

**MARKETS & OPERATIONS POLICY COMMITTEE MEETING (MOPC)**

**Sept. 8, 1:00 p.m. to 5:00 p.m. CST**

**Webex**

**AGENDA**

1. **Welcome & introduction .....5 min.**  
Denise Buffington (Evergy)  
Lanny Nickell (SPP)
2. **Generator Outage Task Force.....60 min.**  
James Hicks (Western Area Power Administration – Upper Great Plains)  
Kathryn Dial (SPP)
3. **Strategic and Creative Re-engineering of Integrated Planning Team (SCRIPT)..... 170 min.**  
Mark Crisson (SPP director)  
Lanny Nickell (SPP)  
Kelsey Allen (SPP)  
Steve Purdy (SPP)  
Antoine Lucas (SPP)  
Casey Cathey (SPP)  
Clint Savoy (SPP)  
Charles Locke (SPP)
4. **Closing..... 5 min.**  
Denise Buffington (Evergy)  
Lanny Nickell (SPP)

## **PURPOSE**

Bring recommendations to MOPC to help improve generator outage planning & coordination.

## **ESSENTIAL POINTS**

- The Generator Outage Task Force is concerned about the impact of the changing resource mix on the ability to perform maintenance on conventional resources.
- The group realized a need for an effective means for SPP to communicate non-emergency messages with Generator Operators & Owners.
- Changes to the Outage Coordination Methodology will simplify outage reporting & allow for more accurate outage data analysis.



# GENERATION OUTAGE TASK FORCE EDUCATION PRESENTATION TO MOPC

JAMES HICKS – WESTERN AREA POWER  
ADMINISTRATION – UPPER GREAT PLAINS

KATHRYN DIAL – SOUTHWEST POWER POOL

*Working together to responsibly and economically  
keep the lights on today and in the future.*



SPPorg



southwest-power-pool

# PURPOSE

**Educate on GOTF activities**

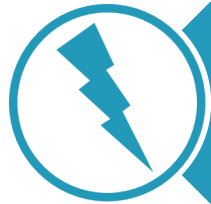
**Inform about GOTF recommendations to MOPC**

**Get feedback prior to finalizing recommendations**

**Prepare MOPC for recommendations coming in October**

# GOALS & DRIVERS

Reliable generator outage scheduling today & in the future!



Reliably manage generator outage scheduling today & in the future



Align operations planning & supply adequacy planning



Boost SPP communication with Generator Operators & Owners

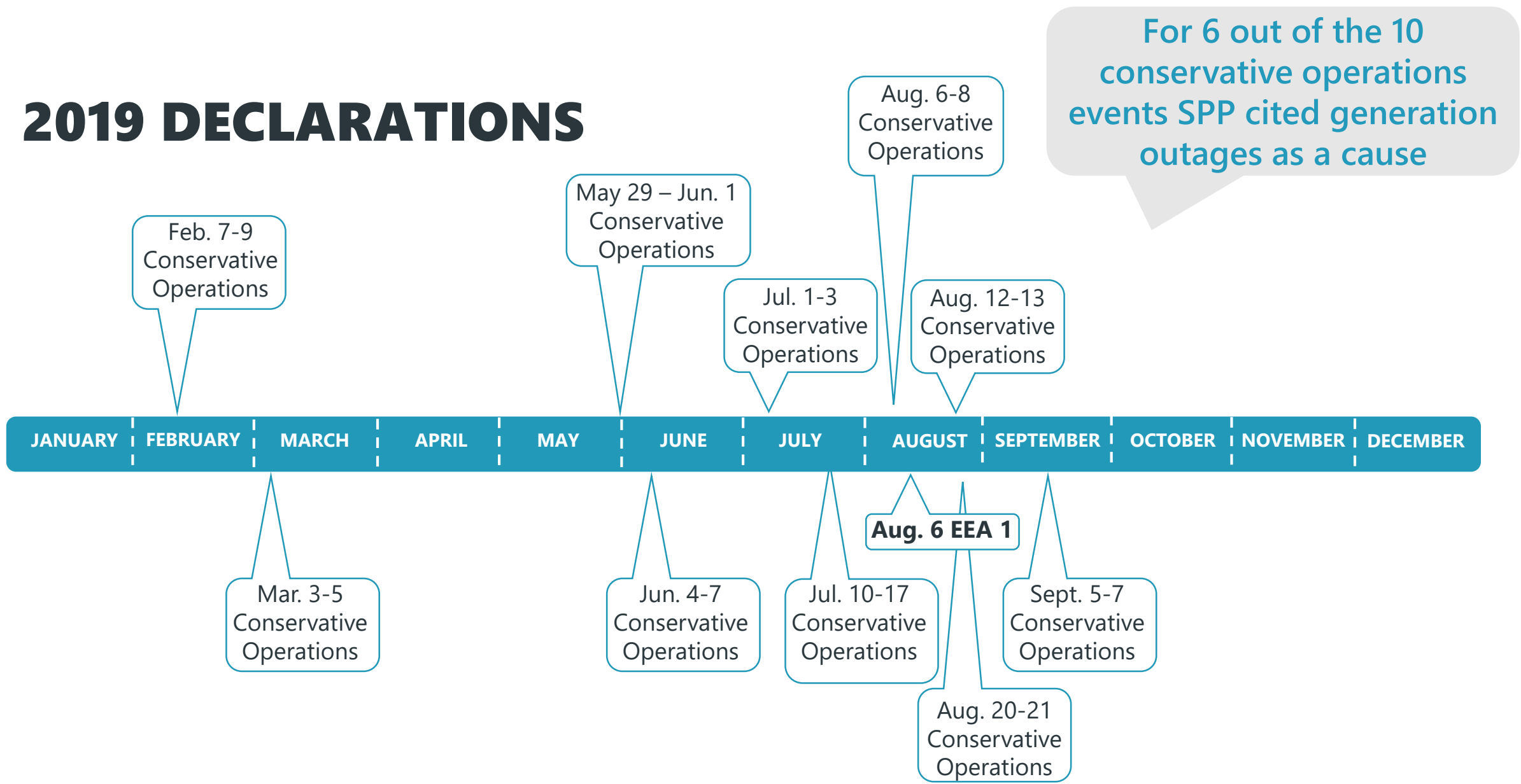


Improve SPP Outage Coordination Methodology

# HISTORY & BACKGROUND

- 2019 conservative operations events & August EEA1 lead to MOPC action item 295 & formation of the GOTF
- GOTF kicked off in April 2020
- Task force focused on generator outage scheduling practices & concerns over how to reliably schedule outages given the changing resource mix

# 2019 DECLARATIONS



# RECOMMENDATION #1

GENERATION ASSESSMENT PROCESS



# GENERATION ASSESSMENT PROCESS (GAP)

- Used for outage scheduling to help ensure BA capacity adequacy
- Long-term horizon (next 5 years)
- Short-term horizon (next 7 days)
- Inputs:
  - Wind
  - Demand
  - Generation capacity & outages
  - Forced unscheduled outages
- Maintenance Margin is the allowable amount of Planned or Opportunity outages that can be taken based on GAP analysis
- Daily updated Maintenance Margin values are posted on the SPP Portal <https://marketplace.spp.org/pages/available-outage-maintenance-margin>

# GAP MAINTENANCE MARGIN

- Currently GAP output is daily maintenance margin values for short-term & long-term
- GOTF recommends changing the short-term GAP to output hourly maintenance margin values
- SPP gets hourly forecast data that can be used to help output hourly maintenance margin values for the short-term horizon

# HOW WILL THIS HELP?

- Allowing additional maintenance margin during off-peak hours
- Accommodate generation outages on renewables that may not be able to generate due to weather conditions (ex. evening hours for solar resources)
- Increase transparency for intervals of most concern in the short term

# RECOMMENDATION #2

OUTAGE COORDINATION METHODOLOGY

# SPP OUTAGE COORDINATION METHODOLOGY

- Process document owned by the Operating Reliability Working Group (ORWG)
- Recommended changes are focused on generator outages
- GOTF coordinated with SPP Market Monitoring Unit (MMU) & Operations Planning staff
- Better alignment with NERC Generating Availability Data System (GADS) reporting
- Increased flexibility in generator outage reporting

# GENERATOR OUTAGE KEY CHANGES

- Outage/derate reporting threshold changing from 25 MW to 10 MW
- Outage priority types changing from 6 to 3
- Forced outages may now have up to 7 days maximum lead time to align with NERC GADS
- Cause codes added & updated

# RECOMMENDATION #3

EXPLODER LIST FOR GENERATOR OPERATORS &  
OWNERS

# IMPROVE COMMUNICATION & TRANSPARENCY

- SPP does not currently have a comprehensive & up-to-date email list for generator operators & owners
- Updates to documents such as the Outage Coordination Methodology may be missed if generator operators & owners do not tune into the ORWG
- GOTF recommends an SPP exploder list be developed
- Subscriptions need to be maintained at the company level in order to ensure list stays relevant



# RECOMMENDATION #4

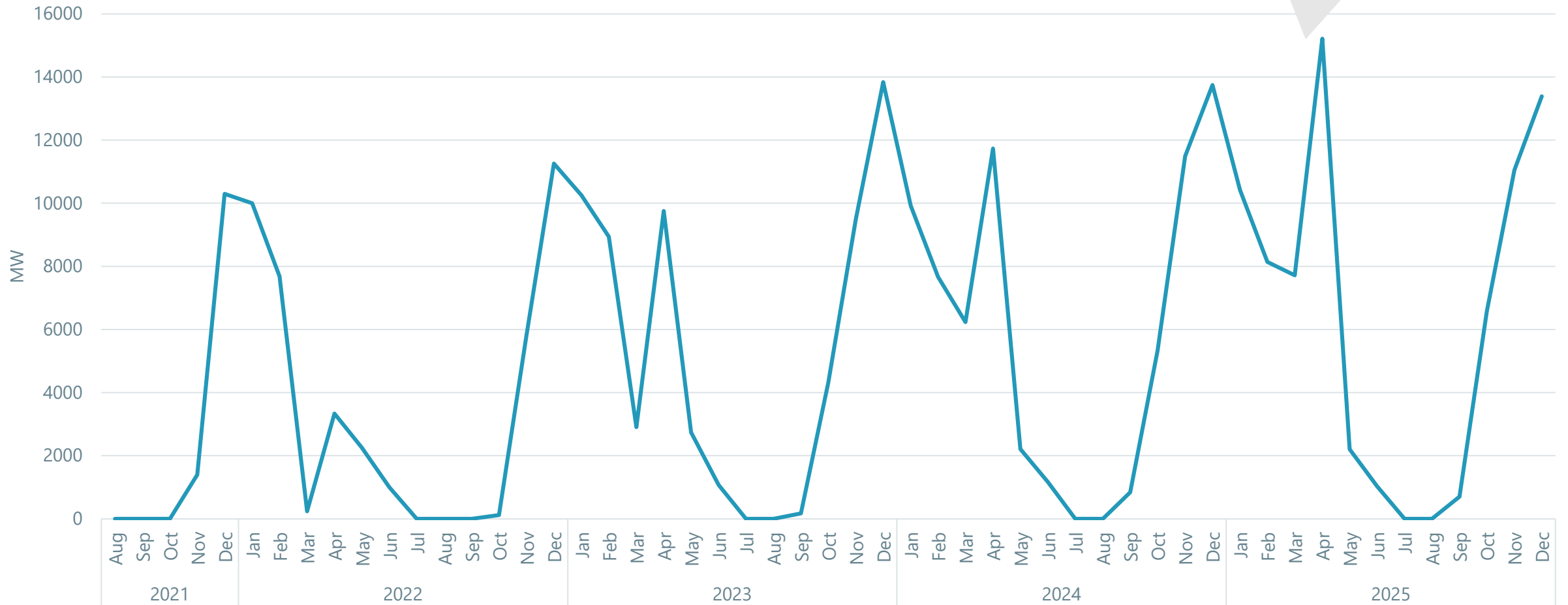
CHANGING RESOURCE MIX

# GAP IMPACT STUDY

- Summer & winter seasons are already very constrained
- Available maintenance margin windows may not always be sufficient to allow all units to perform necessary maintenance
- Study will look out 5-10 years at impacts on outage scheduling from:
  - Increased variable energy accreditation
  - Conventional resource retirements
- Collaborative effort between SPP Planning & Operations

# AVAILABLE GAP MAINTENANCE MARGIN

No maintenance margin in summer, winter margin may continue to shrink



# STUDY FOCUS

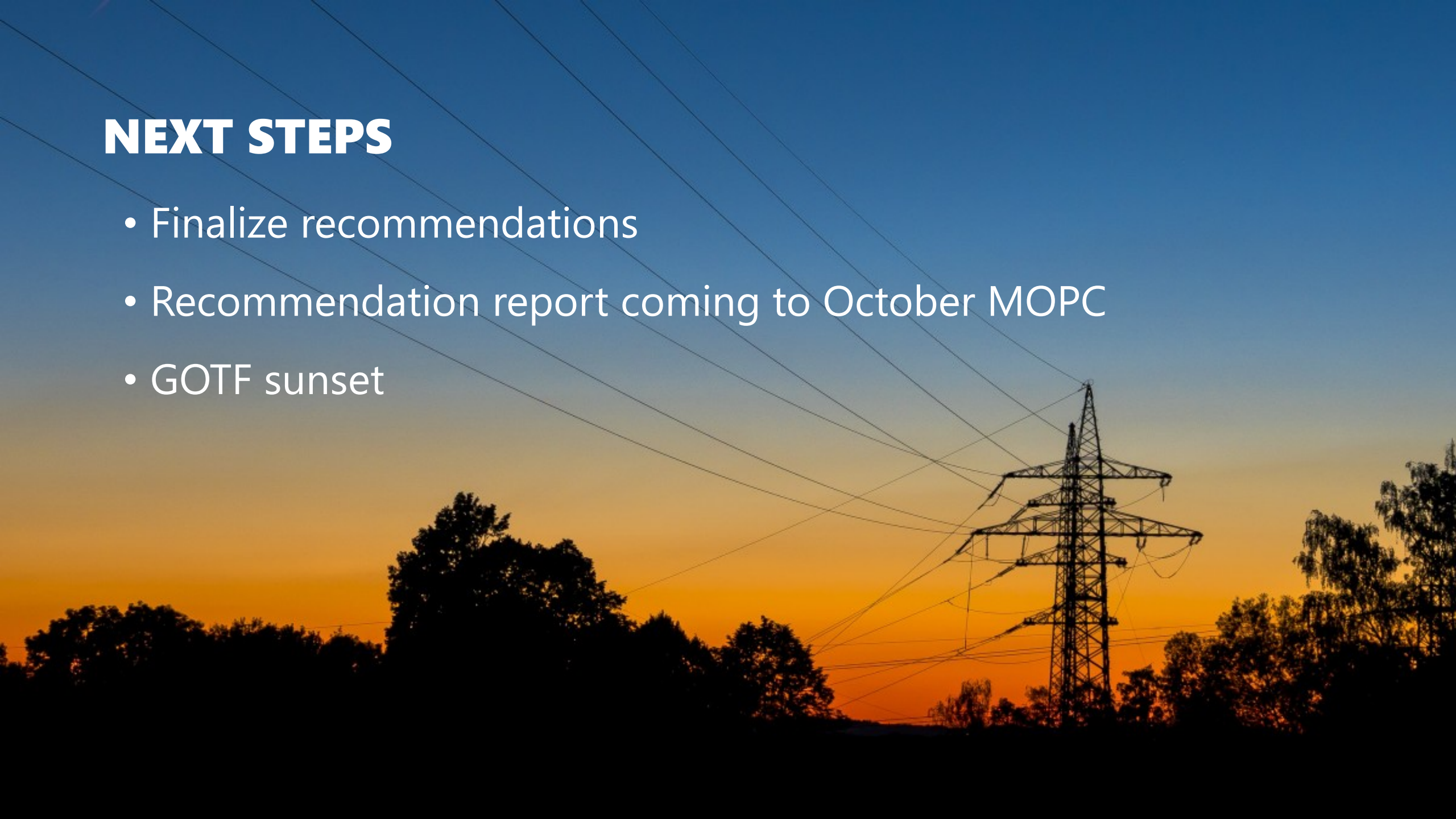
- **Primary – long-term GAP**
  - Analyze how the increase in variable energy resource accreditation is paving the way for further conventional capacity retirements
  - Look into affects on traditional resource maintenance outage scheduling in GAP
- **Secondary – short-term GAP**
  - Look for potential increases in uncertainty in the next 5-10 years & impacts to the maintenance margin

# STUDY DELIVERABLES

- Potential adjustments needed to long-term and short-term GAP calculation given future scenarios
- Determine if there is a maximum amount of variable energy resource impacts which GAP and maintenance outage scheduling can handle
- Determine if there is a need for changes to the resource adequacy process and align with GAP

# NEXT STEPS

- Finalize recommendations
- Recommendation report coming to October MOPC
- GOTF sunset



# RECOMMENDATIONS SUMMARY

1. Change short-term GAP to output hourly maintenance margin values (SPP staff)
2. Revise outage coordination methodology (ORWG)
3. Create GO & GOP exploder list (SPP staff)
  - Subscriptions to be maintained by GOs & GOPs
4. Conduct GAP impact study (SPP staff)

# GENERATOR OUTAGE TASK FORCE CONTACTS

## CHAIR

James Hicks

Power System Dispatcher Trainer

[hicks@wapa.gov](mailto:hicks@wapa.gov)

## SPP STAFF SECRETARY

Kathryn Dial

Senior Technical Analyst – Operations

[kdial@spp.org](mailto:kdial@spp.org)





# SPP'S SCRIPT

## OVERVIEW & UPDATE

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



# THE SCRIPT'S SCOPE OF WORK

Strategic and Creative Re-engineering of Integrated Planning Team (SCRIPT)

The SCRIPT is tasked with proposing policies to:

- **Consolidate** planning processes
- Improve **services** processes
  - responsiveness and certainty
  - Reduce dependence on queue-driven analyses
- **Optimize** our transmission network
- Improve **decision quality**
- Facilitate beneficial interregional energy **transfers**
- Improve **cost-sharing**



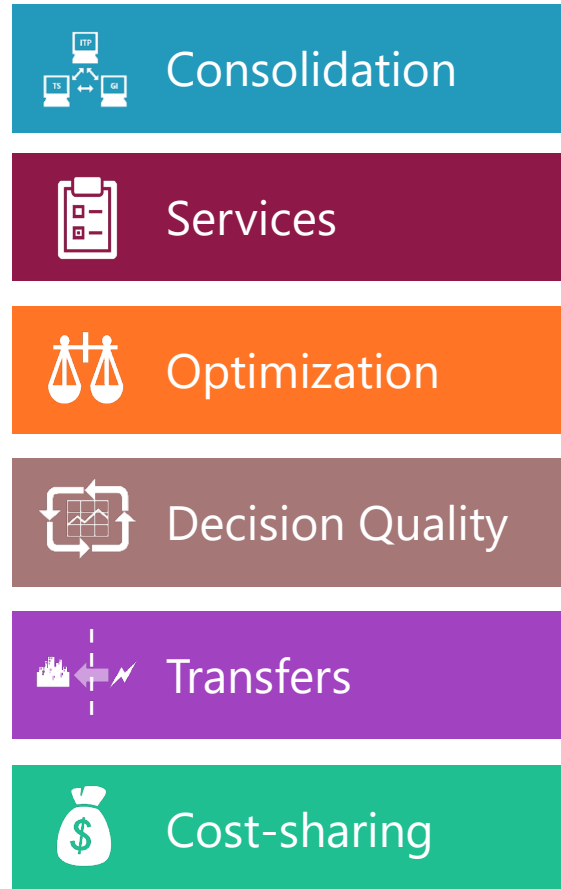
# POTENTIAL VALUE OF THE SCRIPT'S WORK

- Lower administrative costs
- More optimal transmission
- More equitable cost sharing
- More timely processes
- Increased certainty
- Increased value of transmission

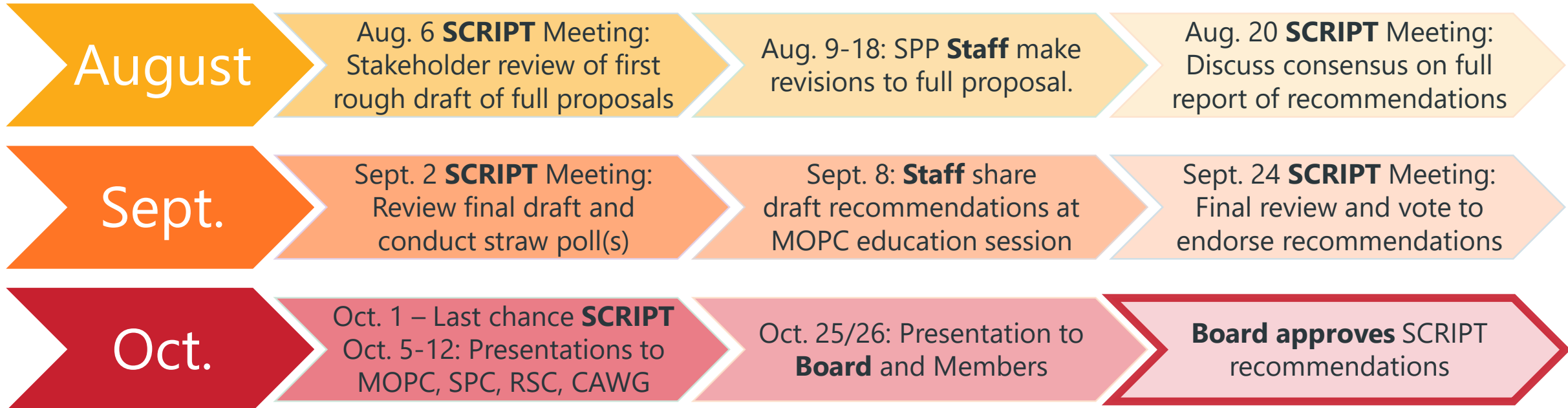


# DRAFT PROPOSED RECOMMENDATIONS

- Initial recommendations were drafted by sub-teams of SCRIPT members and staff for each area of the SCRIPT's scope of work
- This year, the SCRIPT has reviewed, provided feedback and improved recommendations
- All recommendations are still under review and will continue to see revision
- You will see changes: staff are working to reorganize and categorize recommendations:
  - Core to implementing a consolidated planning process
  - Potential enhancements to a consolidated process
  - Improvements to planning independent from consolidation
- In September and October, the SCRIPT will consider and decide on a final set of recommendations



# SCRIPT TIMELINE: AUGUST TO OCTOBER 2021



# DRAFT PROPOSALS

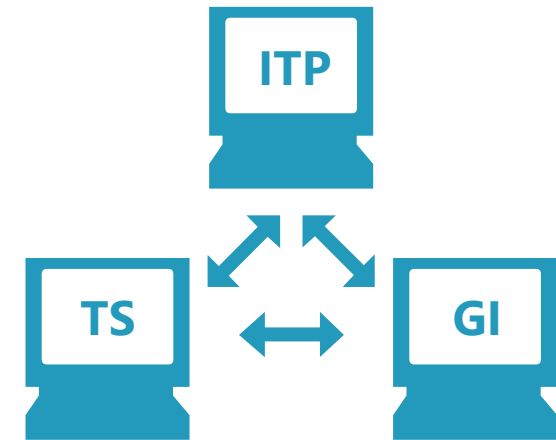
SPP SCRIPT

# CONSOLIDATION

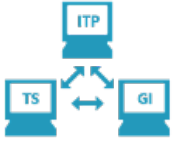
KELSEY ALLEN

# CONSOLIDATION: SCOPE OF WORK

- Appropriate consolidation of SPP's transmission planning and study processes, including ITP, GI, and Transmission Service studies to:
  - Develop more optimal solutions that meet a broader set of customer needs
  - Synergize analysis so that beneficiaries and cost-causers can be identified in a holistic, uniform fashion
  - Improve planning efficiency, effectiveness and timeliness
  - Reduce the number of model sets needed
  - Reduce reliance on customer-requested, queue-driven studies

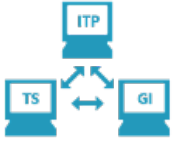






# DRAFT CONSOLIDATION RECOMMENDATIONS

RECOMMENDATION	GO-DO / GO-STUDY	OVERVIEW
<b>C1. Common base model set</b>	Go Do	Reduce model sets by creating a single common base model set to meet regional planning needs required by SPP Tariff and NERC reliability standards; combine model benchmarking efforts
<b>C2. High priority study planning assessment</b>	Go Do	Modify the high priority study planning assessment requirements to provide additional scope flexibility and be performed on an “as needed” basis
<b>C3. Engineering data collection and correlation improvements</b>	Go Do	Expand current model data systems used for collection and review and develop automation and an intermediary database with interfaces to existing tools used in regional planning assessments to better correlate input data, processes and study outcomes: <ul style="list-style-type: none"> <li>• <i>C3.1 Model data collection and review</i></li> <li>• <i>C3.2 Engineering Engine</i></li> </ul>
<b>C4. Implement a consolidated planning process</b>	Go Do	Develop a consolidated planning process by evaluating consolidation planning process options and phased in approach of existing planning processes

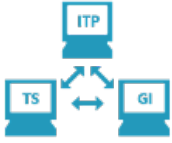


## C1. COMMON BASE MODEL SET

**Recommendation:** SPP should annually develop one common set of models to meet all regional transmission planning needs. Model development and benchmarking should be consolidated to meet those needs as required by SPP’s tariff and NERC reliability standards with minimum unique model inputs between requirements.

