
| 2015 ITP10 | F1 | No | 15,260 | **37%** | **63%** |
| 2015 ITP10 | F2 | No | 21,020 | **38%** | **62%** |

For CPP type futures going forward, conventional resource additions could be 100% CCs

# External RP Proposal – Conventional

- MISO – use conventional resource additions from the current MTEP model
- AECI, TVA, SaskPower, Manitoba, any others – use the same methodology for each that is being proposed for SPP
  - Start with capacity shortfall calculations
  - Add CCs and/or CTs based on load factor, peaking gen, and total gen
  - Previously, external areas have been planned in a similar manner – spreadsheet work (no simulations) to determine some mix of CC and CT additions. This proposed method is a little more detailed, as it takes into account each entity's current peaking generation and total generation.

# Resource Plan – Years 2, 5, 10

- Year 2
  - High Certainty for any planned resource additions
  - IPP resources assigned to resource deficient zones
  - Ensure region meets reserve margin requirements
  - SPP will not identify resource additions
- Years 5 and 10
  - Could have Less Certainty for any forecasted resource additions
  - Add conventional and renewable resource plan units as needed for year 10
    - 50% of unit additions are in-service in year 5