**Action:** Reduce the total number of models built for SPP planning processes. Maintain a high level of accuracy, purpose, and development coordination, while reducing assessments to a “minimum requirements” approach.

**Impacts and intersections:** Meet the MDAG and ITP base reliability model needs under one model series. Meet NERC TPL and MOD planning standards such as TPL-001, MOD-030, and MOD-032, and combine ITP and NERC MOD-033 model benchmarking processes as much as possible.



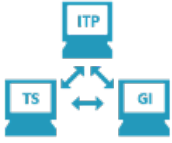
## C2. HIGH PRIORITY STUDY PLANNING ASSESSMENT

**Recommendation:** SPP should modify current tariff requirements so that high priority studies have scoping flexibility and are funded on an as-needed basis, with direction to perform those studies to be determined at the discretion of the SPP Board.

**Action:** modify the high priority study planning assessment. The change should modify the current Tariff requirements to:

- Create flexibility for each study scope's development to allow analysis to align with the specific needs of each requested high priority study and
- Allow the high-priority study to be performed at the discretion of the SPP Board, as needed.

**Impacts and intersections:** Flexibility to develop more targeted scopes of work and reduced tariff administration requirements under Attachment O for underutilized assessments.

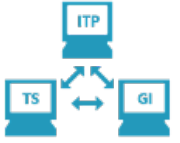


## C3.1 MODEL DATA COLLECTION AND REVIEW

**Recommendation:** SPP should expand its Engineering Data Submission Tool (EDST) system used for collection, correlation and review of reliability and economic model data from stakeholders and staff.

**Action:** Expand the EDST system, incorporating the review of economic modeling data and enhance the correlation between reliability and economic data sets, including generator and service data used by multiple planning processes.

**Impacts and intersections:** Intersects with C1, C3, S1 and S2. Could result in more consistent data collection and validation, and simplified collection and review processes.

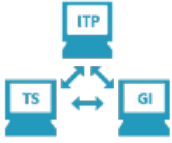


## C3.2 ENGINEERING ENGINE

**Recommendation:** SPP should develop automation and an intermediary database with interfaces to existing tools used in regional planning assessments that better correlate input data, processes and study outcomes.

**Action:** SPP staff should develop an Engineering Engine database and supporting automation for planning assessments, including a consolidated planning assessment.

**Impacts and intersections:** Automation leads to improved data accuracy and correlation. Reduced staff and stakeholder time for review and data mapping. Increased dependency on automation development, maintenance, and quality control.



## C4. IMPLEMENT CONSOLIDATED PLANNING PROCESS

**Recommendation:** SPP staff and working groups should evaluate, approve, and build out design and implementation level processes for one of the two consolidated planning assessment options for customer optionality, cost-certainty of assigned upgrades, and regulatory planning compliance.

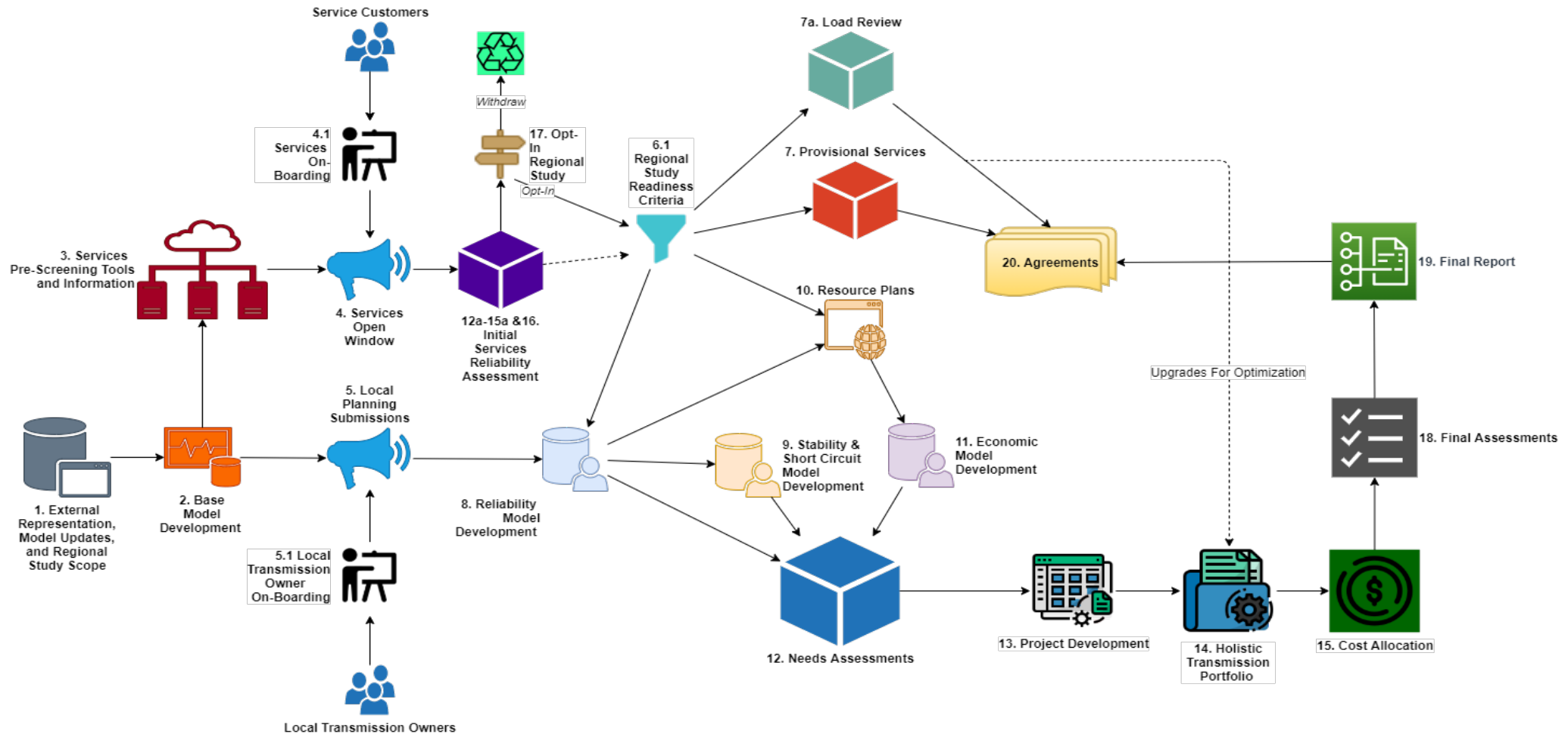
**Action:** Two phase process:

- C4.2. Phase 1: Consolidate ITP, NERC TPL, transmission service, GI, and local planned transmission system changes processes.
- C4.3. Phase 2: Consolidate AQ, sponsored upgrade and retirement processes

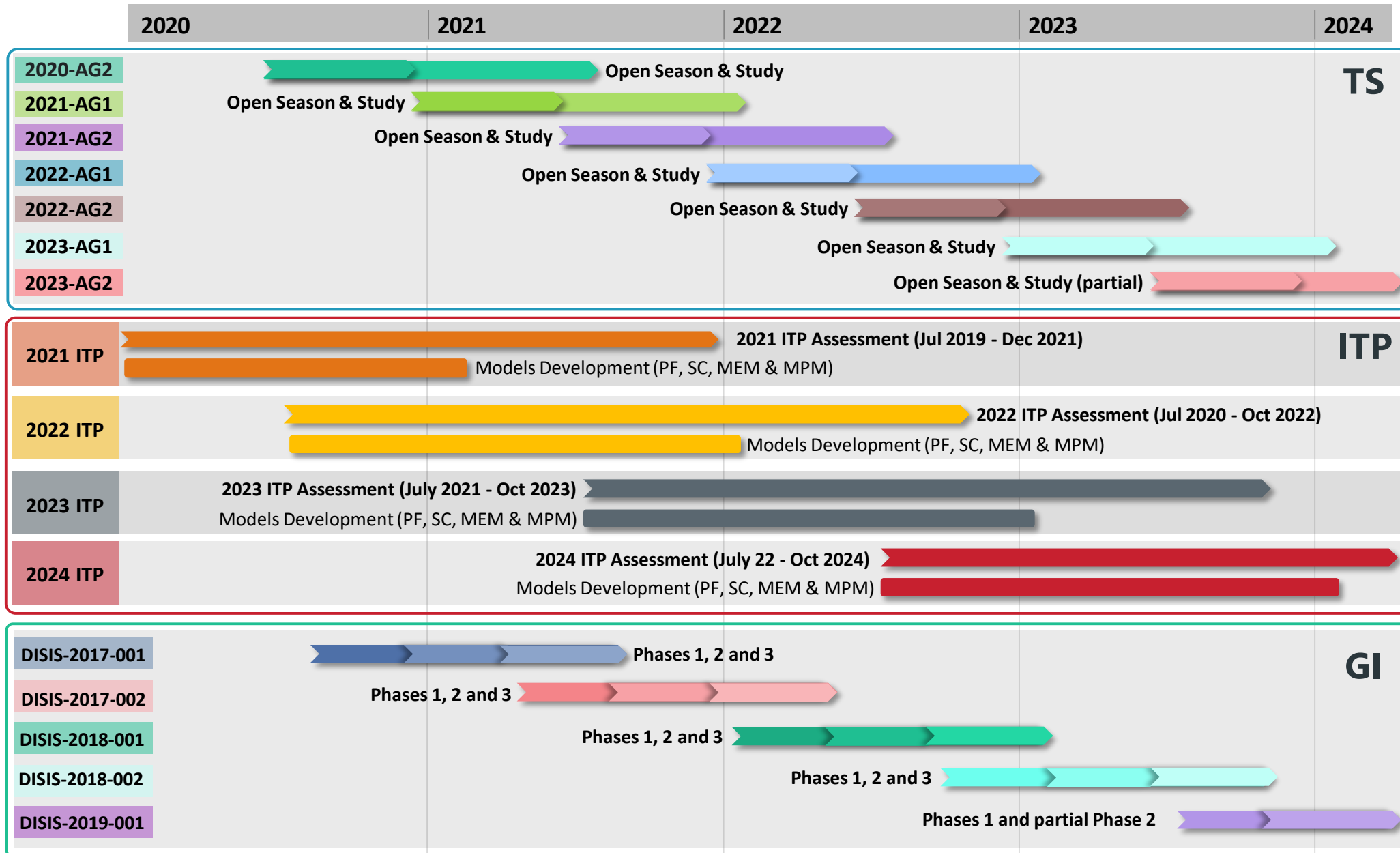
**Impacts and intersections:** Results in the most optimal transmission analysis and portfolio results across the significant SPP planning Tariff processes through a better understanding of aggregate potential system impacts, and opportunity for more equitable cost sharing between SPP stakeholders



# POTENTIAL PROCESS: "CUSTOMER OPT-IN" OPTION

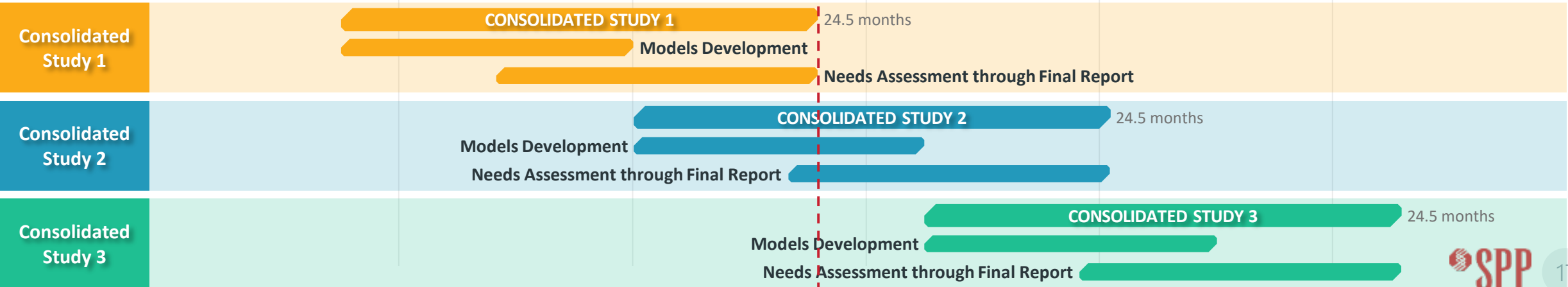
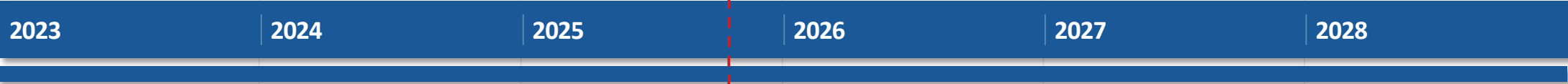
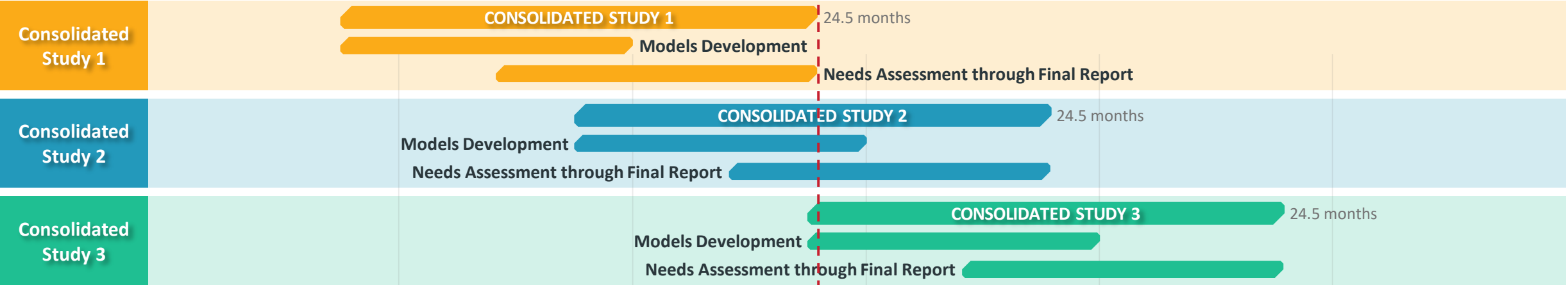
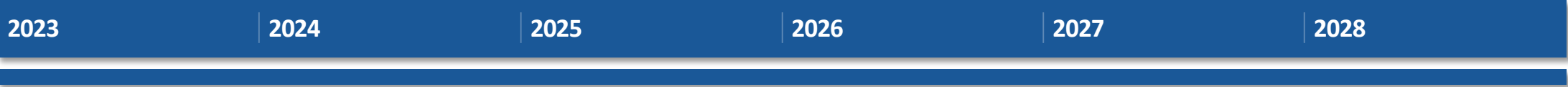


# High-Level Study Timelines for **Current** TS, ITP and GI Studies





# CONSOLIDATED ASSESSMENT TIMELINES



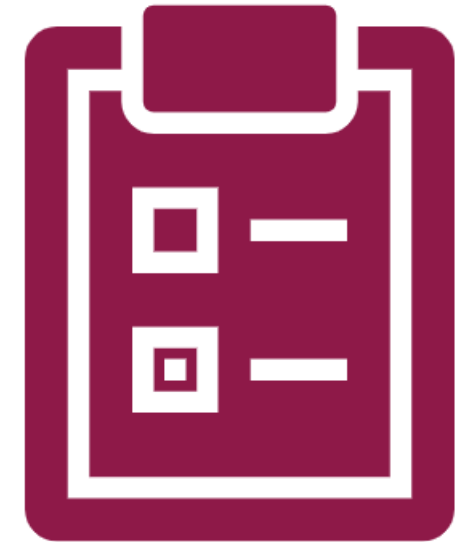
# SERVICES

STEVE PURDY

## SERVICES: SCOPE OF WORK

The SCRIPT will develop policy recommendations that:

- Improve responsiveness and outcome certainty of studies needed to provide customer-requested service
- Reduce dependence on queue-driven studies, with consideration given to development of proactive processes that identify and make transparent underutilized transmission capacity





# DRAFT SERVICES RECOMMENDATIONS

RECOMMENDATION	GO-DO / GO-STUDY	OVERVIEW
<b>S1. Consolidated GI and TS processes</b>	Go Do (5) and Go Study (2)	identify and implement process solutions that ensure timely and efficient service for GI request, long-term transmission service (TS) request, and delivery point addition (AQ) request processes under a consolidated planning process.
<b>S2. Administrative and technical procedures</b>	Go Do (2) and Go Study (1)	Continue to work with stakeholders to identify and implement improvements to administrative and technical study procedures, including models, scenarios and assumptions that will improve efficiency while maintaining reliability.
<b>S3. Number of TS products</b>	Go Do	Eliminate the long-term service request and delivery point transfer processes under Attachment AR.
<b>S4. GI Backlog mitigation</b>	Go Do	Develop and implement Revision Requests based on the GI backlog mitigation strategies approved by SCRIPT, MOPC and Board of Directors



# S1. CONSOLIDATED GI AND TS PROCESSES

**Recommendation:** SPP staff should work with the appropriate functional working groups to identify and implement process solutions that ensure timely and efficient service for GI request, long-term transmission service (TS) request, and delivery point addition (AQ) request processes under a consolidated planning process.

## Sub-recommendations:

- **S1.1.** Create new services pre-screening tools and info. requirements
- **S1.2.** Implement new readiness criteria for GI requests
- **S1.3.** Modify GI decision point criteria
- **S1.4.** Use deliverability areas for GI requests per NEDTF recommendations

- **S1.5.** Implement policies for TS requests in consolidated planning
- **S1.6.** Implement policies for AQ requests in consolidated planning
- **S1.7.** Implement policies for provisional services in consolidated planning

### S1.1. Create new services pre-screening tools and information requirements

- Develop a data tool about the capacity of the existing transmission system to host new load and generation interconnections
- Continue development of an AQ screening request process, consistent with HITT T3, to evaluate and grant service requests
- Collaborate with the TWG and AQITF and with feedback from the GIUF and TSUF.

### S1.2. Implement new readiness criteria for GI requests

Interconnection requests entering the consolidated process must meet all the current requirements to enter the DISIS process including Financial Security Deposits *PLUS* meet requirements to demonstrate readiness

- **See next slide**

### S1.3. Modify GI decision point criteria

SPP staff should work with stakeholder groups to:

- Develop an appropriate NUCT limit for DP1
- Develop a “buy through” process for the NUCT limit
- Implement the NUCT construct for GI requests in the consolidated study.

### S1.4. Use deliverability areas for GI requests as recommended by the NEDTF

GI incorporation into a consolidated process will be done consistent with the HITT T1 recommendations, including evaluating the deliverability of CRIS resources to loads within the same deliverability areas.

SPP staff should continue to work with the Deliverability Steering Committee to develop and implement HITT T1 recommendations.



## S1.2. CONSOLIDATION “CUSTOMER OPT-IN OPTION” READINESS CRITERIA

### Readiness Criteria Required **at Application**

1. Final Layout diagram certified by a PE AND final EMT model for IBRs

2. One item from this list

a. Power Purchase Agreement

b. Financing Commitment

c. Resource Plan Selection

d. Transmission Service Reservation

e. Authorization to Construct

f. Additional Security \$4,000/MW

### Readiness Criteria Required **at first Decision Point**

1. One item from this list

a. Site Control for 50% of gen tie line OR \$80,000/mi

b. Effective Interim GIA

## S1.5. Implement policies for long-term TS requests in consolidated planning

- GI readiness criteria will not apply to TS requests.
- Readiness criteria for network service requests will consist of the current requirements in the tariff.
- No TS readiness criteria for point-to-point requests.
- TS customers will provide tariff-required study parameters
- TS requests that do not meet the customers' parameters will be terminated. Requests meeting parameters will be accepted and proceed to a TSA.

## S1.6. Implement policies for AQ requests in consolidated planning

- Customers will continue to provide the information currently required in the SPP tariff.
- AQ requests can be made at any time.
- AQ requests that pass screening will be granted service without the need to go through the consolidated process.
- Upgrade costs for AQ requests are fully base plan funded, so no cost parameters or cost tolerance is required.
- *Additional requirements detailed in SCRIPT report.*

## S1.7. Implement policies for provisional services (PS) in consolidated planning

- Proposed new expedited path within the consolidated study process that would allow customers to obtain interim service while the consolidated study is completed.
- An option for GI, TS and AQ requests.
- Will be performed in parallel with consolidated study.
- PS requests may be aggregated together
- PS customer may choose to accept or decline
- *Additional details in SCRIPT report.*



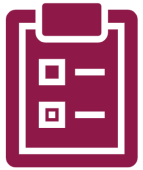


## S2. ADMINISTRATIVE AND TECHNICAL PROCEDURES

**Recommendation:** SPP should continue to work with stakeholder groups to identify and implement improvements to administrative and technical study procedures, including models, scenarios and assumptions that will improve efficiency while maintaining reliability.

**Action:** SPP staff should work with:

- TWG to identify and implement improvements to technical study procedures, including models, scenarios and assumptions that will improve efficiency while maintaining reliability.
- TWG and GIUF to develop a standardized Engineering Procurement and Construction agreement to enhance the ability of customers to move forward with interconnection facility construction prior to completion of studies, pursuant to GIP Section 9.
- TWG, TSUF and GIUF to determine if there is sufficient interest to develop a new process for evaluation of new generator interconnections that will exclusively serve load located at the same point of interconnection and will not inject power into the SPP system.



## S3. NUMBER OF TS PRODUCTS

**Recommendation:** SPP should eliminate the long-term service request (LTSR) and delivery point transfer (DPT) processes under Attachment AR:

- Established to provide customers with a “feasibility study” for transmission service, but there have been no LTSR requests since 2016
- DPT process was established in response to the lengthy delays in the ATSS process. Those delays no longer exist and we no longer need to maintain a separate process.

**Action:** SPP’s staff should submit a tariff revision to FERC eliminating the LTSR and DPT processes under Attachment AR.

**Impact:** Reduced compliance risk to SPP. Elimination of these two processes provides simplification of SPP planning processes through reduced processes for Staff to keep up with and manage, and reduced governing language.



## S4. GI BACKLOG MITIGATION

**Recommendation:** SPP staff should develop and implement Revision Requests based on the GI backlog mitigation strategies already approved by SCRIPT, MOPC and SPP's Board of Directors.

**Action:** SPP staff should develop associated Revision Requests based on the approved strategies in coordination with the appropriate working groups to facilitate clearing the GI backlog. After revision requests are approved by FERC, SPP staff should implement the strategies. In the event C4 does not go forward, SPP staff should review the GI procedures and make a recommendation to the Board as to whether the procedures should be modified after the GI backlog is cleared and if so, what modifications should be made.

**Impact:** Elimination of the backlog of requests in the GI queue.

# OPTIMIZATION

ANTOINE LUCAS

## **OPTIMIZATION: SCOPE OF WORK**

The SCRIPT will develop policy recommendations that result in optimization of the existing and planned transmission network to most cost effectively meet future needs while providing maximum value to the region





# DRAFT OPTIMIZATION RECOMMENDATIONS

RECOMMENDATION	GO-DO / GO-STUDY	OVERVIEW
<b>O1. ATC calculation and use</b>	Go Do	SPP should develop a process to implement proactive ATC calculations for delivery points, and include aggregate transmission service and generator interconnection studies.
<b>O2. Non-transmission expansion solutions</b>	Go Do	<i>(Revised) SPP should develop policies that appropriately expand the definition of "transmission," to improve the use of existing assets, and modify planning processes as appropriate to allow use of non-transmission expansion solutions.</i>
<b>O3. Project value drivers</b>	Go Do	SPP should develop and prioritize a set of standard value drivers for the consolidated process and use this additional information to analyze and compare projects.
<b>O4. Holistic needs and solutions assessments</b>	Go Study	SPP should develop a process to conduct holistic planning needs and solutions assessments under the consolidated planning process.
<b>O5. Aging infrastructure</b>	Go Do	SPP should develop policies that add aging infrastructure to the ITP as a formal need to be considered and addressed under the consolidated planning process.
<b>O6. SPP and MISO</b>	Go Study	SPP should better align the timing of SPP's and Midcontinent Independent System Operator's (MISO) planning and generator interconnection processes.



## 01. ATC CALCULATION AND USE

**Recommendation:** SPP should develop a process to implement proactive ATC calculations for delivery points, and include aggregate transmission service and generator interconnection studies.

**Action:** SPP staff should work with the TWG, GIUF and TSUF to develop a process to implement proactive ATC calculations for delivery points and expand and modify this approach as necessary for aggregate transmission service and generator interconnection studies.

**Impacts and intersections:** Can reduce Tx additions costs, restudies and withdrawals. Need to ensure customers can't use this information to block others at highly valued points of interconnection.



## 02. NON-TRANSMISSION EXPANSION SOLUTIONS

**Recommendation:** SPP should develop policies that appropriately expand the definition of “transmission,” to improve the use of existing assets, and modify planning processes as appropriate to allow use of non-transmission expansion solutions.

**Action:** SPP staff should work with the ESRSC, TWG, and CAWG to develop policies that appropriately expand the definition of what constitutes “transmission,” increase the usage or enhance the functionality of existing assets, and modify planning processes to allow more comprehensive solutions that consider newly defined “transmission” assets and non-transmission expansion.

**Impacts and intersections:** Improved expansion planning and increased utilization of existing assets. Needs to be assessed for intersection with NERC standards and procedures.





## 03. PROJECT VALUE DRIVERS

**Recommendation:** SPP should develop and prioritize a set of standard value drivers for the consolidated process and use this additional information to analyze and compare projects.

**Action:** SPP staff should work with the TWG, ESWG, and SPC to develop and prioritize standardized value drivers for projects in the consolidated process and use this additional information to inform analysis and comparison of competing projects.

**Impacts and intersections:** Increased buy-in to portfolio value and optimal project selection. Will need to consider long-term needs and challenges with obtaining right-of-way.



## 04. HOLISTIC NEEDS AND SOLUTIONS ASSESSMENTS

**Recommendation:** SPP should develop a process to conduct holistic planning needs and solutions assessments under the consolidated planning process.

**Actions:** SPP staff should work with the TWG and ESWG to develop a process to conduct holistic planning needs and solutions assessments under a consolidated planning process that assesses and identifies solutions for market restraints, public policy needs, and reliability issues for network load service and GI requests.

Once a portfolio is established an impact analysis of GI requests and applicable Transmission Service requests can be run and made available for use as a component of cost sharing considerations.

**Impacts and intersections:** relies on Consolidation.



## 05. AGING INFRASTRUCTURE

**Recommendation:** SPP should develop policies that add aging infrastructure to the ITP as a formal need to be considered and addressed under the consolidated planning process.

**Action:** SPP staff should work with the TWG, ESWG, and CAWG to develop policies that add aging infrastructure to the ITP as a formal need to be considered and addressed.

**Impacts and intersections:** Optimizes the physical operation of the transmission system. Reduces redundant transmission investment.



## 06. SPP AND MISO

**Recommendation:** SPP should better align the timing of SPP's and Midcontinent Independent System Operator's (MISO) planning and generator interconnection processes.

**Action:** SPP staff should work with MISO staff to identify opportunities to align the timing of SPP's and MISO's planning and generator interconnection processes. SPP staff should coordinate with Seams Advisory Group and consult with the OMS and RSC.

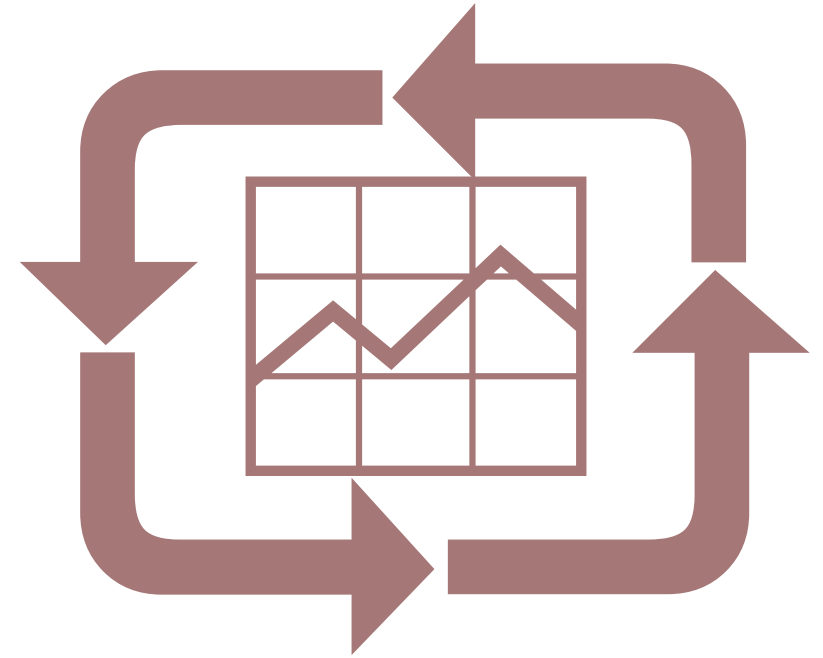
**Impacts and intersections:** This recommendation intersects with SPP's current joint study process with MISO. Expected outcomes include improved visibility and transparency of value, more equitable cost allocation outcomes and greater certainty for customers.

# DECISION QUALITY

CASEY CATHEY

## DECISION QUALITY (DQ): SCOPE OF WORK

The SCRIPT will develop policy recommendations that result in utilization of processes and information needed to ensure decisions being made about future investment in transmission infrastructure are made with a high degree of confidence and quality.





## WHAT IS DECISION QUALITY?

- **All high-quality decisions meet six requirements:**
  - Setting the right frame
  - Considering alternatives
  - Gathering meaningful data
  - Clarifying values and tradeoffs
  - Using logical reasoning
  - Committing to action



# DRAFT DQ RECOMMENDATIONS

RECOMMENDATION	GO-DO / GO-STUDY	OVERVIEW
<b>DQ1. Modeling data</b>	Go Study	Assess ways to centralize and improve timeliness and accuracy of model building and assumptions through new restrictions, tools and processes.
<b>DQ2. Cost estimation process</b>	Go Study	Conduct a review of ways to improve the quality of the cost estimation process.
<b>DQ3. ITP futures</b>	Go Study	Identify the most impactful variables in the futures development process and prioritize a data driven approach to determining those input.
<b>DQ4. Solution development and submissions</b>	Go Study	Ensure planning processes are considering multiple high-quality alternatives to address transmission needs across all of SPP's planning processes.
<b>DQ5. Sensitivity analysis and benefit metrics</b>	Go Study	Assess and implement changes to when and how sensitivity assumptions and benefit metrics are set and used during the planning process.
<b>DQ6. Consolidated planning processes and schedule</b>	Go Study	Ensure the Decision Quality Framework is built into the study process and schedule structure of the new consolidated planning process.
<b>DQ7. Presentation of study results</b>	Go Do	Improve transparency, coordination and decision making at the end of the planning process.
<b>DQ8. Objective analysis</b>	Go Do	Implement more objective analysis into making key decisions that benefit the SPP region and balance individual decision bias and policies.





## DQ1. MODELING DATA

**Recommendation:** SPP should assess ways to centralize and improve timeliness and accuracy of model building and assumptions through new restrictions, tools and processes.

**Action:** The MDAG and TWG should assess restrictions on accommodation of untimely or late data submissions and review model build schedules. They should also review the potential to have a more centralized modeling process, and to use new tools to timeliness and accuracy of models.

**Impacts and intersections:** Dependent on C1. Could result in more timely model completion, on-time planning study completion, and increased modeling accuracy resulting in a higher degree of planning study quality and confidence in transmission investment.



## DQ2. COST ESTIMATION PROCESS

**Recommendation:** SPP should conduct a review of ways to improve the quality of the cost estimation process..

**Action:** The Project Cost Working Group (PCWG) should consider zonal level cost estimates, applying SPP's minimum design standards to the SPP region (not just competitive projects), providing more detailed information on project lead times, and allowing more time for the development of Transmission Owner level cost estimations.

### Impacts and intersections:

- This could increase accuracy of SPP's cost estimates resulting in a higher degree of confidence in transmission investment
- It could also create more process efficiency resulting in time savings of Transmission Owners and SPP staff
- DQ2 does not need to be delayed or impacted by other SCRIPT recommendations.



## DQ3. ITP FUTURES

**Recommendation:** SPP should identify the most impactful variables in the futures development process and prioritize a data driven approach to determining those inputs.

**Action:** The ESWG and TWG should assess and identify impactful variables in the futures development process and prioritize a data driven approach to determining those inputs.

- This process should be done periodically to ensure any changes in the most impactful variables is captured.
- This assessment should also not be limited to the assumptions within each future and could also be applied to the siting and resource planning milestones within futures development.
- Staff should pursue greater coordination between SPP staff, ESWG, MOPC and the SPC throughout the decision making process.

**Impacts:** Increased accuracy of SPP's planning futures resulting in a higher degree of confidence in transmission investment, Increased standardization of planning study scopes related to futures development that creates time savings and lesson schedule constraints.



## **DQ4. SOLUTION DEVELOPMENT AND SUBMISSIONS**

**Recommendation:** SPP should ensure planning processes are considering multiple high-quality alternatives to address transmission needs across all of SPP's planning processes.

**Action:** SPP Staff should review the outcome of the SCRIPT consolidation process to ensure the process includes the ability to develop and evaluate multiple high-quality alternatives to address transmission needs.

### **Impacts:**

- Increased efficiency of transmission investment
- More holistic approach to project selection with multiple project drivers.
- Added "competition" within SPP's planning process helps ensure a high level of decision quality related to transmission investment.



## **DQ5. SENSITIVITY ANALYSIS AND BENEFIT METRICS**

**Recommendation:** SPP should assess and implement changes to when and how sensitivity assumptions and benefit metrics are set and used during the planning process.

### **Actions:**

- TWG should assess and recommend changes to when and how sensitivity assumptions are developed and applied.
- ESWG should assess and recommend changes to how benefit metrics are set and used during the planning process.

**Impacts and intersections:** This will need to be addressed after the consolidation process is finalized. DQ5 could result in:

- Increased impact of sensitivity analysis
- Increased impact of benefit metrics
- Greater quality and a higher degree of confidence in transmission investment decisions.



## **DQ6. CONSOLIDATED PLANNING PROCESS & SCHEDULE**

**Recommendation:** SPP should ensure the DQ Framework is built into the study process and schedule structure of the new consolidated process.

**Action:** SPP staff should ensure the DQ framework is used for decisions involving transmission planning investment that are of a magnitude that justifies utilizing the full DQ process:

- Appropriate Frame
- Creative Alternatives
- Relevant and Reliable Information
- Clear Values and Tradeoffs
- Sound Reasoning
- Commitment to Action

**Impacts:** Greater stakeholder confidence and ease of decision making related to SPP's transmission investments.



## DQ7. PRESENTATION OF STUDY RESULTS

**Recommendation:** Improve transparency, coordination and decision making at the end of the transmission planning process.

**Action:** SPP staff should work with the TWG, ESWG and MOPC to improve the current structure and practices related to gaining approval of SPP's various transmission planning studies. An improved process should:

- Corroborate the shared responsibility of transmission planning investment decision making with the stakeholders on SPP's planning working groups (TWG and ESWG) and their MOPC representation.
- Increase the level of transparency of SPP's study processes and reduce the debate around transmission investment decisions to the decision makers (MOPC and BOD).
- Refocus SPP's Transmission Planning Summits, which are a requirement of the tariff, to be a forum for discussion on key decision points throughout SPP's planning processes.

**Impacts:** Increased transparency of SPP's study processes to aid decision makers and greater stakeholder confidence and ease of decision making related to SPP's transmission investments.



## DQ8. OBJECTIVE ANALYSIS

**Recommendation:** Implement more objective analysis into making key decisions that benefit the SPP region and balance individual decision bias and policies.

**Action:** SPP staff should work with the BOD to implement more objective analysis into making key decisions. Any process changes should:

- Ensure stakeholder debate adds decision quality
- Ensure debate is appropriate given the decision at hand.
- Create a more active role for staff to develop and propose policy recommendations.

**Impacts and intersections:** Greater stakeholder confidence and ease of decision making related to SPP's transmission investments.

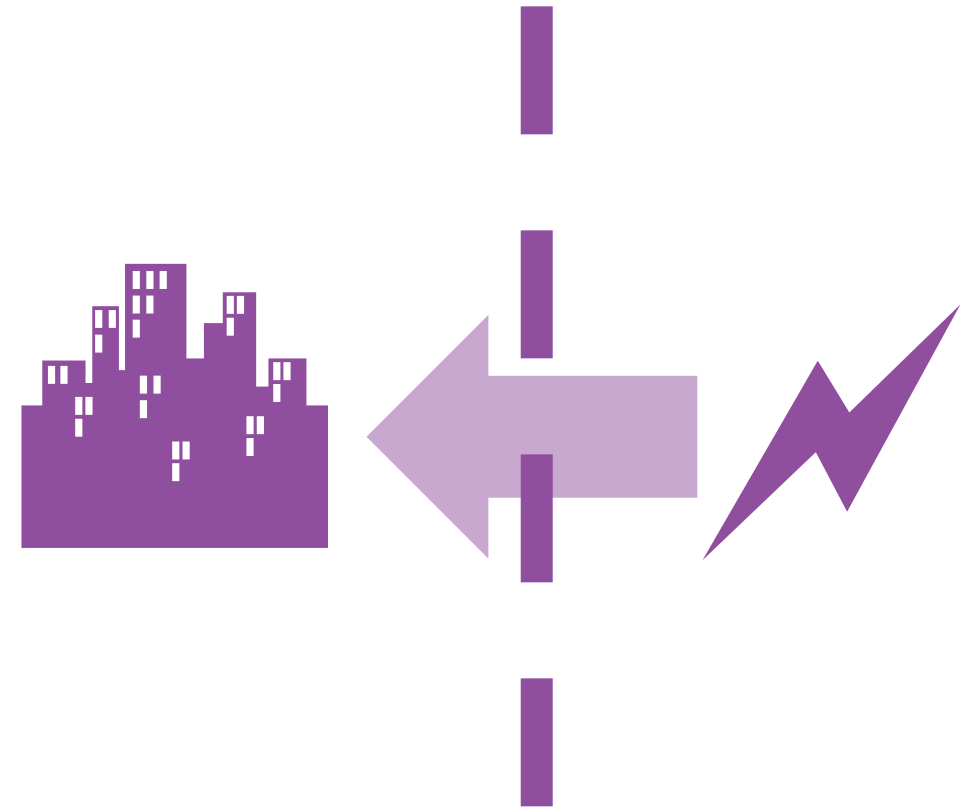


# TRANSFERS

CLINT SAVOY

## TRANSFERS: SCOPE OF WORK

The SCRIPT will develop policy recommendations that result in the development of transmission capacity needed to facilitate generation transfers that will provide future benefits to the SPP region





# DRAFT TRANSFERS RECOMMENDATIONS

RECOMMENDATION	GO-DO / GO-STUDY	OVERVIEW
<b>T1. Rate pancaking</b>	Go Study	Evaluate the options for resolving rate pancaking issues, including new classes of transmission service rates and modification of through and out rate
<b>T2. Persistent operational issues</b>	Go Do	Improve practices related to persistent operational issues in regional and interregional planning processes.
<b>T3. Differences in regional reliability planning processes</b>	Go Study	Identify differences in reliability planning processes across regions, provide a report to MOPC and receive stakeholder direction on any steps to address differences
<b>T4. Regional cost allocation of seams projects</b>	Go Do	Develop a tariff mechanism for regional cost allocation of seams projects.
<b>T5. Hurdle rates</b>	Go Study	Assess benefits of projects under consideration without hurdle rates
<b>T6. Benefit metrics and cost allocation</b>	Go Study	Evaluate enhancements to benefit metrics and cost allocation for projects that increase interregional transfer capability
<b>T7. Interregional governance</b>	Go Do	Advocate for an interregional consortium of RTOs and/or customers and market participants to support consistent rules across different regions.
<b>T8. Interregional market design</b>	Go Study	Evaluate the benefits of improved interregional market design, including mechanisms for energy portability and co-optimized markets.

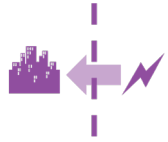


## T1. RATE PANCAKING

**Recommendation:** SPP should evaluate the options for resolving rate pancaking issues, including new classes of transmission service rates and modification of through and out rates.

**Action:** SPP Staff, in coordination with the efforts of the SPP RSC/OMS Seams Liaison Committee, should evaluate the options for, and impacts of, resolving rate pancaking issues, including but not limited to:

- Developing a new class of transmission service rates that could apply to transmission service associated with facilities that are used to facilitate interregional transfers
- Performing an analysis on discounting or removing through and out rates, and
- Performing an analysis of the costs and benefits of different options for discounting through and out transmission service.
- Consider resolving transmission service along the seams/unreserved use issue(s)



## T2. PERSISTENT OPERATIONAL ISSUES

**Recommendation:** SPP should improve practices related to persistent operational issues in regional and interregional planning processes.

**Action:** SPP Staff, working through the ESWG and the TWG and in consultation with the SAG, should improve practices related to persistent operational issues in the regional and interregional planning processes.

**Challenges:** One roadblock to including persistent operational needs in planning processes is software limitations for assessing the benefits of a potential solution for a need that does not inherently exist in the applicable planning models without scenario-specific model adjustments.



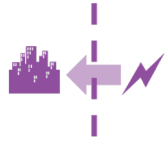
## T3. DIFFERENCES IN REGIONAL RELIABILITY PLANNING

**Recommendation:** SPP should identify differences in reliability planning processes across regions, provide a report to MOPC and receive stakeholder direction on any steps to address differences.

**Action:** SPP staff should examine the extent of the differences in reliability planning processes across the SPP and MISO regions and report to the MOPC (or SCRIPT if this will be a longer-term effort) for stakeholder direction on next steps to address, or not address, the differences.

SPP staff should also examine the extent of the differences in other planning processes, such as generator interconnection, affected system studies, and transmission service, across the SPP and MISO regions.

**Impact:** Address incongruent interregional planning process for reliability needs. Better alignment of timing of SPP and MISO assessments.

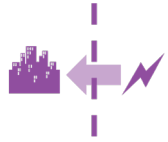


## T4. REGIONAL COST ALLOCATION OF SEAMS PROJECTS

**Recommendation:** SPP should develop a tariff mechanism for regional cost allocation of seams projects.

**Action:** SPP staff should pursue a Revision Request that would result in refiling the proposed revisions of the SPP Tariff, in whole or in part, including the regional cost allocation principles described in the Seams Projects Policy Paper that was approved in 2017.

**Impacts and intersections:** T4 could meet FERC's "robust justification" standard for why the new category of project would be necessary. Expanding the ability to regionally cost allocate shared projects that may not qualify under the SPP Tariff as Interregional Projects could result in an increase to interregional transfers.



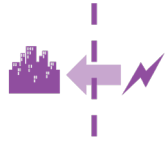
## T5. HURDLE RATES

**Recommendation:** SPP should assess benefits of projects under consideration without hurdle rates.

**Action:** SPP Staff, working through the ESWG, should consider and evaluate a revision to the ITP Manual to include an assessment of benefits of individual projects that may increase interregional transfers with \$0 hurdle rates.

**Impacts:** Co-optimizing generation dispatch across multiple regions would likely result in an increase in interregional transfers.





## T6. BENEFIT METRICS AND COST ALLOCATION

**Recommendation:** SPP should evaluate enhancements to benefit metrics and cost allocation for projects that increase interregional transfer capability.

**Action:** The ESWG, TWG, and CAWG should evaluate enhancements to economic or reliability benefit metrics as well as evaluate regional and interregional cost allocation mechanisms for projects that increase interregional transfer capability.

**Impacts:** The benefits of increasing the capacity to transfer energy between SPP and neighboring regions include the improved ability to assist and receive assistance during energy emergencies and other extreme events.

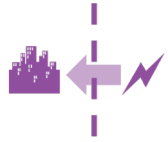


## T7. INTERREGIONAL GOVERNANCE

**Recommendation:** SPP should advocate for an interregional consortium of RTOs and/or customers and market participants to support consistent rules across different regions.

**Action:** SPP staff should cooperate with stakeholders, including but not limited to the SPP RSC/OMS Seams Liaison Committee, MWG, SAG, ESWG, and TWG to advocate for a collaboration forum for stakeholders of multiple RTOs (i.e. MISO-PJM Joint and Common Market group) that can support the alignment and development of consistent rules across different regions.

**Impacts:** Advocating for consistent rules across regions would improve coordination, timelines and results.



## T8. INTERREGIONAL MARKET DESIGN

**Recommendation:** SPP should evaluate the benefits of improved interregional market design, including mechanisms for energy portability and co-optimized markets.

**Action:** The MWG, with the support of SPP staff, should evaluate the benefits of improved interregional market design, including but not limited to:

- Developing a mechanism to allow for energy portability
- Developing a single, co-optimized SPP and MISO day-ahead market
- Developing a Co-optimized SPP and neighboring market real-time market dispatch

**Impacts and challenges:** A market design that allowed a resource to be offered into multiple markets simultaneously could increase interregional transfers. Significant concerns about the responsibility of Balancing Authorities to balance generation and load would need to be addressed.

# **COST SHARING**

CHARLES LOCKE

## **COST-SHARING: SCOPE OF WORK**

The SCRIPT will develop policy recommendations that result in improved cost sharing among users of the transmission system that appropriately recognizes causers and beneficiaries of transmission investment decisions.





# DRAFT COST SHARING RECOMMENDATIONS

RECOMMENDATION	GO-DO / GO-STUDY	OVERVIEW
<b>CS1. Upgrades that meet multiple needs</b>	Go Do	Apply highway-byway methodology to projects approved under a consolidated process for the portion of cost that receives Base Plan funding. If an approved project provides transmission and/or GI service, the cost may be fully or partially assigned to the customer.
<b>CS2. Balanced portfolio</b>	Go Do	Develop a simplified methodology for the Balanced Portfolio cost allocation for future upgrades, or eliminate this function if the methodology is not simplified.
<b>CS3. Load ratio share</b>	Go Study	Evaluate the use of prior year annual energy in combination with average coincident peak demand to determine composite load ratio shares for calculating network transmission service charges for future upgrades.
<b>CS4. Repair and replacement</b>	Go Do	To support SCRIPT Recommendation O5, clarify cost allocation and rate treatment for the repair and/or replacement of transmission facilities resulting from that planning process.
<b>CS5. Upgrades that require joint funding</b>	Go Do	Establish a mechanism to fund an upgrade jointly through rates and direct assignment charges in situations where neither the benefit-cost assessment under ITP nor direct assignment is sufficient to fund the project alone.



## **CS1. UPGRADES THAT MEET MULTIPLE NEEDS**

**Recommendation:** For projects approved for construction under a consolidated planning process, SPP should apply the highway-byway methodology to the portion of cost that receives Base Plan funding. If an approved project provides transmission and/or GI service, the cost may be fully or partially assigned to the customer(s) under methodologies adapted to a consolidated planning framework.

**Action:** The RSC and CAWG, in collaboration with the TWG and ESWG, should develop a policy for determining the portions of cost to be included in Schedule 11 rates and to be directly assigned for future projects approved through consolidated planning.

**Impacts and intersections:** This recommendation intersects with recommendations C4 and CS5.



## CS2. BALANCED PORTFOLIO

**Recommendation:** SPP should develop a simplified methodology for the Balanced Portfolio cost allocation for future upgrades, or eliminate this function if the methodology is not simplified.

**Action:** The RSC and CAWG, in collaboration with the TWG and ESWG, should evaluate whether to recommend a simplified methodology for Balanced Portfolio cost allocation for future upgrades, or alternatively, whether to recommend removal of the Balanced Portfolio provisions from the Tariff.

**Impact:** Would either simplify the Balanced Portfolio process or simplify planning and cost sharing by eliminating an unused process.





## **CS3. LOAD RATIO SHARE WITH ANNUAL ENERGY**

**Recommendation:** SPP should evaluate the use of prior year annual energy in combination with average coincident peak demand to determine composite load ratio shares for calculating network transmission service charges for future upgrades.

**Action:** The RSC and CAWG, in collaboration with the RTWG, SPP staff, and SUG, should evaluate the utilization of prior year annual MWh together with average coincident peak demand to determine composite load ratio shares for calculating network service charges for future upgrades. If energy is used in billing network service, then energy also should be evaluated as a billing determinant for the corresponding component of PTP service rates. Settlement system impacts also need to be assessed in support of this evaluation.

**Impacts:** Settlements and load reporting.



## **CS4. REPAIR AND REPLACEMENT**

**Recommendation:** In support of the SCRIPT's initiative to address aging infrastructure in the ITP, SPP should clarify cost allocation and rate treatment for the repair and/or replacement of transmission facilities resulting from that planning process.

**Action:** SPP staff should collaborate with the RSC, CAWG, and TWG to clarify cost allocation and rate treatment for the repair and/or replacement of transmission facilities in conjunction with the SCRIPT's Aging Infrastructure initiative.

**Impacts and Intersections:** Aging Infrastructure (O5).



## CS5. UPGRADES THAT REQUIRE JOINT FUNDING

**Recommendation:** SPP should establish a mechanism to fund an upgrade jointly through rates and direct assignment charges in situations where neither the benefit-cost assessment under the ITP nor direct assignment is sufficient to fund the project alone.

**Action:** The RSC and CAWG, in collaboration with the TWG and ESWG, should develop a policy for determining the portions of cost to be included in Schedule 11 rates and to be directly assigned for future projects when neither the benefit-cost assessment under ITP nor direct assignment is sufficient to fund the project alone.

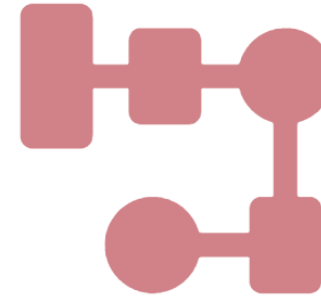
**Impacts and Intersections:** The consolidated planning process would need to be structured to address such situations. The focus would be on projects that have a net benefit in aggregate but currently lack a funding mechanism.

# CONCLUSION

SUMMARY AND OVERVIEW

# SUMMARY

- **Process**
  - 16 diverse stakeholders on roster
  - 60+ stakeholder meetings over 11 months
  - One recommendation already endorsed by MOPC & approved by BOD
- **Recommendations:**
  - 35 recommendations
  - 15 sub-recommendations
  - 6 topic areas
- **Final Product**
  - Draft 115 page report on process & recommendations
  - Internal coordination with PMO and Roadmap staff to quickly begin implementation upon approval



# POTENTIAL VALUE: IMPLEMENTATION VS. SAVINGS

- **Current planning process:**  
\$28.5M each year
- **Estimated cost to implement:**  
\$7.5M (over 24-36 months)
- **New consolidated process:**  
\$25.5M (yrs. 1-3) to \$24.7M (yr. 4+)
- **Compounded savings:**  
Up to \$8.9M by 2030



- Current day: ~132,321 hours annually
- Consolidated recommendations: ~118,722 hours annually (~13,599 net savings annually)
- Transition costs may be lowered by reduction in production scopes during transition period

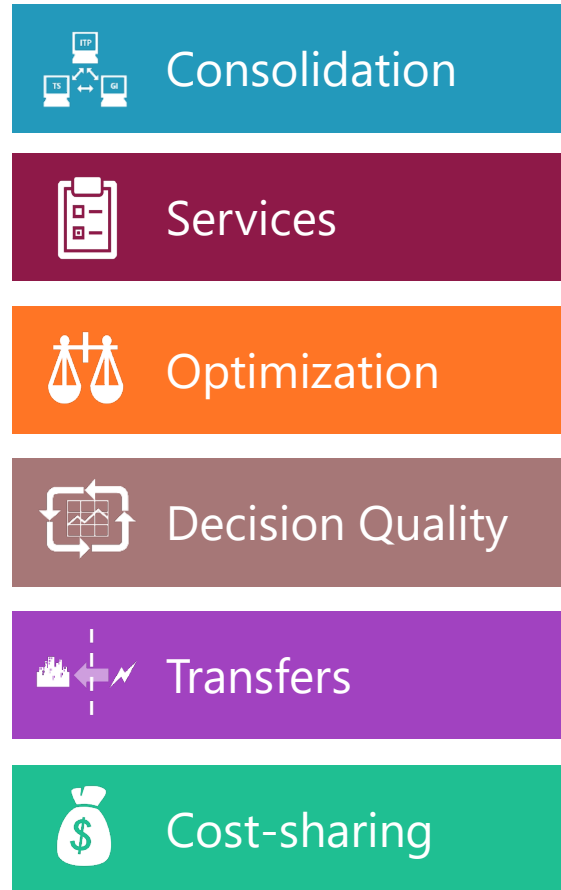
# OTHER POTENTIAL VALUE

- More optimal transmission
- More equitable cost sharing
- More timely processes
- Increased certainty
- Increased value of transmission



# NEXT STEPS

- Staff are working to reorganize and categorize:
  - Core to implementing a consolidated planning process
  - Potential enhancements to a consolidated process
  - Improvements to planning independent from consolidation
- The SCRIPT meets Sept. 24 for a potential final discussion and approval of the report of recommendations
- Recommendations to be shared with SPC, RSC, CAWG
- Recommendations presented for endorsement by MOPC at Oct. 11 meeting.
- Recommendations considered for approval by Board at Oct. 26 meeting
- Staff and organizational groups assess, developing and implementing policies to carry out approved recommendations (2022-2024).

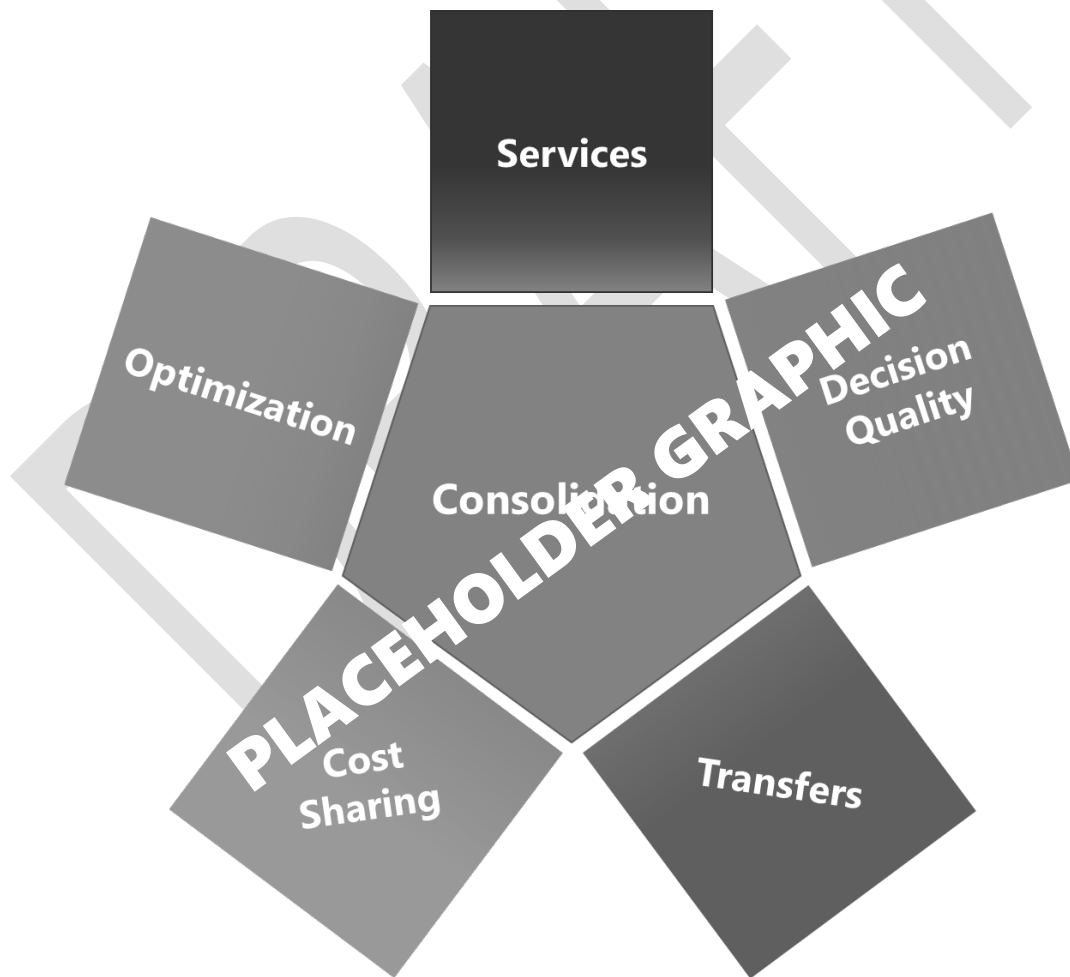




**QUESTIONS?**

# **STRATEGIC & CREATIVE RE- ENGINEERING OF INTEGRATED PLANNING TEAM (SCRIPT)**

REPORT AND RECOMMENDATIONS



# REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
7/22/2021	Russell Carey	<p>Combined six separate rough draft sub-team reports into one comprehensive SCRIPT report of recommendations</p> <p>Created new executive summary, background, SCRIPT process and team documentation, list of meetings, summary descriptions of overall and individual recommendations.</p>	
8/1/2021	SPP Staff sub-team leads	Revisions to Executive Summary and recommendations	
8/2/2021	Russell Carey	<p>Combined edits from sub-team staff leads. Updated version of GI Backlog Plan. Added items to Action Plan. Prepared for upload to SCRIPT Reference Documents on spp.org.</p>	
8/6/2021 – 8/20/2021	SPP Staff sub-team leads	Revisions to report based on feedback from August SCRIPT meetings.	
8/26/2021	Russell Carey	Combined edits from sub-team staff leads.	

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# EXECUTIVE SUMMARY

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Growing concerns about the amount, nature, and funding of continued transmission investment amid rapid industry changes create a need to more strategically consider broader changes to SPP's transmission planning process. The Strategic and Creative Re-engineering of Integrated Planning Team (SCRIPT) was created to develop a set of high-level recommendations to provide solutions for the SPP region.

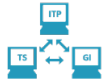
Upon its creation by SPP's board of directors, the SCRIPT was tasked with proposing policies to consolidate planning processes, improve services processes, optimize SPP's transmission network, improve decision quality, facilitate beneficial interregional energy transfers and improve cost-sharing.

Successful development and implementation of recommendations from this team are expected to lower costs and create more equitable cost sharing, increase economic benefits, open new markets for energy, create more timely process and enhance reliability and grid resiliency.

Beginning in October 2020, a group of 16 representatives from SPP's Strategic Planning Committee, Members Committee, Markets and Operations Policy Committee, Regional State Committee (RSC) and the board of directors learned about SPP's current planning and cost allocation processes and began to generate ideas for strategic and creative improvements.

Initial recommendations for six topic areas were drafted in January 2021, and the SCRIPT reviewed, provided feedback and improved recommendations in the subsequent months. The SCRIPT held 61 meetings with staff facilitating a stakeholder-driven process that resulted in **35** recommendations and **13 sub-recommendations** to strategically and creatively re-engineer SPP's planning systems and processes

Those recommendations are summarized on the following pages by category.



## CONSOLIDATION RECOMMENDATIONS

### C1. Common base model set

SPP should annually develop one common set of models to meet all regional transmission planning needs. Model development and benchmarking should be consolidated to meet those needs as required by SPP's tariff and NERC reliability standards with minimum unique model inputs between requirements.

### C2. High priority study planning assessment

SPP should modify current tariff requirements so that high priority studies are funded on an as-needed basis, with direction to perform those studies to be determined at the discretion of the SPP Board.

### C3. Engineering data collection, review and correlation

SPP should develop automation and an intermediary database with interfaces to existing tools used in regional planning assessments that better correlate input data, processes and study outcomes.

- **C3.1 Model data collection and review**
- **C3.2 Engineering Engine**

### C4. Implement a consolidated planning process

SPP staff and working groups should evaluate, approve, and build out design and implementation level processes for one of the two consolidation planning assessment options for customer optionality, cost-certainty of assigned upgrades, and regulatory planning compliance.

- **C4.1. Select Consolidation planning process option**
- **C4.2. Consolidation implementation: Phase 1**
- **C4.3. Consolidation implementation: Phase 2**



## SERVICES RECOMMENDATIONS

### S1. Consolidated GI and TS processes

SPP staff should work with the appropriate functional working groups to identify and implement process solutions that ensure timely and efficient service for GI request, long-term transmission service (TS) request, and delivery point addition (AQ) request processes under a consolidated planning process.

- **S1.1. Create new services pre-screening tools and information requirements**
- **S1.2. Implement new readiness criteria for GI requests**
- **S1.3. Modify GI decision point criteria**
- **S1.4. Use deliverability areas for GI requests as recommended by the NEDTF**
- **S1.5. Implement policies for long-term transmission service (TS) requests in consolidated planning**
- **S1.6. Implement policies for delivery point addition (Attachment AQ) requests in consolidated planning**
- **S1.7. Implement policies for provisional services in consolidated planning**

### S2. General improvements to administrative and technical procedures

SPP should continue to work with stakeholder groups to identify and implement improvements to administrative and technical study procedures, including models, scenarios and assumptions that will improve efficiency while maintaining reliability.

### S3. Number of TS products

SPP should eliminate the long-term service request and delivery point transfer processes under Attachment AR.

### S4. GI backlog mitigation

SPP staff should develop and implement Revision Requests based on the GI backlog mitigation strategies already approved by SCRIPT, MOPC and SPP's board of directors.



## OPTIMIZATION RECOMMENDATIONS

### O1. ATC calculation and use

SPP should develop a process to implement proactive ATC calculations for delivery points, and include aggregate transmission service and generator interconnection studies.

### O2. Non-transmission expansion solutions

SPP should develop policies that appropriately expand the definition of “transmission,” improve the use of existing assets, and modify planning processes as appropriate to allow use of non-transmission expansion solutions.

### O3. Project value drivers

SPP should develop and prioritize a set of standard value drivers for the consolidated process and use this additional information to analyze and compare projects.

### O4. Holistic needs and solutions assessments

SPP should develop a process to conduct holistic planning needs and solutions assessments under the consolidated planning process.

### O5. Aging infrastructure

SPP should develop policies that add aging infrastructure to the ITP as a formal need to be considered and addressed under the consolidated planning process.

### O6. SPP and MISO

SPP should better align the timing of SPP’s and Midcontinent Independent System Operator’s (MISO) planning and generator interconnection processes.



## DECISION QUALITY RECOMMENDATIONS

### DQ1. Modeling data

SPP should assess ways to centralize and improve timeliness and accuracy of model building and assumptions through new restrictions, tools and processes.

### DQ2. Cost estimation process

SPP should conduct a review of ways to improve the quality of the cost estimation process.

### DQ3. ITP futures

SPP should identify the most impactful variables in the futures development process and prioritize a data driven approach to determining those input.

### DQ4. Solution development and submissions

SPP should assess and potentially implement a process to use ITP reliability metrics and project selection software across other planning process.

### DQ5. Sensitivity analysis and benefit metrics

SPP should assess and implement changes to when and how sensitivity assumptions and benefit metrics are set and used during the planning process.

### DQ6. Consolidated planning process and schedule

SPP should ensure the Decision Quality Framework is built into the study process and schedule structure of the new consolidated planning process.

### DQ7. Presentation of study results

SPP should improve transparency, coordination and decision making at the end of the transmission planning process.

### DQ8. Objective analysis

SPP should implement more objective analysis into making key decisions that benefit the SPP region and balance individual decision bias and policies.



## TRANSFERS RECOMMENDATIONS

### T1. Rate pancaking

SPP should evaluate the options for resolving rate pancaking issues, including new classes of transmission service rates and modification of through and out rates.

### T2. Persistent operational issues

SPP should improve practices related to persistent operational issues in regional and interregional planning processes.

### T3. Differences in regional reliability planning processes

SPP should identify differences in reliability planning processes across regions, provide a report to MOPC and receive stakeholder direction on any steps to address differences.

### T4. Regional cost allocation of seams projects

SPP should develop a tariff mechanism for regional cost allocation of seams projects that do not otherwise qualify as Interregional Projects under the Tariff.

### T5. Hurdle rates

SPP should assess benefits of projects under consideration without hurdle rates.

### T6. Congestion hedges

SPP should resolve issues related to insufficient congestion hedges for interregional transfers.

### T7. Benefit metrics and cost allocation

SPP should evaluate enhancements to benefit metrics and cost allocation for projects that increase interregional transfer capability.

### T8. Interregional governance

SPP should advocate for an interregional consortium of RTOs and/or customers and market participants to support consistent rules across different regions.

### T9. Interregional market design

SPP should evaluate the benefits of improved interregional market design, including mechanisms for energy portability and co-optimized markets.



## COST SHARING RECOMMENDATIONS

### CS1. Cost sharing for an upgrade that meets multiple needs

For projects approved for construction under a consolidated planning process, SPP should apply the highway-byway methodology to the portion of cost that receives Base Plan funding. If an approved project provides transmission and/or generator interconnection service, the cost may be fully or partially assigned to the customer(s) under methodologies adapted to a consolidated planning framework.

### CS2. Balanced Portfolio Simplification or Elimination

SPP should develop a simplified methodology for the Balanced Portfolio cost allocation for future upgrades, or eliminate this function if the methodology is not simplified.

### CS3. Load ratio share with annual energy

SPP should evaluate the use of prior year annual energy in combination with average coincident peak demand to determine composite load ratio shares for calculating network transmission service charges for future upgrades.

### CS4. Repair and Replacement of facilities

In support of the initiative to address aging infrastructure in Integrated Transmission Planning (SCRIPT O5), SPP should clarify cost allocation and rate treatment for the repair and/or replacement of transmission facilities resulting from that planning process.

### CS5. Cost sharing for an upgrade that requires joint funding

SPP should establish a mechanism to fund an upgrade jointly through rates and direct assignment charges in situations where neither the benefit-cost assessment under Integrated Transmission Planning nor direct assignment is sufficient to fund the project alone.

# SCRIPT CREATION, PROCESS & GOALS

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Growing concerns about the amount, nature, and funding of continued transmission investment amid rapid industry changes create a need to more strategically consider broader changes to SPP's transmission planning process. The SCRIPT was created to develop a set of high-level recommendations to provide solutions for the SPP region.

At the Sept. 22, 2021, special board of directors and Members Committee meeting, the SCRIPT was tasked to develop policy recommendations that result in appropriate consolidation of SPP's transmission planning and study processes, improved responsiveness and outcome certainty of studies, reduced dependence on queue-driven studies, improved decision quality, optimization of the existing and planned transmission network, increased transmission capacity for interregional energy transfers and improved cost sharing.

The SCRIPT consisted of 16 members, including 11 members from the Strategic Planning Committee and Members Committee. The group also had representation from the Regional State Committee and the board of directors.

The SCRIPT began meeting in October 2020 and completed its work in September 2021.

All meetings of the SCRIPT were open. Advanced notice of meetings were provided via the SPP website and an email exploder. As the SCRIPT gathered information and developed its recommendations, stakeholders were occasionally called upon to provide information and make presentations of differing perspectives on challenges and possible solutions.

The SCRIPT regularly reported updates on its progress and status to the RSC, MOPC, SPC and the SPP Board and Members Committee.

At the end of its process, the SCRIPT created a report summarizing its holistic evaluation of all transmission planning and applicable cost allocation processes used in SPP, consideration and evaluation of options to strategically re-engineer those processes, and high-level recommendations to the Board and Members Committee for improvements.

## SCRIPT TEAM

The SCRIPT's roster consisted of 16 members, including representation from the Strategic Planning Committee (SPC) and Members Committee (MC), the chair of the Markets and Operations Policy Committee (MOPC), the Regional State Committee (RSC) and the board of directors. The group had both transmission using members (TUM) and transmission owning members (TOM). Over the course of its work, the team members of the SCRIPT were:

Name	Company	Org. Group	Sector	Type
Mark Crisson (Chair)	N/A	BOD	-	-
Bronwen Bastone (Vice Chair)	N/A	BOD	-	-
Andrew French	KCC	RSC	-	-
Bill Grant	Xcel	SPC	IOU	TOM
Brett Leopold	ITC Great Plains	MC	ITC	TUM
Chris Jones	CUS	MC	Municipal	TUM
David Mindham	EDP Renewables	SPC	IPP	TUM
Denise Buffington	Evergy	MOPC	IOU	TOM
Dennis Florom	LES	SPC	Municipal	TUM
Dennis Grennan	NPRB	RSC	N/A	N/A
Greg McAuley	OG&E	MC	IOU	TOM
Holly Carias	NextEra	MC	IPP	TUM
Joe Lang	OPPD	MC	State Agency	TOM
Mike Wise	Golden Spread	SPC/MC	Cooperative	TUM
Richard Ross	AEP	SPC	IOU	TOM
Steve Gaw	APA	MC	AP/PI	TUM
Tom Christenson	Basin	SPC/MC	Cooperative	TOM
Usha Turner	OG&E	MC	IOU	TOM

The following SPP staff served as SPP's internal steering committee for the SCRIPT, leading research, education, process facilitation and recommendation development:

Name	Company	Lead Role
Lanny Nickell (SCRIPT Staff Secretary)	SPP	Overall Process
Antoine Lucas	SPP	Optimization
Casey Cathey	SPP	Decision Quality
Charles Locke	SPP	Cost Sharing
Clint Savoy	SPP	Interregional Transfers
David Kelley	SPP	GI Recommendations
Kelsey Allen	SPP	Consolidation
Steve Purdy	SPP	Services
Tessie Kentner	SPP	Secondary Support
Russell Carey	SPP	Facilitation & Materials

# BACKGROUND

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## **SPP Transmission Planning and Cost Allocation processes**

Attachment O of the SPP Open Access Transmission Tariff (OATT) describes SPP's transmission expansion planning processes. Seven different planning processes are described in Attachment O; the performance of any of these could result in transmission upgrades being directed for construction by SPP and included in the SPP Transmission Expansion Plan (STEP). These include:

1. Integrated Transmission Plan (ITP)
2. High Priority
3. Balanced Portfolio
4. Transmission Service, including the Aggregate Transmission Service Study (ATSS) process and the Delivery Point assessment processes
5. Generator Interconnection (GI)
6. Sponsored Upgrade
7. Interregional planning

The ITP, Transmission Service, and GI planning processes are SPP's most used processes. The ITP process was established with the formation of the Synergistic Planning Project Team (SPPT) and, with the development of the highway/byway cost allocation mechanism, has proven to be very effective in the construction of a significant portion of over \$10 billion of regional transmission approved for construction in SPP. The ITP process was improved in 2017 based on recommendations from the Transmission Planning Improvement Task Force (TPITF).

The Transmission Service and GI processes have also undergone various incremental improvements over the last several years. Additionally, these three processes were the subject of certain proposed improvements being included in the Holistic Integrated Tariff Team (HITT) recommendations. The HITT recommendations related to these planning processes are as follows:

- T1: NRIS/ERIS Reforming, Differentiation and Valuing
- T2: Establish Uniform Schedule 9 Local Planning Criteria
- T3: Implement New Load Addition Modifications
- T4: Study Three-Phase GI Process Effectiveness
- T5: Evaluate Benefit-to-Cost Ratio for Economic Projects

The conclusion of recommendations T1, T2, and T3 are expected to provide specific needed improvements to parts of the ITP, Transmission Service and GI planning processes; however, additional improvements are needed.

The seven planning processes use various structures to determine cost allocation for resulting upgrades. Costs of regional upgrades derived from the ITP and High Priority study processes are shared among transmission zones using SPP's highway/byway structure. Upgrades needed to accommodate GI and sponsored upgrade requests are directly assigned to applicable requesting customers. Costs for upgrades needed to accommodate transmission service requests are shared using the highway/byway cost allocation, up to the customers' safe harbor limit, with any costs in excess of that limit being directly assigned. SPP's negotiated cost share of any interregional upgrade is generally allocated using the highway/byway structure.

### **Transmission Planning Challenges**

Since the implementation of the SPP's recommendation to create the ITP and highway/byway cost allocation processes, SPP and the electric industry have experienced significant changes that impact transmission planning assumptions and how stakeholders view the long-term implications and funding obligations associated with transmission investment decisions.

SPP successfully launched the Integrated Marketplace in 2014, which included the consolidation of balancing authorities, implemented a congestion hedging market, implemented a day-ahead energy market and enabled realization of broad regional benefits when transmission capacity is available. This event vastly changed how generation is dispatched, how the system is used, and how market participants consider the value of transmission expansion and transmission rights.

SPP has seen a tremendous amount of growth in wind development over the last decade or more. In 2010, nearly 5 GW of wind generating facilities were operating in the region with over 27 GW expected to be operating in the region by the end of 2020. Wind will soon supply more of SPP's annual electricity needs, possibly beginning as early as 2020, than any other type of generating resource. SPP continues to have the potential for more wind development with over 75 GW in the current GI queue. SPP has also seen a growing interest in development of other generating technologies. SPP now has nearly 38 GW of solar and nearly 9 GW of battery storage being studied in its current GI queue.

The growth in additional generation SPP has already experienced and likely will continue to see creates financial pressures on older conventional generators that will likely result in an increasing number of retirements in the future. It remains to be seen if and when this additional development begins to displace existing, older renewable resources in the region. Without the addition of transmission capacity needed to export surplus generation, SPP is facing a likely future where it will increasingly have more energy than it needs to supply its own Balancing Authority needs.

The current unprecedented amount of generation capacity requested in the queue and SPP's very iterative process has significantly delayed queue processing. It now takes SPP about four years from the time requests are submitted to finalize analyses needed to develop necessary Generator Interconnection Agreements (GIA). The time-consuming and iterative nature of the current process hinders timely development of viable projects and uncertainty about the long-term viability of those projects. SPP has begun using its newly developed three-phase GI study



process designed to reduce queue turnaround time but it's too early to tell just how effective this new process will be. It's likely other revolutionary measures will be needed to significantly improve queue processing.

Stakeholder debate about assumptions used and future scenarios studied in the ITP process has become increasingly divisive. A growing number of members are increasingly concerned about costs allocated to them as a result of regional transmission investment decisions made that are assumed to provide net benefits based on 40-year cost/benefit analyses, particularly when limited scenarios with a degree of inherent uncertainty are studied. Members have been reluctant to support seemingly realistic future projections about additional generation development due to the perceived risks associated with making 40-year commitment decisions and expectations that those decisions are likely to benefit others, such as GI customers, who are not asked to bear the associated transmission costs or associated risks.

The fact that several studies are performed in parallel, using different cost allocation structures, complicates decision making processes and contributes to stakeholder angst. Some processes, such as the GI and transmission service processes, seek to find lowest-cost solutions while others seek highest net benefits. Occasionally, parallel studies identify similar solutions needed to accomplish the unique goals of each respective study. SPP's policy has been to determine funding responsibilities for needed upgrades based on the study process that completes first.

For example, if a similar upgrade is being contemplated by both a GI study and an ITP study, but the GI study process finishes first, that upgrade is included in the applicable GIAs and costs assigned to those GI customers. The opposite can occur where upgrades approved first in the ITP are cost-allocated to the SPP transmission zones although generators being studied in the GI process are allowed to interconnect with no cost assignment for those enabling upgrades. These outcomes create "free-rider" and inequitable cost allocation concerns that hinder SPP's ability to properly plan for the best, most likely futures. Consequentially, construction of multiple, less-optimal transmission upgrades may also result due to the differing goals associated with the parallel study processes.

# SCRIPT RECOMMENDATIONS

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The SCRIPT was responsible for strategically developing proposals and recommendations for broad changes to SPP's transmission planning processes. These changes were intended to better meet customer needs while resolving growing stakeholder concerns about the amount, nature and funding of continued transmission investment amid rapid industry changes.

The SCRIPT process resulted in overarching policy recommendations for **Consolidation:** combining, modifying or eliminating transmission planning and study processes to:

- Develop more optimal solutions that meet a broader set of customer needs
- Synergize analysis so that beneficiaries and cost-causers can be identified in a holistic, uniform fashion
- Improve planning efficiency, effectiveness and timeliness
- Reduce the number of model sets needed
- Reduce reliance on customer-requested, queue-driven studies

The SCRIPT was also tasked with developing policy recommendations to improve:

- **Services:** Improved responsiveness, efficiency and cost certainty of studies needed to provide customer-requested service, and reduced dependence on queue-driven studies, with consideration given to development of proactive processes that identify and make transparent underutilized transmission capacity.
- **Decision Quality:** Utilization of processes and information needed to ensure decisions being made about future investment in transmission infrastructure are made with a high degree of confidence and quality.
- **Optimization:** Optimization of the existing and planned transmission network to most cost effectively meet future needs while providing maximum value to the region.
- **Transfers:** Facilitation of generation transfers in a way that will provide future net benefits to the SPP region.
- **Cost-sharing:** Improved cost sharing among users of the transmission system that appropriately recognizes causers and beneficiaries of transmission investment decisions.

The SCRIPT expects these recommendations will be assigned to SPP's committees and working groups for implementation. The SCRIPT has recommended an implementation action plan with timelines under the oversight by and coordination between **the Strategic Planning Committee and the Markets and Operations Policy Committee (MOPC).**



## CONSOLIDATION RECOMMENDATIONS

The SCRIPT was tasked with the identifying the appropriate consolidation, modification, or removal of SPP's current transmission planning and study processes to:

- Develop more optimal solutions that meet a broader set of customer needs
- Synergize analysis so that beneficiaries and cost-causers can be identified in a holistic, uniform fashion
- Improve planning efficiency, effectiveness and timeliness
- Reduce the number of model sets needed
- Reduce reliance on customer-requested, queue-driven studies

### Challenges

SCRIPT participants and SPP staff identified the following challenges with the consolidation of transmission planning processes:

- Continuing to meet regulatory and NERC compliance obligations associated with
  - Timelines
  - Models
  - Assessment requirements/results
  - Queue prioritization
- Providing results to customers in a timely fashion
- Achieving an equitable cost-sharing approach that is acceptable by FERC
- Transitioning from the existing study processes to a new study process
- Maintaining a queue-driven process as required by FERC Order 2003

### Analysis

The SCRIPT participants and SPP staff identified the following critical issues with the current transmission planning processes to address through consolidation:

- SPP's multiple, disparately-performed studies yield sub-optimal transmission plans
- Current deficiencies in collective quantification of cost-causers and beneficiaries across planning processes create "free-rider" situations
- Processes used to identify upgrades needed to provide generator interconnection and transmission service only rely on reliability analysis that does not consider congestion costs and other economic impacts

The SCRIPT focused on reviewing current planning requirements and developing policy changes for a consolidated regional planning process including service driven processes. The SCRIPT Consolidation Sub-Team developed various policy recommendations to provide more optimal solutions, synergize analyses, and increase planning efficiencies in all SPP transmission planning processes. The four main areas of focus to achieve these goals were:

- Annual data submission
- Consolidated study approach for regional and service customers
- Portfolio optimization
- Cost sharing between load-serving and service customers

**Recommendations**

The SCRIPT identified the following four recommendations to improve SPP’s transmission services by consolidated planning processes to more efficiently and effectively create transmission expansion solutions:

Recommendation	Go-Do/ Go-Study	Overview
C1 Common base model set	Go-Do	Reduce model sets by creating a single common base model set and combing model benchmarking efforts
C2 High Priority study planning assessment	Go-Do	Modify the high priority study planning assessment to provide additional scope flexibility and on an “as needed” basis
C3 Engineering data collection, review and correlation improvements	Go-Do	Expand current model data systems used for collection and review and develop automation and an intermediary database with interfaces to existing tools used in regional planning assessments that better correlate input data, processes and study outcomes
C4 Implement a consolidated planning process	Go-Study & Go-Do	Develop a consolidated planning process by evaluating consolidation planning process options and phased in approach of existing planning processes

**Benefits:**

- Lower dependency on individual queued processes
- Improved planning efficiencies, effectiveness and timeliness
- Increased optimization of transmission analysis and portfolio
- Improved answers for service customers and potential cost-sharing with load customers
- Reduced need for SPP to manage multiple parallel service queues and assessments

## C1. Common base model set

***Recommendation:*** SPP should annually develop one common set of models to meet all regional transmission planning needs. Model development and benchmarking should be consolidated to meet those needs as required by SPP's tariff and NERC reliability standards with minimum unique model inputs between requirements.

### **Overview:**

The total number of models developed by SPP staff and stakeholders is significant compared to similar processes in other organizations. Two areas of improvement for model reduction include base annual planning and service studies models. Historically, the total number of base planning models built annually has ranged between 70 to 90 models. GI study models have averaged around 400 models for the evaluation of new GI cluster impacts. NERC TPL requirements are generally silent on non-firm delivery of resources and only require that short-circuit issues and cascading outages are addressed

Other working groups, including the GIUF, MDAG, TWG and ESWG, have taken action or continue to evaluate ways to reduce the number of seasonal models, consolidate cluster groups and the number of base planning models.

### **Action:** Implement

The SCRIPT recommends SPP reduce the total number of models built for SPP planning processes while maintaining a high level of accuracy, purpose and development coordination. In addition to the current model reduction efforts underway, the models utilized to provide certain services should be reviewed to reduce assessments to a minimum requirements approach further.

The proposal includes:

1. Meeting the MDAG and ITP base reliability model needs under one model series that are progressively built during a consolidation study. The base reliability models should include additional operational and market-based "real-world" generation output, transfer flow, and load assumptions beyond only firm service only commitments. The base reliability models should meet NERC TPL and MOD planning standards such as TPL-001, MOD-030 and MOD-032. The new base reliability models will be utilized for Eastern Interconnection Reliability Assessment Group Multi-Regional Model Development Working Group (ERAG MMWG) submission. The new base reliability models will be the starting base model assumptions utilized to build out customer service and transmission assessment scopes and requirements.
  - a. Discussion on MPM challenges/overhead (i.e. discuss alternative sensitivity model) as well as TPL requirements to model the as-expected system (regardless of firm/non-firm? TPL requires "as-expected" and "firm transmission," at odds; also shortfall approach discussion?)?

- b. The value of Market Powerflow Models (MPM) for use in the regional planning assessment should be evaluated and adjusted, as necessary.
  - i. Historically, full inclusion of the MPM set in the ITP assessment has produced little to no transmission system issues and resulting upgrades, largely due to the invalidation/re-classification language specified in ITP manual section 4.2 and future generation included to meet system expectations and reserve margin requirements.
  - ii. A subset of MPMs have been utilized for AC verification of economic analysis on the final recommended portfolio to provide information regarding voltage stability performance that aids in appropriate Notification to Construct recommendations.
2. Developing a more manageable data set for planning and operational asset translations, reliability, and economic model development translations for data. The model development data updates are optimized based on efficiency and the value provided, including rolling project life cycle reliability and economic database.
3. Combining ITP and NERC MOD-033 model benchmarking to the best extent possible.

#### **Assignments:**

Lead group: Transmission Working Group (TWG)  
 Secondary group: ESWG, MDAG, AQITF, TSUF and GIUF  
 Goal: Complete by Q4 2022

#### **Intersection with other processes or issues:**

- In 2021, the TWG approved a reduction in the number of GI impact study seasonal models that will significantly lower the total number of study models.
- In 2021, TWG, ESWG, and MDAG approved a base model recommendation which lowered the base planning models by 12.
- The SPP Generation Interconnection User Forum (GIUF) is evaluating the need to consolidate GI cluster groups which in return will reduce the number of models required by each impact study.
- Must meet Multiregional Modeling Working Group (MMWG) requirements for NERC MOD-032

#### **Potential impacts:**

- Reduced multiple model set and series maintenance amongst various processes
- Eliminate parallel model builds between MDAG and ITP base reliability powerflow and short circuit
- Provide model assumption consistency across all consolidated assessment results
- Remove significantly overlapping reliability model benchmarking

## C2. High priority study planning assessment

**Recommendation:** SPP should modify current tariff requirements so that high priority studies are funded on an as-needed basis, with direction to perform those studies to be determined at the discretion of the SPP Board.

### **Overview:**

The high priority study process allows for ad hoc planning assessments that follow the guidelines of Attachment O and the ITP regional study process, but with a targeted scope and a flexible schedule. The Tariff allows for funding of up to three high priority studies annually and requires an assessment of both reliability and economic transmission system issues. This planning process has been used twice since its development; the 2010 Priority Projects assessment and the 2014 High Priority Incremental Load Study.

Under the current process, the level of effort required to complete is less than a typical ITP regional study, but still requires significant time to adjust models, perform assessments and develop transmission plans. The ability to perform three high priority studies annually puts additional burden on staff and stakeholders, especially under the new regional planning process developed by the TPITF that has overlapping ITP assessment work.

While the current high priority study process is intended to allow for a more flexible scope, the requirement to perform both economic and reliability analysis puts additional restrictions on this flexibility that may not be required depending on the drivers and desired analysis for the study.

### **Action:** Implement

A consolidated planning process creates a new need for the high priority study process to perform a traditional regional planning study. The SCRIPT recommends SPP modify the high priority study planning assessment. The change should modify the Tariff requirements to:

- Create flexibility for each study scope's development to allow analysis to align with the specific needs of each requested high priority study
- Allow the high-priority study at the discretion of the SPP Board, as needed.

### **Assignments:**

Lead group:	TWG
Secondary group:	ESWG
Goal:	Complete by Q3 2022

**Potential impact:** Reduced tariff administration requirements under Attachment O for underutilized assessments

## C3. Engineering data collection, review and correlation

**Recommendation:** SPP should develop data collection, review, and correlation improvements including the build out of the data collection and review databases and Engineering Engine to increase data correlation for various planning model builds and processes.

### **Overview:**

Many tools used by SPP and stakeholders could be expanded to create more efficiency and data consistency. The EDST system is currently used for collection and review of reliability model data from SPP stakeholders and staff.

The current tools and datasets used in SPP's planning processes are disjointed across different planning assessments and have room for improvement within each process. Coordination of these data sets through additional tools would help to bring consistency, quality assurance and efficiency to the planning processes.

### C3.1. Model data collection and review

#### **Overview:**

The EDST data collection system could be expanded to incorporate the review of economic modeling data and provide an opportunity for enhanced correlation between reliability and economic data sets. These items could include generator and service data used by multiple planning processes that is currently collected and housed in different data formats.

#### **Action:** Implement

SPP should expand its EDST system used for collection and review of model data from SPP stakeholders and staff.

This expansion should incorporate the review of economic modeling data and enhance the correlation between reliability and economic data sets, including generator and service data used by multiple planning processes.

#### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG, ESWG, MDAG, AQITF, TSUF and GIUF
Goal:	Complete by Q4 2022

#### **Intersection with other processes or issues:**

- C1 - considerations of model development timing and needs for data collection deadlines
- C3.2 – impacts, and benefits of engineering engine data correlation



- S1 & S2 – Tariff service request data collection and modeling requirements

**Potential impacts:**

- Consistent data collection, data review validation improvements, and ability to automate data correlations
- Simplification in data collection and review processes
- Increase dependency on automation development, maintenance and quality control needs

### C3.2. Engineering Engine

**Overview:**

This recommendation is to develop a new database structure to reduce the use of spreadsheets during the model development and assessment phases and tie existing SPP systems together. One effort underway is developing an “Engineering Engine” better to correlate input data, system issues and solutions. Current SPP systems to communicate together include Engineering Data Submission Tool (EDST), and Transmission Reporting and Communication (TRAC), SMARTQ, and a new intermediary database for use in regional planning assessments.

**Action:**

SPP staff should continue to develop an Engineering Engine database and supporting automation for planning assessments. This effort could be expanded to incorporate additional planning assessment information considered in the consolidated planning assessment proposal.

**Assignments:**

Lead group:	SPP Staff
Secondary groups:	Change User Forum, MDAG, TWG, ESWG, GIUF, TSUF
Goal:	Design completion by Q2 2023 and Implementation by Q1 2025

**Intersection with other processes or issues:**

SPP System Planning, Engineering Support, and IT have established an internal task force to evaluate and recommend SPP automation improvements. This recommendation has been closely coordinated with the internal team for advice.

**Potential impacts:**

- Potential improvement in data accuracy by improving correlation through automation
- Ability to reduce staff and stakeholder data mapping or review time
- Increase dependency on automation development, maintenance and quality control needs

## C4. Implement a consolidated planning process

***Recommendation:** SPP staff and working groups should evaluate, approve, and build out design and implementation level processes for one of the two consolidated planning assessment options for customer optionality, cost-certainty of assigned upgrades, and regulatory planning compliance.*

### **Overview:**

SPP and SPP Stakeholders have an opportunity to leverage a new consolidated planning concept that would help facilitate optimal transmission solutions, more streamlined timelines, and reducing dependency for individual queued processes and administration.

SPP Tariff Attachment O governs the majority of the planning processes under SPP as the Transmission Provider and describes nine different planning processes that are performed as separate assessments with varying schedules and requirements. Assessments under Attachment AQ – the “Delivery Point Addition Process” – also produce proposed transmission facilities to facilitate the new, modified or abandoned load interconnections. These planning processes result in a comprehensive regional plan called the SPP Transmission Expansion Plan (STEP).

The current parallel assessment approach to the planning process produces transmission upgrades that may not be optimal when all system issues are considered. The assessments have different requirements and are complete at different times, but overall address transmission system needs that may require upgrades to the transmission system resulting in potentially lost opportunities for holistic optimization of the regional transmission system.

The SCRIPT recommends the development of a comprehensive, annual assessment capable of addressing reliability, regulatory compliance, economic, and public policy needs while facilitating and ensuring regional and local planning coordination and meeting the needs of new service requests. Additionally, the annual assessment will holistically address overlapping transmission needs with optimal solutions beneficial to the collective participants. Finally, the consolidated assessment provides a proactive and manageable position for SPP and its stakeholders to successfully facilitate potential changes introduced in the future regulatory rulemaking due to comments and determinations from FERC Docket No: RM21-17-000.<sup>1</sup>

### **C4.0. Initiate consolidated planning assessment oversight group**

***Recommendation:** An oversight group shall be developed to provide appropriate oversight on design and implementation of consolidated planning assessment.*

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<sup>1</sup> <https://www.ferc.gov/news-events/news/advance-notice-proposed-rulemaking-building-future-through-electric-regional>

## C4.1. Select Consolidation planning process option

### **Additional Information:**

A consolidated planning process needs to provide some level of optionality and cost-certainty of assigned upgrades to service customers to determine their requests' overall viability. This approach is different from the regional study process under the ITP and would require adjustment to allow for a certain level of assessment re-studies.

Current schedules, models, data requirements, and assessments should be modified as necessary to provide the most optimal results in the timeliest fashion. Several Integrated Transmission Plan (ITP) tasks and process can be leveraged and restructured to provide a consolidated, more efficient planning process.

The consolidated planning assessment should include:

- *Schedule/Timeline Requirements*
  - Be structured such that results and transmission plans are provided in a fashion similar to the current ITP assessment process (Flowchart Overall)
  - Allow for appropriate "on-ramp" and "off-ramp" considerations for schedule requirements outside of SPP control (e.g. NERC Compliance) (Flowchart Overall)
  - Be developed to limit the number of re-studies (due to customer withdrawal) within the full timeline of the assessment to one (Flowchart Block 17)
- *Services Tools and Fast-Track*
  - Provide tools and information for service customers to be able to pre-screen requests before submittal during the annual open window (Flowchart Block 3)
  - Implement a service customer readiness criteria in order to ensure a high degree of certainty and limit the number of customers withdrawing from the queue (Flowchart Block 6.1)
  - Continue to allow for "provisional service" such as Interim Generator Interconnection Agreements (Flowchart Block 7)
  - Allow for applicable data sharing for a higher level of customer viability and certainty needs (Overall)
- *Process Improvement and Efficiency*
  - Allow for model builds to be progressively built from finalized external modeling efforts and updated to meet NERC standards, including FAC-002, MOD-030, MOD-032, TPL-001, SPP regional planning and service customer needs (Flowchart Block 1->2)
  - Consider reducing planning assessment requirements to follow a "minimum requirements" approach to required models and assessments

- Incorporate model reduction efforts already completed (i.e. GI study model reduction), and discussed in recommendation C1 (Flowchart Block 2)
  - Evaluate removal of steady-state reliability analysis for energy-only service requests (i.e. GI ERIS)
- Implement a holistic approach to portfolio development to create a single annual transmission portfolio able to meet the needs of all customers involved (Flowchart Block 14)
- Implement a new cost-sharing methodology to allow for the sharing of transmission upgrades identified in the holistic transmission portfolio between service customers and regional load that appropriately considers cost-causers and beneficiaries (Flowchart Block 15), and evaluate service customer cost exposure limitations following services recommendations S1.2 and S1.3
- *Data Consistency*
  - Leverage development of adequate automation to create efficiencies in the collection of data, development of models, performing of assessments, review of results and cost-sharing analysis (Flowchart Overall)
  - Identify the number of ITP futures during scoping to balance ITP cycle workload with the value of additional information to increase decision quality within each cycle of the consolidated assessment (Flowchart Block 1)
  - Consider adjustments to transmission and interconnection service dispatch methodology including but not limited to “expected usage” concept<sup>2</sup> and impact factor thresholds (Flowchart Block 8)

Appendix A of this report describes two approaches for customer optionality in a consolidated planning process. This analysis lays out multiple paths to accomplish a consolidated planning assessment with varying benefits and challenges to the different stakeholders and staff involved.

**Action:** Assess and Implement

SPP staff work with applicable stakeholder groups to evaluate and approve either the Option 1, “Customer Opt-out,” or Option 2, “Customer Opt-in,” process flow for a consolidated planning process as described in Appendix A of this report.

**Assignments:**

Lead group: SPP Staff  
 Secondary groups: TWG, ESWG, MDAG, AQITF, GIUF, TSUF  
 Goal: Option recommendation Q3 2022

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<sup>2</sup> Reference “expected usage” of transmission service modeling in section 2.1.2 of the [ITP manual](#).

**Intersection with other processes or issues:**

- Adequate transition period to allow for clearing of the GI queue backlog
- Sufficient time and resources to develop required automation
  - Meet the goals of process efficiency and data consistency and collaboration
  - Meet the desired assessment timeline that provides timely customer answers and annual NERC compliance.
- Adequate consulting support to balance new process implementation and existing planning activities
- Intersection and collaboration with Services S1 recommendation
- Evaluation and recommendations for Affected System study coordination and requirements
- Appropriate prioritization of planning initiatives and assessments
- DQ3 – ITP Futures

**Potential impacts:**

- Provides the most optimal transmission analysis and portfolio results across the majority of SPP planning Tariff processes
- Understanding the aggregate transmission system impacts of a comprehensive set of planning activities
  - e.g., the ability for new services to provide system counterflows that could alleviate violations
- Provides service customers with an upfront comprehensive answer reflective of potential cost-sharing with load customers
- Reduces the need for SPP to manage multiple parallel service queues and assessments

## C4.2. Consolidation implementation: Phase 1

***Recommendation:** SPP staff and working groups should implement an initial “Phase 1” consolidated planning process that can meet the needs of SPP’s Integrated Transmission Planning (ITP), NERC Transmission Planning TPL-001, Transmission Service, Generator Interconnection (GI) and local planned transmission systems changes activities.*

### **Overview:**

Phase 1 of the consolidated approach should occur with the first consolidated study and transition based on working group recommendations for detailed procedures. Activities to be consolidated in Phase 1:

- ITP
- NERC TPL
- Transmission Service
- Generator Interconnection
- Local planned transmission system changes

During the preparation phase of the consolidated assessment, an open window to queue and process new service requests would be opened to determine those service customers and request types eligible to be included in the upcoming study. Additional planning processes to be incorporated into a consolidated approach should be addressed in the second phase of consolidation as detailed in Recommendation C4.3.

### **Action:** Implement

After the selection of a process flow option and the development of detailed procedures for a consolidated process under Recommendation C4.1, SPP staff and working groups should implement an initial “Phase 1” consolidated planning process that can meet the needs of SPP’s ITP, NERC TPL-001, Transmission Service, GI and local planned transmission systems changes activities. Due to timing needs for NERC, TPL-001 may require an off-ramp process to meet the annual requirement in the event the consolidated study processes exceed 12 months.

### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG, ESWG, MDAG, GIUF, TSUF, TPLTF
Goal:	Implementation complete by Q3 2023

**Intersections and Potential Impacts:** See C.4.1.

### C4.3. Consolidation implementation: Phase 2

***Recommendation:** After implementing C4.2 and completing an initial consolidated study, SPP staff and working groups should develop and implement policies to bring SPP's system load (AQ), sponsored upgrades, and generator retirement processes into the consolidated process.*

#### **Overview:**

After completing an initial consolidated study, Phase 2 processes should be included in a second phase of the consolidated study with recommendations from the applicable working groups. Activities to be consolidated in Phase 2:

- System load (Attachment AQ)
- Sponsored upgrades
- Generator retirements

#### **Action:** Implement

Staff and working groups should provide recommendations for incorporating additional planning processes into a consolidated planning approach and implement these recommendations as part of the second iteration of a consolidated assessment process.

#### **Assignments:**

Lead group: SPP Staff  
 Secondary groups: TWG, ESWG, MDAG, AQITF, GIUF, TSUF  
 Goal: Implementation complete by  

**Intersections and Potential Impacts:** See C.4.1.

## SERVICES RECOMMENDATIONS

The SCRIPT was tasked with developing policy recommendations to improve transmission and interconnection services that would result in:

- Improved responsiveness, efficiency and cost certainty of studies needed to provide customer-requested service
- Reduced dependence on queue-driven studies, with consideration given to development of proactive processes that identify and make transparent underutilized transmission capacity

### Challenges

SCRIPT members identified some critical challenges facing the delivery of services. Transmission service and GI upgrades are not optimized for the benefit of all users of the transmission system, generation and load development are inhibited by inefficiencies in current processes, and current processes are not perceived as having equitable costs, access or treatment of congestion.

### Analysis

During ideation sessions early in the process, SCRIPT participants and SPP staff suggested a number of proposals for consideration to address the critical challenges facing Services. This section lays out the list of proposed solutions of varying quality and feasibility that were raised in these sessions and that were discussed further in the sub-team meetings.

The first group of ideas were those to consolidate GI and TS with ITP. Though many of the recommendations are addressed under the consolidated planning process recommendations of the SCRIPT, some additional enhancements are contained in Services recommendations S1, S2 and S3. The SCRIPT set out to simplify and align processes and examined opportunities to reduce complexity, combine studies, coordinate upgrades and improve analysis and cost sharing for upgrades.

The SCRIPT evaluated ways to provide additional information and transparency for service customers by identifying existing points that can accommodate new load and new generation and pre-identifying interconnection costs.

The team examined the overlap between services and cost sharing and opportunities to modify cost allocation methods by adopting best practices from other ISO/RTOs, addressing challenges and simplifying funding and cost-allocation rules.

The group examined opportunities, beyond consolidation, to implement specific GI process improvements: streamlining process elements, adjusting thresholds, reducing restudies and rooting out process inefficiencies. For other service processes, the SCRIPT examined



opportunities to reduce the number of products, implement NEDTF recommendations and provide incentives.

## **Recommendations**

The SCRIPT identified the following four recommendations to improve SPP's transmission and interconnection services, both within the consolidated planning processes and independently of changes to consolidate planning:

- **S1. Consolidated GI and TS processes**
- **S2. Models, scenarios and assumptions**
- **S3. Number of TS products**
- **S4. GI backlog mitigation**

DRAFT

## S1. Consolidated GI and TS processes

**Recommendation:** SPP staff should work with the appropriate functional working groups to identify and implement process solutions that ensure timely and efficient service for GI request, long-term transmission service (TS) request, and delivery point addition (AQ) request processes under a consolidated planning process.

### S1.1. Create new services pre-screening tools and information requirements

SPP has an opportunity to leverage the Hosting Capacity Analysis tools, evaluating solutions developed by the Electric Power Research Institute (EPRI) and GridUnity to better serve GI requests. The aim of this project should be to produce a tool which can provide information about the capacity of the existing transmission system to host new interconnections.

An improved AQ screening process development effort began in 2020 as part of the AQITF HITT T3 recommendations. It will include calculating ATC for each node to determine available capacity in the system, and identifying areas in which requesting additional loads up to a certain amount would be unlikely to require upgrades. All AQ requests must be submitted through the screening process. Requests that pass the screen may be granted service, and requests that don't pass the screen will be evaluated further.

**Action:** Implement

- SPP staff should develop a tool that provides information about the capacity of the existing transmission system to host new load and generation interconnections
- Staff should continue development of an AQ screening request process, consistent with HITT T3, that will evaluate requests and grant service if the request passes the screen.
- Staff should develop these tools and processes in collaboration with the TWG and AQITF and with feedback from the GIUF and TSUF.

#### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG, AQITF, TSUF and GIUF
Goal:	Implementation complete by <span style="background-color: yellow;"> </span>

**Intersection with other processes or issues:** Recommendation C4 – Pre-screening of requests will occur before each consolidated study begins and will need to be considered in regards to its timing within the consolidated study process.

#### **Potential impacts:**

- Provides GI customers more information on the front end regarding impacts of their requests, allowing them to make more informed decisions
- Improved accuracy in determining potential impacts of AQ requests than the current AQ screening process

## S1.2. Implement new readiness criteria for GI requests

### **Description:**

Under a consolidated process, GI requests will continue to be submitted during an “open season.” All requests submitted during the same open season will be considered to have the same “queue priority.” Interconnection requests entering the consolidated process must meet the current requirements to enter the DISIS process with the following changes:

- **Site Control:** In addition to the generating facility, the evidence of Site Control must also include at least 50% of the length of the generator’s high-voltage tie line. In lieu of site control for the generator tie line, the customer may provide a higher FS1 in the amount of \$80,000 per line mile of right-of-way. The additional financial security will be considered at-risk. If at any point during the study process, the customer satisfies the applicable site control requirement for the generator tie line, the amount of additional in-lieu-of financial security will be refunded.
- **Final Layout:** The preliminary one-line diagram must depict what is intended to be a final layout drawing showing the proposed generating facility, Interconnection Facilities and Point of Interconnection, and must be certified by a registered professional engineer. The diagram may not be a generic template, but must be specific to the proposed generating facility. Subsequent changes to the layout will be subject to the modification procedures under Section 4.4 of the Generator Interconnection Procedures (GIP). And, for inverter-based resources, the customer must provide a final electromagnetic transients (EMT) model.
- The interconnection request must also include at least **one of the following:**
  - Power Purchase Agreement: An executed agreement (or comparable evidence) by an off-taker to purchase the output of the generating facility (“power purchase agreement”). The output may be consumed either inside or outside of the SPP Region.
  - Financing Commitment: Evidence that a commitment to fully finance the project has been secured.
  - Resource Plan Selection: Statement signed by an officer or authorized agent of the interconnection customer attesting that the generating facility is included in an applicable state resource plan.
  - Effective Interim GIA: An effective (executed or filed-unexecuted and accepted by FERC) interim GIA.
  - Transmission Service Reservation: OASIS number of a long-term transmission service reservation or network resource designation that sources from the proposed generating facility for the full amount of the interconnection service requested. The reservation must be confirmed or currently under study.

- Authorization to Construct: Statement signed by an officer or authorized agent of the interconnection customer attesting that a regulatory or governmental agency with applicable jurisdiction has authorized construction of the generating facility.
- Higher FS1: Payment of a higher amount of Financial Security 1 equal to \$4000/MW (instead of \$2000/MW) of interconnection service requested. Financial Security 1 will immediately be considered “at risk” and subject to forfeiture as described in sub-section (d) of Section 8.14 of the GIP, even if the request is withdrawn before the end of Decision Point 1 (DP1).

**Action:** Implement

SPP Staff should implement the generator interconnection readiness criteria developed by the SPP SCRIPT.

**Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG and GIUF
Goal:	Implementation complete by <span style="background-color: yellow;">      </span>

**Intersection with other processes or issues:** Recommendation C4 – The readiness criteria is a step identified in the consolidated planning assessment of C4. Timing associated with the readiness criteria will need to be compatible with the consolidated planning assessment timeline. In the event C4 does not go forward, this recommendation can be implemented in association with the existing 3-Stage GI process.

**Potential impacts:** This is expected to provide a reduction in speculative requests in the study process, which will result in SPP completing studies in a shorter timeframe and with less study cost. This will also provide customers with more cost certainty.

### S1.3. Modify GI decision point criteria

#### **Description: New Criteria for GI Decision Point 1 (DP1)**

DP1 occurs after the first round of the ITP study reaches the cost allocation milestone. To proceed to the next round of study, the customer must specify a network upgrade cost tolerance (NUCT) in dollars per megawatt. The NUCT should be set to cover both the costs of SPP upgrades as well as any affected-system upgrade costs that may be assigned by other entities.

During subsequent rounds of the ITP process, a determination is made as to whether any portion of the SPP costs assigned to interconnection requests would be allocated to the Base Plan because the upgrades meet reliability or economic needs for other service customers. If the interconnection customer's remaining directly-assigned Network Upgrade costs (including affected-system upgrade costs, if known) exceed the customer-specified NUCT, the request will be terminated. The NUCT may be any amount up to a reasonable limit.

The SCRIPT recommends that **an organizational group** be commissioned to develop and recommend a method to limit the NUCT so that it provides a meaningful filter: identifying requests that cannot be accommodated for a reasonable cost without unreasonably eliminating potentially viable requests.

Possible methods to establish a limit could include a comparison with costs assigned to higher-queued requests with executed GIAs, costs in initial rounds of the study process, or costs generally accepted within the industry as viable. **The organizational group** shall also consider whether a customer would be permitted to "buy through" the limit if it were reached, and the process to do so.

In addition to specifying the NUCT, the SCRIPT recommends the customer must also pay Financial Security 2 (FS2) as currently required in the existing DISIS process.

#### **Description: Withdrawal Clarification for GI Decision Point 2 (DP2)**

DP2 occurs after the second round of the ITP study again reaches the cost allocation milestone. At DP2, if an interconnection request has neither been withdrawn voluntarily nor terminated due to allocated costs exceeding the NUCT, the customer may proceed to the facilities study by paying Financial Security 3 as specified in the existing DISIS process.

Procedures for processing the facilities study and the subsequent GIA negotiation will proceed as under the current tariff. If the costs from the facilities study exceed the NUCT, the request will not be automatically terminated, but the customer may choose to withdraw subject to the financial security forfeiture rules in the current tariff.

**Action:** Assess, Review and Recommend

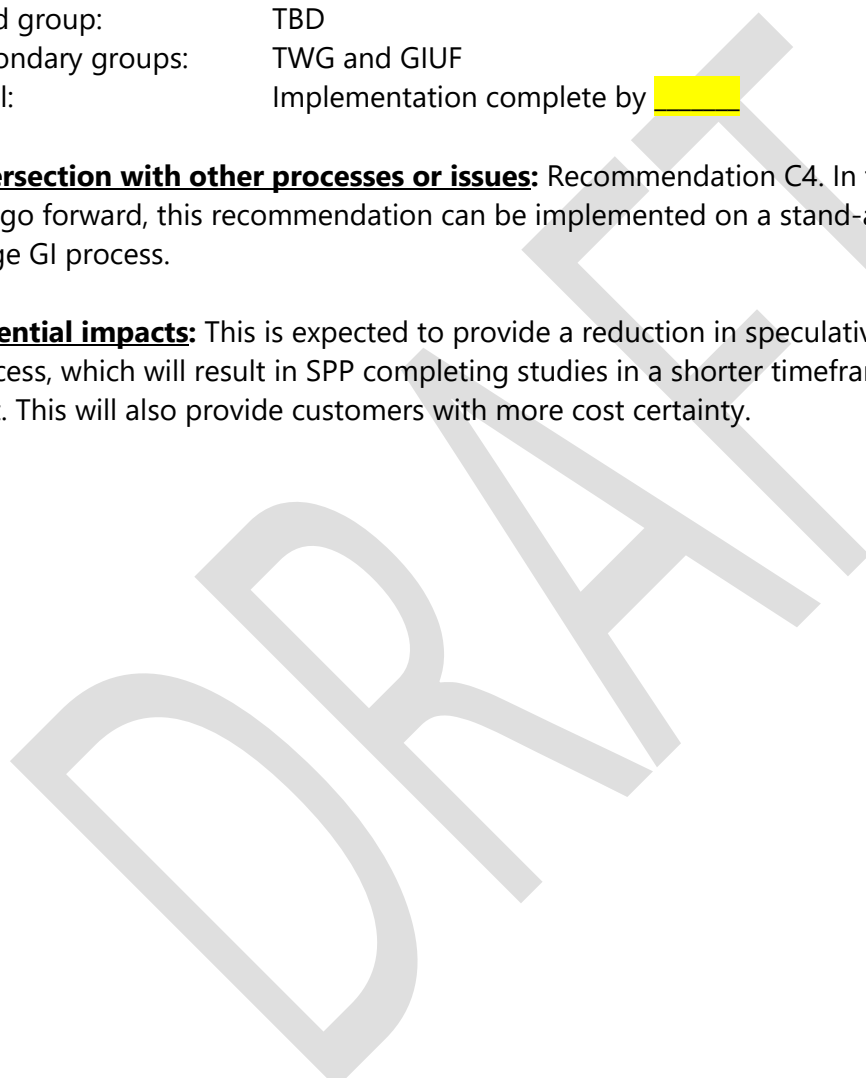
A newly commissioned working group should develop an appropriate NUCT limit for DP1, a “buy through” process for the NUCT limit and the NUCT construct should be implemented for GI requests in the consolidated study.

**Assignments:**

Lead group: TBD  
Secondary groups: TWG and GIUF  
Goal: Implementation complete by [redacted]

**Intersection with other processes or issues:** Recommendation C4. In the event that C4 does not go forward, this recommendation can be implemented on a stand-alone basis within the 3-Stage GI process.

**Potential impacts:** This is expected to provide a reduction in speculative requests in the study process, which will result in SPP completing studies in a shorter timeframe and with less study cost. This will also provide customers with more cost certainty.



## **S1.4. Use deliverability areas for GI requests as recommended by the NEDTF**

### **Description:**

The incorporation of GI requests into a consolidated ITP process will be done consistent with the HITT T1 recommendations. This will include evaluating the deliverability of Capacity Resource Interconnection Service ("CRIS") resources to loads within the same deliverability areas.

### **Action:** Implement

SPP staff should continue to work with the Deliverability Steering Committee to develop and implement HITT T1 recommendations related to deliverability areas for GI requests into a new consolidated process.

### **Assignments:**

Lead group:	SPP Staff and Deliverability Steering Committee
Secondary groups:	TWG and GIUF
Goal:	Implementation complete by <span style="background-color: yellow;">      </span>

**Intersection with other processes or issues:** Dependent on Recommendation C4.

**Potential impacts:** This will provide a more streamlined approach for customers who wish to obtain interconnection service and transmission service

## **S1.5. Implement policies for long-term transmission service (TS) requests in consolidated planning**

### **Description:**

TS requests will continue to be submitted during an open season which will be simultaneous with the GI open season. GI readiness criteria will not apply to TS requests. Readiness criteria for network service requests will consist of the current requirements in the tariff<sup>3</sup>. There is no TS readiness criteria for point-to-point requests.

The TS customer will provide the study parameters currently required in the SPP tariff<sup>4</sup>. The customer may re-set the parameters at DP1 after the first round of the consolidated ITP in the same way as is currently permitted after the first iteration of the aggregate study. After the second round of the consolidated ITP, TS requests that do not meet the customers' parameters will be terminated. Requests meeting parameters will be accepted and proceed to a Transmission Service Agreement.

### **Action:** Implement

SPP staff should incorporate the TS policy clarifications of Recommendation S1.5 into a consolidated planning process and work with organizational groups as needed to determine how the ITP will evaluate requests for both GI and TS simultaneously from the same resource.

### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG and TSUF as needed
Goal:	Implementation complete by <span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 50px; height: 15px;"></span>

**Intersection with other processes or issues:** Recommendation C4 – These details will need to be incorporated into the details of the consolidated planning assessment of C4.

**Potential impacts:** Developing a process for evaluating requests for both GI and TS from the same resource will result in streamlining and simplification of study processes as those requests will require one study instead of two.

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<sup>3</sup> SPP tariff, Section 29.2

<sup>4</sup> SPP tariff, Attachment Z1, Section III.A.



## **S1.6. Implement policies for delivery point addition (Attachment AQ) requests in consolidated planning**

### **Description:**

Consistent with HITT T3, in a consolidated planning process, for new AQ requests, the customer will continue to provide the information currently required in the SPP tariff<sup>5</sup>. AQ requests can be made at any time. AQ requests that pass the screening will be granted service without the need to go through the consolidated process.

AQ requests that do not pass the screening will be evaluated through the delivery point network study (DPNS)<sup>6</sup>. If upgrades are required to support the request and if evaluation of those upgrades in the consolidated study process would delay the availability of service beyond the requested start date, then NTCs will be issued and load connection will proceed, independent of the consolidated ITP study.

Otherwise, upgrades will be evaluated in the consolidated ITP so long as doing so will not risk delaying the service start. Upgrades may be modified in the consolidated ITP so long as the modification will not risk delaying the service start or if an alternative mitigation is available that will allow the service to start without delay.

There is no AQ readiness criteria for inclusion in the consolidated ITP. Since the upgrade costs for AQ requests are fully base plan funded, no cost parameters or cost tolerance is required of the customer.

### **Action:** Implement

SPP staff should incorporate the Attachment AQ policy clarifications of Recommendation S1.6 into a consolidated planning process.

### **Assignments:**

Lead group: SPP Staff  
 Secondary groups: AQITF, TWG and TSUF  
 Goal: Implementation complete by [REDACTED]

**Intersection with other processes or issues:** Recommendation C4 – These details will need to be incorporated into the details of the consolidated planning assessment of C4.

### **Potential impacts:** [REDACTED]

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<sup>5</sup> SPP tariff, Attachment AQ, Section 2.0

<sup>6</sup> SPP tariff, Attachment AQ, Section 3.2

## S1.7. Implement policies for provisional services in consolidated planning

### **Description:**

Provisional Services is a proposed new expedited path within the consolidated study process that would allow customers to obtain interim service while the consolidated study is completed. Provisional service would be an option for GI, TS and AQ requests. To elect to receive Provisional Services analysis, a customer must meet the readiness criteria appropriate to their request and must have a requested start date before the conclusion of the consolidated study end date.

Provisional Services analysis will be performed in parallel with the earlier steps of the first iteration of the consolidated study. Provisional Services requests may be aggregated together, and the analysis may identify upgrade requirements and cost allocation of those upgrades among the different service requests.

After analysis is complete, each Provisional Services customer may choose to accept or decline the Provisional Service and its associated requirements. The consolidated study will later determine the final upgrades and cost requirements for all requests, including those that receive Provisional Service. The final consolidated study upgrades and cost requirements could differ from the results of the Provisional Services analysis.

- If the customer declines the Provisional Service, they are still able to accept or decline the service later in the consolidated study process.
- If the customer accepts the Provisional Service, they are committing to acceptance of the upgrades and cost requirements that will later come out of the consolidated study.

AQ customers may elect to receive partial load interconnection service until the required upgrade(s) are in service. When accepting the Provisional Service, the AQ customer may interconnect part of the requested load, based on the reduced load value that would mitigate the issue from being a violation as determined by the analysis. The full load interconnection service would be granted as soon as the upgrade(s) are complete, based on the results of Provisional Services and the consolidated study.

Following acceptance of Provisional Service, an interconnection agreement or service agreement will be tendered to the customer to allow their service to commence as soon as possible. The agreement may be amended after the consolidated study is completed.

**Action:** Implement

SPP staff should incorporate the provisional service policies described in Recommendation S1.7 into a consolidated planning process, including any necessary tariff changes.

**Assignments:**

Lead group: SPP Staff  
Secondary groups: TWG, TSUF and GIUF  
Goal: Implementation complete by     

**Intersection with other processes or issues:** Recommendation C4 – Provisional Services is a step identified in the consolidated planning assessment of C4. Timing associated with provisional services will need to be compatible with the consolidated planning assessment timeline.

**Potential impacts:** Expedited study results may be provided to a customer that would allow for their service to begin sooner than the end of the consolidated process.

DRAFT

## S2. General improvements to administrative and technical procedures

***Recommendation:** SPP should continue to work with stakeholder groups to identify and implement improvements to administrative and technical study procedures, including models, scenarios and assumptions that will improve efficiency while maintaining reliability.*

### **Overview:**

On Jan. 6, 2021, SPP staff proposed and TWG approved a reduced model set for GI studies. The new model set will be implemented with the next cluster study. The change will result in the following:

- **Power flow models** reduced from 7 seasons to 4: Year 2 summer, Year 5 Summer, Winter, Light: Reduced from 308 cases to 172 (44% reduction).
- **Stability models** reduced from 4 seasons to 3: Year 5 Summer, Winter, Light: Reduced from 64 cases to 48 (25% reduction).
- **Short-circuit models** reduced from 2 seasons to 1: Year 5 Summer: Reduced from 32 cases to 16 (50% reduction).

SPP Staff also proposed and TWG approved a reduced set of cluster groups to be used in the GI study process. The change will reduce the number of groups from 16 to five and thereby simplify and streamline modeling and analysis.

### **Action:** Implement and Assess

- **Implement:** SPP Staff should continue to work with the TWG to identify and implement improvements to technical study procedures, including models, scenarios and assumptions that will improve efficiency while maintaining reliability.
- **Implement:** SPP Staff should work with the TWG and GIUF to develop a standardized Engineering Procurement and Construction agreement to enhance the ability of customers to move forward with interconnection facility construction before completion of studies, pursuant to GIP Section 9.
- **Assess:** SPP Staff should work with the TWG, TSUF and GIUF to determine whether there is sufficient interest in developing a new process for evaluation of new generator interconnections that will exclusively serve load located at the same point of interconnection and will not inject power into the SPP system. If there is sufficient interest, SPP Staff should work with these groups to develop a process to study such requests in an expedited manner that is not subject to the regular interconnection queue process.

**Assignments:**

Lead group: Transmission Working Group, TSUF and GIUF  
Secondary group: Model Development Advisory Group  
Goal:

**Intersection with other processes or issues:** This change will need to be coordinated with similar efforts to implement “deliverability areas” for network resources as recommended by the NRIS, ERIS and Deliverability Task Force.

**Potential impacts:** Reduced staff hours and stakeholder hours spent developing, reviewing, and analyzing GI cluster group results

DRAFT

### S3. Number of TS products

**Recommendation:** SPP should eliminate the long-term service request and delivery point transfer processes under Attachment AR.

**Overview:**

The SCRIPT recommends elimination of the long-term service request (“LTSR”) process in Attachment AR. The LTSR process was established to provide customers with a “feasibility study” for transmission service. However, there hasn’t been an LTSR request since 2016, which implies that customers find little value or need for it.

The SCRIPT also recommends elimination of the delivery point transfer (“DPT”) process in Attachment AR and incorporation of these requests into the consolidated study process. The DPT process was established in response to the lengthy delays in the ATSS process that existed at the time. Because those delays no longer exist, it is not necessary to maintain a process for delivery point transfer separate from the regular processes for evaluating long-term transmission service requests.

**Action:** Implement

SPP’s staff should submit a tariff revision to FERC eliminating the LTSR and DPT processes under Attachment AR.

**Assignments:**

Lead group:	SPP Staff
Secondary group:	TWG and TSUF
Goal:	<span style="background-color: yellow;"> </span>

**Intersection with other processes or issues:** None

**Potential impacts:**

- Reduced compliance risk to SPP
- Elimination of these two processes provides simplification of SPP planning processes
- Reduced processes for Staff to keep up with and manage
- Reduced governing language

## S4. GI backlog mitigation

**Recommendation:** SPP staff should develop and implement Revision Requests based on the GI backlog mitigation strategies already approved by SCRIPT, MOPC and SPP's board of directors.

### **Overview:**

As of May 13, 2021, the Generator Interconnection ("GI") backlog of requests was comprised of seven Definitive Interconnection System Impact Study ("DISIS") clusters representing 558 individual GI requests and over 103,000 megawatts ("MW") of generation capacity. Reducing the GI backlog was identified in SPP's 2021 Operating Plan as one of the top corporate and departmental objectives.

SPP has implemented numerous process improvements to the way it models and conducts GI studies, which will help in the overall goal of reducing study times. SPP's SCRIPT developed additional reforms based on three backlog mitigation strategies which are described in detail in Attachment B, and summarized below:

1. Strategy 1: Reduce restudies through development milestones
2. Strategy 2: Increase financial commitments
3. Strategy 3: Simplify and reduce study timelines

These strategies were approved unanimously by the SCRIPT May 28, 2021, and unanimously by the MOPC during its July 12-13, 2021 meeting.

**Action:** Implement

SPP staff should develop associated Revision Requests based on the approved strategies in coordination with the appropriate working groups to facilitate clearing the GI backlog. After revision requests are approved by FERC, SPP staff should implement the strategies. In the event C4 does not go forward, SPP staff should review the GI procedures and make a recommendation to the Board as to whether the procedures should be modified after the GI backlog is cleared and if so, what modifications should be made.

### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG, GIUF
Goals:	RRs completed by October 2021

**Intersection with other processes or issues:** None

**Potential impacts:** Elimination of the backlog of requests in the GI queue.

## OPTIMIZATION RECOMMENDATIONS

The SCRIPT was tasked with developing policy recommendations for more optimal solutions that meet a broader set of customer needs and optimize the existing and planned transmission network to cost effectively meet future needs while providing maximum value to the region.

### Challenges

During the process, the SCRIPT identified multiple challenges to optimized planning. SPP does not control the location of generation resources or new load, and policies may not sufficiently incentivize optimal grid usage. FERC Order 1000 primarily applies to regional and interregional planning processes currently and only in limited circumstances for the services processes.

Individual processes may find the best solution for a particular need or particular customer, but fail to create the optimal solution for the region. There are differences in the needs and assessments used to solve different issues in specific processes, and some SPP models do not acknowledge actual usage or the way the system is dispatched. Local planning decisions can create conflicts with regional processes. Compliance obligations from members can create conflicting objectives, and customers have differing timing needs for solutions.

There is a lack of initiative to invest in and implement non-transmission solutions like Dynamic Line Ratings (DLR) and topology optimization. There is an inertia toward the status quo; a real, but surmountable fear that a new model technology may upend some previously accepted and enacted transmission benefit metrics.

### Analysis

The SCRIPT developed a sub-team that was focused on developing ideas to optimize SPP's planning processes. During ideation sessions early in the process, the optimization sub-team identified a number of areas within SPP's planning processes that lacked efficiency and created an opportunity for value creation. The areas were categorized into two buckets, those that create opportunity to optimize the existing transmission system and those that create opportunities to optimize the planned transmission system of the future. This section lays out the list of proposed solutions resulting from the sub-team and larger SCRIPT meetings.

### Recommendations:

The SCRIPT identified the six recommendations to optimize SPP's consolidated planning processes and better optimize the existing and planned transmission network:

- **O1. ATC calculation and use**
- **O2. Non-transmission expansion solutions**
- **O3. Project Value Drivers**
- **O4. Holistic needs and solutions assessment**
- **O5. Aging infrastructure**
- **O6. SPP and MISO**



## O1. ATC calculation and use

**Recommendation:** SPP should develop a process to implement proactive ATC calculations for delivery points, and include aggregate transmission service and generator interconnection studies.

### **Overview:**

There is an opportunity to leverage the HITT T3 recommendation to develop a process to implement proactive Available Transfer Capability (ATC) calculations for delivery points and expand and modify this approach as necessary for aggregate transmission service and generator interconnection studies.

- Utilize planning models to identify points of interconnection on the SPP system that have available transfer capability, strong voltage profiles and reactive power flow, congestion rankings, etc.
- Post this information as appropriate to add transparency for prospective transmission customers

This process could inform transmission service customers of generation to load paths that may be accommodated with no or fewer transmission constraints. Similarly, the process could create an incentive for customers seeking to interconnect new generation to request interconnection at points on the system that currently have more transfer capability. Third-party software solutions could provide this benefit and some have been adopted by other ISO/RTOs.

### **Action:**

SPP staff should work with the TWG and GIUF to develop a process to implement proactive ATC calculations for delivery points and expand and modify this approach as necessary for aggregate transmission service and generator interconnection studies.

### **Assignments:**

Lead group: TWG  
 Secondary groups: GIUF, TSUF, SPP staff  
 Goals: Process implemented by           

**Intersection with other processes or issues:** Some customers may use this information to preemptively block other customers from utilizing highly valued points of interconnection. This will need to be addressed within the development of this process.

### **Potential impacts:**

- Reduced magnitude of transmission additions by better leveraging existing assets
- Lower costs for requests for transmission or interconnection service
- Reduced request withdrawals and resulting restudies

## O2. Non-transmission expansion solutions

***Recommendation:** SPP should develop policies that appropriately expand the definition of “transmission” to improve the use of existing assets, and modify planning processes as appropriate to allow use of non-transmission expansion solutions.*

### **Overview:**

SPP has requirements to meet criteria established by NERC reliability standards and SPP’s tariff for economic, reliability and public policy needs. SPP’s authority does not currently extend to directing the development of generation or implementation of other non-transmission solutions. Other ISO/RTOs have begun to develop policies that would take a broader view of what constitutes “transmission,” such as the development of storage as a transmission-only asset (SATO). SPP could adopt similar policies that could expand the definition of what constitutes “transmission.” SPP has an Electric Storage Resources Steering Committee that is looking specifically at policies related to the adoption of storage.

SPP should take on an initiative to evaluate the merits of adopting methodologies or policies that focus on increasing the usage or enhancing the functionality of existing assets. Formal policy should be evaluated and adopted for the effective use of operating guides to mitigate or defer transmission investment for regional and local planning as well as for granting transmission or interconnection service.

Operating guides should consider the acceptable use of transmission reconfigurations, generator commitments for thermal or reactive support, enhanced ratings methodologies like DLR, or other non-transmission solutions. Examples of increasing the functionality of existing assets could be increased usage of Flexible AC Transmission System (FACTS) devices that can enhance the control of the power system to increase the value of underutilized transmission routes. While these technologies have pros and cons, SPP could take a deep dive into best practices for the use of these devices for planning purposes and develop new policy through the stakeholder process as appropriate.

Additionally, SPP could consider modifications to its planning processes to allow more comprehensive adoption and acceptance of stakeholder, transmission owner, and generation developer solutions that could also satisfy the applicable planning criteria. Contractual commitments and obligations on the installation of non-transmission solutions would likely be required, and SPP would need ultimate backstop authority for directing the construction of transmission to ensure applicable criteria could continue to be satisfied.

### **Action:**

SPP staff should work with the ESRSC, TWG and CAWG to develop policies that appropriately expand the definition of what constitutes “transmission,” increase the usage or enhance the functionality of existing assets, and modify planning processes to allow more comprehensive solutions that consider newly defined “transmission” assets and non-transmission expansion.

**Assignments:**

Lead group: SPP Staff  
Secondary groups: ESRSC, TWG, CAWG  
Goals: Policies developed by \_\_\_\_\_ and implemented by \_\_\_\_\_

**Intersection with other processes or issues:**

- Usage of these non-transmission solutions to mitigate reliability issues may intersect with NERC standards or operational processes. Additional attention will need to be given to this relationship to ensure usage of non-transmission solutions appropriately meets NERC requirements and also provides system operators the level of flexibility necessary to maintain system reliability.
- Usage of non-transmission solutions to mitigate transmission system issues may drive additional considerations for new compensation mechanisms. This will need to be vetted thoroughly from a regulatory standpoint at both the state and federal levels.

**Potential impacts:**

- Improved expansion planning solutions
- Increased usage or enhanced functionality of existing assets

### O3. Project value drivers

***Recommendation:*** SPP should develop and prioritize a set of standard value drivers for the consolidated process and use this additional information to analyze and compare projects.

**Overview:**

As part of the implementation of a comprehensive planning process, SPP Staff and stakeholders should develop an itemized list of the types of quantitative and qualitative value that transmission expansion creates. This list should consider existing benefit metrics in addition to any new potential drivers of value to regional, sub-regional and local stakeholders.

These value drivers should be assigned to project types. For example: APC savings, avoided reliability costs, and flexibility to facilitate future transmission installations may be assigned to economic projects. This type of project information could be cross referenced with transmission services and GI processes to assess the potential impact to the respective queues.

Staff and stakeholders should develop a weighting system for value drivers to support – not replace – analysis and comparison of how competing projects meet future uncertainties. They should also develop groupings or packages based on value drivers as options for consideration. They should consider adopting criteria that favors transmission that provides future optionality.

The process may then select projects that provide the most overall value to the system based on priorities established by SPP stakeholders. When a portfolio of projects is developed by SPP and presented to stakeholders, SPP should present a comprehensive view of the drivers and benefits of those projects that include an assessment of the optimization of the portfolio to satisfy regional planning criteria, generation interconnection, transmission service and local planning needs. Additional coordination with the cost allocation, consolidation and services sub-teams will be required to further develop how an optimized portfolio could be implemented.

**Action:**

SPP staff should work with the TWG, ESWG and SPC to develop and prioritize standardized value drivers for projects in the consolidated process and use this additional information to inform analysis and comparison of competing projects.

**Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG, ESWG, SPC
Goals:	Value drivers process implemented by _____

**Intersection with other processes or issues:** Right-of-way is becoming more difficult to obtain. Transmission expansion decisions need to be comprehensive and considerate of future needs.

**Potential impacts:** Increased stakeholder awareness and acceptance of portfolio value and optimal project selection based on targeted value drivers.

## O4. Holistic needs and solutions assessments

***Recommendation:** SPP should develop a process to conduct holistic planning needs and solutions assessments under the consolidated planning process.*

### **Overview:**

SPP's current ITP process evaluates the reliability, public policy, and economic needs of the system over a 10 year horizon. The process considers the impacts of varied forecasts of load growth and generation portfolios on the future transmission system, as well as transmission solutions that may address those impacts.

However, the ITP does not facilitate the analysis of specific requests for generator interconnections, load interconnections or transmission service. These requests are evaluated in separate planning processes that also produce transmission solutions. Performing these assessments in silos, rather than in a comprehensive fashion can lead to sub optimal transmission solutions that limit the value of the transmission network.

The SCRIPT's consolidation proposal that enables the aggregation of the following transmission needs and project types;

- Economic
- Generator Interconnection
- Public Policy
- Aging Infrastructure
- Regional Reliability
- Delivery Point Interconnection
- Local Reliability Projects
- Transmission Service
- Generator Retirements

This creates the opportunity for SPP to develop a more optimal transmission network for the benefit of its members and customers. This optimization aims to identify projects that are most valued by day-to-day market operations first since that is how the system is most frequently operated, and then builds onto those core projects with reliability solutions that add the necessary resilience to the system that supports deliverability of capacity to loads when the system is heavily stressed. This approach reverses the approach SPP has historically used to analyze projects in its current regional planning processes.

### Identify most costly market constraints and public policy needs:

The first step in optimizing the regional transmission network under the consolidated process is to add all qualifying service requests that are applicable to SPP market operations into economic planning models. This should include qualifying Generator Interconnection requests and delivery point additions because this represents additional resources and loads that will be offered to or

bid into the market respectively. Next, the transmission system should be assessed for system constraints that consider this additional information. This assessment should result in a more representative view of what SPP system flows and congestion patterns may be in future years. This should also help identify the most likely hurdles to future market efficiency and the ability to meet public policy requirements for energy delivery.

#### Identify most cost-effective solutions to address market constraints and public policy needs

Once needs most likely to limit SPP's ability to maintain market efficiency or reach public policy requirements are identified, solution ideation and technical analysis can begin using the **list and priority of comprehensive project value drivers** and optimization components like aging infrastructure and known local reliability projects will be evaluated to select the most cost-effective portfolio of projects to address the needs. Staff will capture key benefit metrics like APC benefits to both generation and load at this step of the process that could be made available for use as a component of cost sharing considerations.

#### Begin to assess potential barriers to reliable network load service

After a portfolio of projects have been identified to most cost effectively meet the most likely and/or most impactful market constraints and public policy requirements, this portfolio should inform SPP's reliability analysis. Reliability analysis should consider the applicable steady state, short circuit, and stability impacts to the transmission network of qualified long term firm transmission service requests, including delivery point additions. Any violations to SPP's planning criteria and/or local planning criteria will be identified for resolution.

#### Identify solutions to reliability issues

In order to address any reliability issues, the portfolio of economic and public policy solutions will be leveraged for synergy that will retain as much of the cost-effective market solution as effective. Other considerations within the **list and priority of comprehensive project value drivers** and optimization components like aging infrastructure and known local reliability projects will be evaluated. The result of this analysis should yield optimal refinements to the economic and public policy portfolio.

#### Determine if any residual reliability needs associated with GI requests remain

Once the preliminary optimal regional portfolio has been developed that accounts for the economics of all generation available to the market and the reliability implications of all network resources that are dedicated to reliable load service that portfolio can be leveraged within a final check on the system for reliability impacts of qualified generator interconnection requests. In the event there are remaining system needs that create synergy opportunities with the portfolio of projects, solutions will be assessed that consider the **list and priority of comprehensive project value drivers** and optimization components like aging infrastructure and known local reliability projects. If the remaining system needs have little to no synergy opportunities with the portfolio of projects, least cost solutions will be selected.

**Action:**

SPP staff should work with the ESWG and TWG to develop a process to conduct holistic planning needs and solutions assessments under a consolidated planning process that assesses and identifies solutions for market restraints, public policy needs, and reliability issues for network load service and GI requests. Once a portfolio is established an impact analysis of GI requests and applicable Transmission Service requests can be run and made available for use as a component of cost sharing considerations.

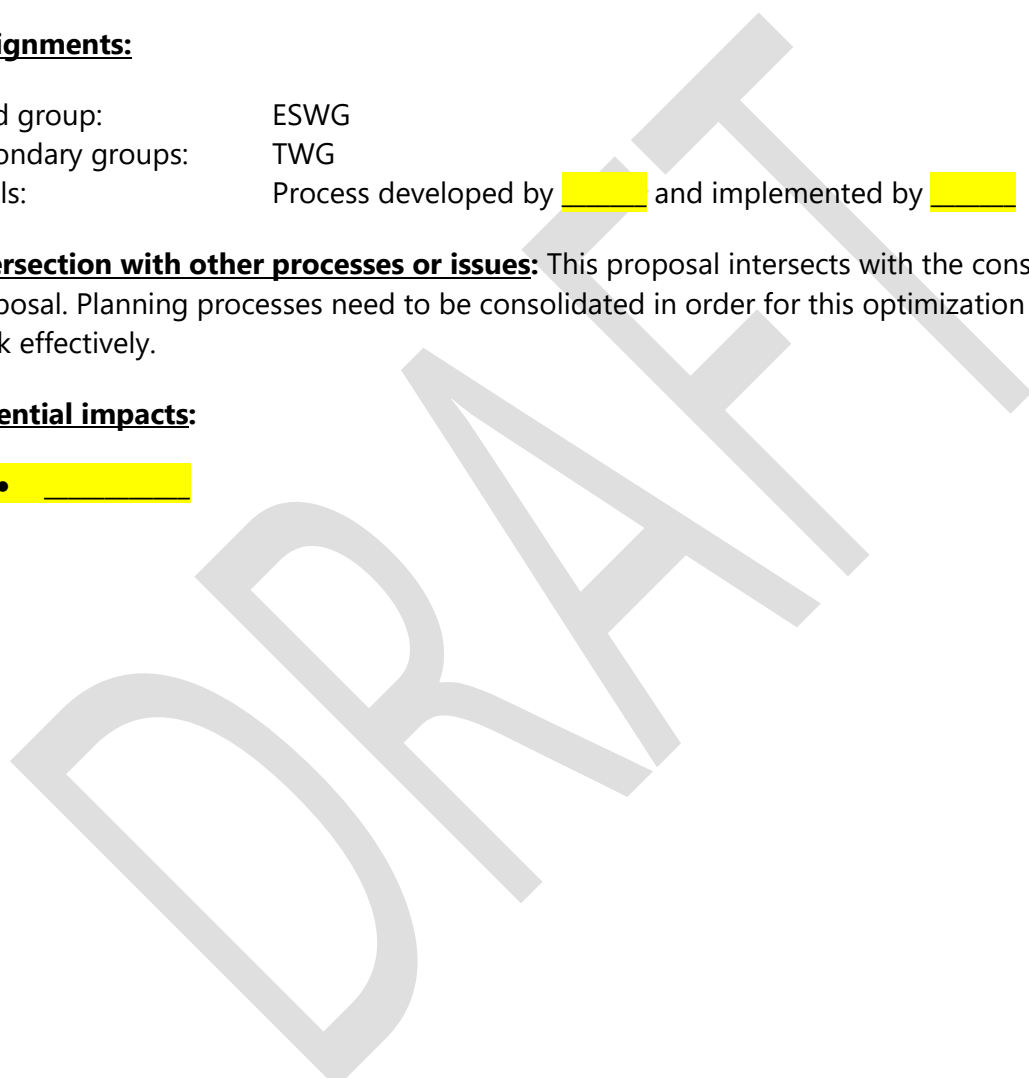
**Assignments:**

Lead group: ESWG  
Secondary groups: TWG  
Goals: Process developed by [redacted] and implemented by [redacted]

**Intersection with other processes or issues:** This proposal intersects with the consolidation proposal. Planning processes need to be consolidated in order for this optimization approach to work effectively.

**Potential impacts:**

- [redacted]



## O5. Aging infrastructure

**Recommendation:** SPP should develop policies that add aging infrastructure to the ITP as a formal need to be considered and addressed under the consolidated planning process.

### **Overview:**

Much of the transmission grid includes facilities that are approaching end of useful life. Utilities are making investment decisions to revitalize these facilities to extend their useful lives and to address other issues like excessive operational failures and safety concerns.

In parallel, the SPP RTO develops plans for incremental transmission expansion intended to meet the future needs of the grid and to provide value to members and their customers. While there is a great deal of collaboration between the RTO and transmission owners (TO) on regional planning, there is very little collaboration on local planning activities for existing assets.

Better coordination of local and regional planning processes could identify opportunities to optimize the physical operation of the transmission system and reduce the possibility of redundant transmission investment. For example, increased coordination of TO and RTO plans could identify opportunities to utilize regional planning solutions as a more cost-effective means of addressing both local and regional needs than simply rebuilding existing assets in kind.

Improved awareness of end of life facilities could result in value added recommendations to either retire aging facilities, replace aging facilities with new transmission projects, rebuild aging facilities in kind, or to modify these aging facilities to better serve the current needs of the system. A planning process that takes these needs into account would allow the opportunity for SPP to better identify the comparative value of options to address the aging facilities.

Cost recovery for aging infrastructure should be limited to the incremental cost of optimized solutions as compared to the in kind replacement cost of aging facilities. The majority of SCRIPT members agree that Transmission Owners should have discretion to choose which aging assets should be evaluated in the optimized process. Any aging assets selected by TOs to be optimized must meet consistent criteria established and vetted within the SPP stakeholder process.

### **Action:**

SPP staff should work with the TWG, ESWG and CAWG to develop policies that add aging infrastructure to the ITP as a formal need to be considered and addressed.

### **Assignments:**

Lead group:	TWG
Secondary groups:	ESWG, CAWG
Goals:	Value drivers process implemented by [redacted]

**Potential impacts:** Optimize the physical operation of the transmission system and reduce redundant transmission investment.



## O6. SPP and MISO

**Recommendation:** SPP should better align the timing of SPP's and Midcontinent Independent System Operator's (MISO) planning and generator interconnection processes.

### **Overview:**

To the extent possible, better align the timing of SPP and Midcontinent Independent System Operator (MISO) planning and generator interconnection processes. Regarding the long-term planning processes, having the study schedules aligned ensures that each RTO's study assumptions can be better aligned, stakeholder reviews can be conducted timely, and project approvals can be in sync.

This should also provide improved visibility and transparency of value to each RTO to support equitable cost allocation outcomes for new projects for both RTOs.

For generator interconnection processes, alignment between interconnection queue priority policies and the schedule for completing affected system studies will facilitate greater certainty for customers.

Providing timely definitive answers to interconnection customers is critical to the development of new resources in the SPP and its neighboring regions.

### **Action:**

SPP staff should work with MISO staff to identify opportunities to align the timing of SPP's and MISO's planning and generator interconnection processes. SPP staff should coordinate with the Seams Advisory Group and consult with the OMS and RSC...

### **Assignments:**

Lead group:	SAG
Secondary groups:	TWG, ESWG, GIUF, RSC and OMS
Goals:	Value drivers process implemented by <span style="background-color: yellow;"> </span>

### **Intersection with other processes or issues:**

- SPP-MISO Joint Study

### **Potential impacts:**

- Improved visibility and transparency of value
- More equitable cost allocation outcomes
- Greater certainty for customers

## DECISION QUALITY RECOMMENDATIONS

The SPP Strategic and Creative Re-Engineering of Integrated Planning Team (SCRIPT) Decision Quality Sub-Team has focused its activities on developing policies to be applied to Southwest Power Pool's (SPP) various transmission planning processes that result in greater decision quality. Transmission planning, which often results in the recommendation of transmission infrastructure investments, is one of SPP's key functions. Ensuring long-lasting financial decisions are being made with the utmost confidence and quality is imperative.

SPP currently has multiple transmission planning processes that have the ability to result in transmission investment. All of these studies, as with most things, could be improved by applying greater decision quality. In parallel to the Decision Quality Sub-Team's efforts, other SCRIPT sub-teams are focusing on a more consolidated or holistic planning process which can also be improved by added decision quality. Due to the potential of a change in structure to SPP's planning processes, the Decision Quality Sub-Team's efforts will initially focus on high level proposals that can be applied to all planning studies. Once there is further direction from the other sub-teams on how SPP's existing planning processes may change, additional and more specific decision quality recommendations may be made.

SPP's existing transmission planning processes include:

1. Integrated Transmission Plan (ITP)
2. Generator Interconnection (GI)
3. Transmission Service (TS)
4. Attachment AQ Load Additions Process (AQ)
5. Interregional and Seams Planning

Not all proposals to create additional decision quality are created equal, some may take very little time and have a high impact on the outcome. Others may be very time consuming, but low impact. The Decision Quality Sub-Team will consider what the appropriate framework is for this work effort by deciding where the group should be applying our time and energy with a decision quality focus.

### **Definition of Decision Quality**

The SCRIPT was tasked with developing policy recommendations that result in utilization of processes and information needed to ensure decisions being made about future investment in transmission infrastructure are made with a high degree of confidence and quality.

Decision quality does not have one standard definition, and what successful decision quality looks like doesn't have a single result. Below are common themes of successful decision quality on which the SCRIPT Focused.

- High Quality Data and Information: SPP's planning studies utilize a tremendous amount of data to develop models which are then used to evaluate different needs on the

transmission system. SPP staff obtains this data and information through numerous different avenues. Member-submitted data, industry databases, forecasting software, neighboring entities and real-time operations are all mechanisms used to obtain SPP planning data. Ensuring those mechanisms all deliver the highest quality data is vital to these processes resulting in decision quality recommendations for transmission investment.

- Credible Study Assumptions: To various degrees, all of SPP's planning processes utilize assumptions to create the models and methodologies used for evaluating the transmission system. Whether SPP's planning studies are evaluating projects to ensure economics, reliability, public policy compliance or deliverability; ensuring that the assumptions, thresholds, and/or futures developed for those studies are of the highest quality is imperative. Examples of assumption improvements could be consideration of the probability of certain events or incorporating a larger bandwidth of study assumptions. The decisions resulting from SPP's planning process are only as good as the data and study assumptions on which those decisions are based.
- Comprehensive and Wide-Ranging Analysis: Another of the primary components of decision quality is ensuring there is a wide range of quality choices to consider when making a decision. Recommending transmission investment should not be any different. SPP's planning processes should be comparing competing projects based on varying sets of analyses to ensure a decision quality decision is reached.
- Process and Solution Flexibility: The transmission system is ever-changing, and change is often experienced throughout the course of a planning study cycle. Whether it be a forecast model input that is no longer accurate or a planned transmission project will not be in-service as originally modeled, change is inevitable. Creating a planning process that is flexible to adapt to those changes and making project recommendations that are robust enough to address differing conditions or multiple needs is necessary for decision quality.
- Timely Response: While a late or untimely response does not necessarily mean the result will be low-quality, there is certainly a relationship between the two. Delivering a high quality decision on time and as expected creates credibility and allows for proper feedback and consideration. Breaking deadlines or working down to the last minute to make a decision can damage decision quality. The idea of a timely response is also applicable to stakeholders providing data and feedback in a timely manner so it can be used as a part of the evaluation before making decisions.
- Consensus: It is hard to reach unanimity in anything where there are conflicts of interest. However, decision quality can be added to a process by ensuring all the different viewpoints are considered before forming a decision. Transparency is likely a key aspect of ensuring that while everyone might not agree or benefit from the outcome of a study, they understand why the decision was made.

## Challenges

Some of the limitations or issues that prevent an increase in decision quality include:

- Uncertainty of Future Events: SPP's transmission planning studies are future looking studies meant to anticipate different needs along the transmission system. While some studies are more limited with the assumptions and scenarios that are evaluated, they all have one thing in common, attempting to predict future circumstances. Given this fact, and the lack of a "crystal ball," the unknown and the uncertainty of future events inherently makes transmission planning a challenge. This is specifically a challenge when it comes to making high quality transmission investment recommendations, because the investments are long-term and payback tends to be over a longer period of time.
- Complexity of the Transmission System: The bulk electric system is an extremely complex and interconnected machine that changes faster than the models can be built and analyzed. When you layer the complexity of the transmission system itself with trying to predict and evaluate future needs on the system, it is challenging for transmission planning processes to keep up.
- Planning Process Silos and Inconsistencies: SPP has multiple distinctly different planning processes. While there are ongoing efforts within the SCRIPT and by SPP staff to change this, these studies are majorly conducted in silos. They can also utilize different study assumptions and have differing goals that make it hard to coordinate with each other. This item is likely to be addressed by the SCRIPT Consolidation Sub-Team.
- Time, Resource and Schedule Constraints: Added decision quality can be realized through additional analysis and time within the decision making process. However, SPP currently works under multiple limitations related to staff availability, tight deadlines, analysis tools, competing priorities and overlapping schedules.
- Conflicting Interests: Just as the transmission system is complex and interconnected, so are SPP's members. Each member has a different value structure and differing business models and goals. A major challenge to reaching a high level of consensus and decision quality is overcoming these differences. Another aspect of conflicting interest is bias. Bias can inadvertently make its way into SPP's planning studies and have the potential to impact making a decision quality decision.
- Compliance and Regulation: SPP's planning processes have different sets of rules that govern each planning process with varying degrees by which they can be changed. Some only require approval by the MOPC or SPP's board to be removed or modified, while others require a change to a NERC standard. The SPP tariff, NERC standards, SPP Planning and Operating Criteria, SPP Bylaws, and confidentiality provisions are all examples of sets of requirements that must be met throughout a planning evaluation. At times, their rigorous requirements can be an impediment to decision quality.

## Analysis

Not all decisions require an extensive decision quality process, so the SCRIPT also assessed which areas or decisions require decision quality, including those for which it already exists, and which areas or decisions need less or no decision quality. In some cases, decision quality could be used to minimize conflicts and realize greater consensus for transmission investment.

The SCRIPT then examined policies that could be applied to SPP's transmission planning processes to realize greater decision quality. The team assessed the appropriate correlation between study length and realizing the greatest amount of decision quality and how changes to planning to implement a consolidated process could impact decision quality or create the need for additional decision quality.

Some proposed recommendations from early in the SCRIPT's process were discussed but removed from the final list of recommendations, including study process flexibility, probabilistic planning, generation dispatch assumptions, additional futures and models, and changes to planning process deadlines.

## Recommendations

The SCRIPT identified the following eight recommendations to improve decision quality across planning process, which are grouped under three broad goals. The implementation of all these recommendations should consider the potential adverse impacts on study schedules and SPP resources:

1. Goal: Achieve a high-level of decision quality through high-quality data and credible study assumptions:
  - **DQ1. Modeling data**
  - **DQ2. Cost estimation process**
  - **DQ3. ITP futures**
2. Goal: Evaluate a wide-range of potential solutions with comprehensive analysis to ensure a proper balance between work effort and decision quality.
  - **DQ4. Solution development and submissions**
  - **DQ5. Sensitivity analysis and benefit metrics**
3. Goal: Provide timely recommendations for transmission investment that achieve a high level of decision quality and improve stakeholder consensus.
  - **DQ6. Consolidated planning process and schedule**
  - **DQ7. Presentation of study results**
  - **DQ8. Objective analysis**

## DQ1. Modeling data

***Recommendation:*** SPP should assess ways to centralize and improve timeliness and accuracy of model building and assumptions through new restrictions, tools and processes.

### **Overview:**

To better manage the vast amount of data that is used throughout all of SPP's planning processes, modeling practices should consider the following decision quality improvements. These improvements should be adjusted as necessary to accommodate any potential changes to SPP's planning processes as a result of the SCRIPT effort.

SPP should assess the possibility of removing the process that accommodates untimely or late data submissions as this process can strain delivering timely and accurate models, and review the potential of utilizing independent forecast, additional software and increased automation.

The SCRIPT also recommends a review of the current model build schedules. There is an opportunity to add decision quality by optimizing the timing of model builds to sync with external model build schedules, model build dependencies and assessment start times. This could likely be improved through the reduction of the number of models being developed and minimizing model build overlaps. SPP should also review the potential to create a more centralized modeling starting point and starting assumptions.

### **Action:** Assess

The MDAG and TWG should assess restrictions on accommodation of untimely or late data submissions and review model build schedules. They should also review the potential to have a more centralized modeling process, and to use new tools to timeliness and accuracy of models.

### **Assignments:**

Lead group:	MDAG
Secondary groups:	TWG, ESWG, SPP Staff
Goals:	Target initial completion by 2024 ITP; Ongoing continuous effort

**Intersection with other processes or issues:** Improvements to SPP's current modeling processes will need to account for the potential changes as a result of SCRIPT consolidation process. Specifically recommendation DQ1 intersects and has similarities to the consolidation recommendation C1, these recommendations will likely be solved in parallel.

### **Potential impacts:**

- More timely model completion resulting in on-time planning study completion.
- Increased modeling accuracy resulting
- Higher degree of planning study quality and confidence in transmission investment.

## DQ2. Cost estimation process

**Recommendation:** SPP should conduct a review of ways to improve the quality of the cost estimation process.

### **Overview:**

SPP has an opportunity to improve the level of decision quality within SPP's cost estimation process by focusing on conceptual cost estimates. Currently, SPP's conceptual cost estimates are used to calculate initial benefit to cost ratios, which determine what projects progress within study processes. These improvements should be adjusted as necessary to accommodate any potential changes to SPP's planning processes as a result of the SCRIPT effort. . .

**Action:** Implement

The Project Cost Working Group (PCWG) should consider zonal level cost estimates, applying SPP's minimum design standards to the SPP region (not just competitive projects), providing more detailed information on project lead times, and allowing more time for the development of Transmission Owner level cost estimations.

### **Assignments:**

Lead group:	PCWG
Secondary groups:	SPP Staff
Goals:	Target initial completion by 2023 ITP; Ongoing continuous effort

**Intersection with other processes or issues:** These improvements to the cost estimation process should not be delayed or impacted by parallel SCRIPT implementation efforts.

### **Potential impacts:**

- Increased accuracy of SPP's cost estimates resulting in a higher degree of confidence in transmission investment.
- More process efficiency resulting in time savings of Transmission Owners and SPP staff.

### DQ3. ITP futures

***Recommendation:** SPP should identify the most impactful variables in the futures development process and prioritize a data driven approach to determining those inputs.*

**Overview:**

SPP should develop a process that incorporates more data-driven assumptions in SPP's planning processes, ensuring that the assumptions, thresholds and inputs are based on sound data and analysis can create a greater degree of decision quality.

For example, in the ITP process forward looking futures are created to study a range of potential circumstances the transmission system could encounter. Typically, the development of these futures has been driven by the proposal that has the greatest level of stakeholder consensus.

While a high degree of consensus is an important gauge for the success of a proposed future, it should not necessarily be the driving force behind its development. A new process that utilizes more analysis and industry expertise is warranted to achieve greater decision quality.

To build additional decision quality into the process of developing futures and scenarios, SPP staff should use more objective analysis to determine futures drivers and study assumptions. Adding objective analysis will add decision quality by removing bias and subjective emotional input that can find its way into the process when using a strictly consensus driven approach. This objective analysis could potentially be achieved through utilizing alternative data sources, additional software and greater third party involvement.

While the number of futures evaluated within SPP's planning studies may change based on other SCRIPT Sub-Team efforts, determining the appropriate number of futures for evaluation should be a "decision quality decision." While determining the appropriate number of futures may not necessarily be a decision that is made each year, the parameters and process around making that decision should be thoroughly and appropriately considered.

**Action:** Assess

The ESWG and TWG should assess and identify impactful variables in the futures development process and prioritize a data driven approach to determining those inputs. This process should be done periodically to ensure any changes in the most impactful variables is captured.

This assessment should also not be limited to the assumptions within each future and could also be applied to the siting and resource planning milestones within futures development. Staff should pursue greater coordination between SPP staff, ESWG, MOPC and the SPC throughout the decision making process.



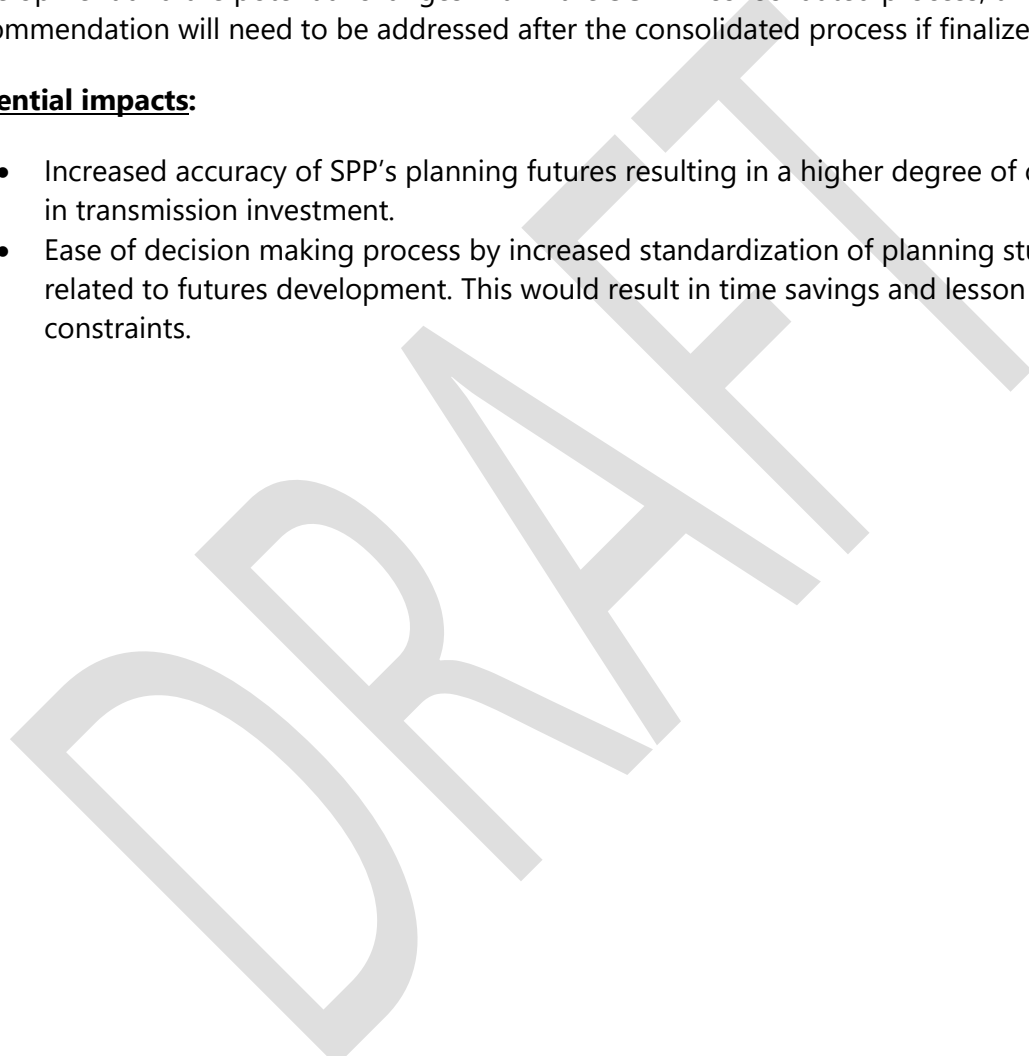
**Assignments:**

Lead group: ESWG / TWG  
Secondary groups: MOPC, SPC, SPP Staff  
Goal: Implemented by the next planning cycle subsequent to the completed implementation of the consolidated planning process.

**Intersection with other processes or issues:** Given the large intersection between futures development and the potential changes within the SCRIPT consolidated process, this recommendation will need to be addressed after the consolidated process if finalized.

**Potential impacts:**

- Increased accuracy of SPP’s planning futures resulting in a higher degree of confidence in transmission investment.
- Ease of decision making process by increased standardization of planning study scopes related to futures development. This would result in time savings and lesson schedule constraints.



## DQ4. Solution development and submissions

**Recommendation:** SPP should assess and potentially implement a process to use ITP reliability metrics and project selection software across other planning process.

### **Overview:**

Making certain that SPP's planning processes are considering multiple high-quality alternatives can enhance decision quality. Ensuring quality alternatives exist should include the evaluation of multiple projects per need to avoid making a "good enough" decision.

Alternatively, these quality project alternatives should also be evaluated on the ability to solve multiple needs within the same study. For example, does one project solve both an economic need and a reliability need within the ITP?

This could be accomplished through the use of ITP reliability metrics and project selection software across planning processes such as AQ, GI and Transmission Service studies. The incorporation of these metrics and software could optimize the efficiency of each study.

Time and resource constraints are likely one of the main challenges that will limit the development and evaluation of additional quality alternatives.

### **Action:** Assess

SPP Staff should review the outcome of the SCRIPT consolidation process to ensure the process includes the ability to develop and evaluate multiple high-quality alternatives to address transmission needs.

### **Assignments:**

Lead group:	SPP Staff
Secondary group:	TWG, ESWG
Goals:	Implemented by the next planning cycle subsequent to consolidated process completion.

**Intersection with other processes or issues:** Once the consolidated process is completed the assessment of this recommendation may result in these improvements already being addressed by the consolidation of what are now separate studies within SPP's planning process. .

### **Potential impacts:**

- Increased efficiency in transmission investment by considering more holistic approach to project selection by accounting for multiple project drivers.
- Creating added "competition" within SPP's planning process to ensure a high level of decision quality related to transmission investment.

## DQ5. Sensitivity analysis and benefit metrics

**Recommendation:** SPP should assess and implement changes to when and how sensitivity assumptions and benefit metrics are set and used during the planning process.

### **Overview:**

Sensitivity analysis is a great way to add additional decision quality to SPP's planning processes. The development, timing, and application of these sensitivities should be reviewed to ensure the greatest amount of decision quality is being realized. Staff should also review the development, timing, and application of benefit metrics as a way to measure potential transmission projects

The SCRIPT recommends that SPP implement a process to determine specifics of sensitivity assumptions during development of modeling assumptions and futures development, consider performing initial sensitivity analysis as part of needs assessment to flag needs before posting and test transmission projects individually and as groups on sensitivity models during portfolio development before portfolio selections being made.

SPP should also research additional benefit metrics and assess the value added by potentially bringing more metrics into project selection. This could be done by engaging more third party industry experts and engaging other RTOs/ISOs and understanding their practices.

### **Action:** Assess

The TWG should assess and recommend changes to when and how sensitivity assumptions are developed and applied and the ESWG should assess and recommend changes to how benefit metrics are set and used during the planning process.

### **Assignments:**

Lead group:	TWG, ESWG
Secondary groups:	SPP Staff
Goals:	Implemented by the next planning cycle subsequent to consolidated process completion.

**Intersection with other processes or issues:** Given the large intersection between sensitivity analysis, benefit metrics, and the potential changes within the SCRIPT consolidated process, this recommendation will need to be addressed after the consolidated process if finalized.

### **Potential impacts:**

- Increased impact of sensitivity analysis resulting in greater quality and a higher degree of confidence in transmission investment decisions.
- Increased impact of benefit metrics resulting in greater quality and a higher degree of confidence in transmission investment decisions.

## DQ6. Consolidated planning process and schedule

**Recommendation:** SPP should ensure the Decision Quality Framework is built into the study process and schedule structure of the new consolidated planning process.

### **Overview:**

The expectation of a timely response could be viewed as a challenge to decision quality as it relates to time, resource and schedule constraints, but it is an important factor for ensuring decision quality in transmission investment decisions. If SPP's transmission planning processes are not yielding timely results, it can impact the quality of those decisions.

For example, study models are developed based on the most recent data and information available at the time of the model build. If timely decisions are not made, the data used to form those decisions becomes less and less accurate between the time of the model build and the conclusion of the study.

### **Action:** Assess

SPP staff should ensure the Decision Quality Framework is built into the structure of the new consolidated planning process. Decisions that are made involving transmission planning investment are of a magnitude that justifies utilizing the full decision quality process:

- Appropriate Frame
- Creative Alternatives
- Relevant and Reliable Information
- Clear Values and trade-offs
- Sound Reasoning
- Commitment to Action

### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG, ESWG, SAC (Joint Studies)
Goals:	Ensure the SCRIPT consolidated process and other changes to the SPP planning process include a decision quality framework.

**Intersection with other processes or issues:** Ensuring the presence of a decision quality framework should be done in parallel with the finalization of the SCRIPT consolidated process and other changes to the SPP planning process.

### **Potential impacts:**

- Greater stakeholder confidence
- Improved ease of decision making related to SPP's transmission investments

## DQ7. Presentation of study results

**Recommendation:** SPP should improve transparency, coordination and decision making at the end of the transmission planning process.

### **Overview:**

One of the main ways SPP staff gauge success is stakeholder consensus, including opinion on SPP's transmission planning processes and investment recommendations. SPP has an opportunity to improve by ensuring a high level of decision quality.

Staff should ensure engagement with decision makers and practices related to study approvals is actually adding decision quality. Many key transmission planning decisions are made at the working group level. SPP should ensure adequate coordination between TWG and ESWG members with their MOPC representation to ensure a smooth flow of information. . .

This could be accomplished by engaging decision makers earlier in the study process before key decisions are "fully baked." The Decision Quality process refers to this as the decision dialogue process. SPP's Transmission Planning summit has been utilized to provide updates and information. Changing the focus of these meetings could allow decision makers who cannot regularly participate in working groups an opportunity to engage in high priority decisions.

### **Action:** Implement

SPP Staff should improve the current structure and practices related to gaining approval of SPP's various transmission planning studies. An improved process should:

- Corroborate the shared responsibility of transmission planning investment decision making with the stakeholders on SPP's planning working groups (TWG and ESWG) and their MOPC representation.
- Increase the level of transparency of SPP's study processes and reduce the debate around transmission investment decisions to the decision makers (MOPC and BOD).
- Refocus SPP's Transmission Planning Summits, which are a requirement of the tariff, to be a forum for discussion on key decision points throughout SPP's planning processes.

### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	TWG, ESWG, MOPC, BOD
Goals:	Initial changes implemented by the end of the 2022 ITP or SCRIPT consolidated process. This is currently an ongoing continuous effort.

### **Potential impacts:**

- Increased transparency of SPP's study processes to aid decision makers.
- Greater stakeholder confidence and ease of decision making

## DQ8. Objective analysis

***Recommendation:*** SPP should implement more objective analysis into making key decisions that benefit the SPP region and balance individual decision bias and policies.

### **Overview:**

SPP staff should not attempt to remove all individual preference or bias from the stakeholder process: bias is inherent given SPP's diverse stakeholder body and discussion on differing points of view can add to decision quality.

However, SPP's staff and board of directors should continue to ensure their independence and focus on making decisions that bring the most benefit to the entire SPP region.

### **Action:** Implement

SPP staff should implement more objective analysis into making key decisions. Any process changes should:

- Ensure stakeholder debate adds decision quality
- Ensure debate is appropriate given the decision at hand.
- Create a more active role for staff to develop and propose policy recommendations.

### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	SPP BOD
Goals:	Initial changes implemented by the end of the 2022 ITP or SCRIPT consolidated process. This is currently an ongoing continuous effort.

### **Potential impacts:**

- Greater stakeholder confidence
- Increased ease of decision making related to SPP's transmission investments

## TRANSFERS RECOMMENDATIONS

The SCRIPT Interregional Transfers sub-team focused its activities on ways to optimize the current transmission system and to incentivize the development of additional transmission capacity necessary to facilitate generation transfers into and out of the SPP region.

This would result in benefits to generation providers through the increased market access for generation resources. This would also have the potential to benefit load-serving entities by decreasing regional and zonal transmission costs by increasing the pool of beneficiaries considered for cost allocation. The sub-team recommends approaching the issue through four categories of activities:

1. Interregional transmission pricing and rate design;
2. Interregional planning and cost allocation;
3. Interregional governance;
4. Interregional market design.

**The SCRIPT will develop policy recommendations that result in the development of transmission capacity needed to facilitate generation transfers that will provide future benefits to the SPP region.**

Interregional transfers could be either imports into the SPP region or exports out of the SPP region. Increased interregional transfers have the potential to:

- Reduce regional and/or zonal costs by increasing load (and/or other beneficiaries) considered for cost allocation: Increasing the group of entities considered to be beneficiaries of new transmission projects increases the portion of costs to build, maintain, and operate the transmission system that can be shared in proportion to those benefits received. Furthermore, additional point-to-point revenues for exports decrease transmission costs for loads that take Network Integrated Transmission Service under the SPP Tariff.
- Expand market access for and utilization of cost-efficient resources, especially renewable resources: By enhancing the capability for interregional transfers through optimizing the current transmission system and through the development of new transmission facilities, resources within the SPP region, especially wind resources, may be more marketable to load-serving entities external to the SPP region. Enhancing the capability for interregional transfers could also increase the ability of load-serving entities to import other types of generation, such as solar.
- Improve optimization of assets across multiple regions: Increasing the capability for interregional transfers, through optimizing the current transmission system and through the development of new transmission facilities, could provide benefit to the SPP region through the ability to co-optimize dispatch across multiple regions. Another benefit would be improved fuel diversity across multiple markets and geographic regions.

- Improve access to energy storage during times of excess generation: With the continued development of renewable resources in the SPP region and the increased development of energy storage facilities across the nation, increasing the capability for interregional transfers improves access to energy storage facilities during times of excess generation so the renewable generation may be stored and be used when needed instead of driving market prices negative.
- Optimize the existing transmission system: In addition to building up and enhancing the transmission system, SPP should consider options that provide operational benefits by optimizing existing transmission system. Reducing administrative hurdles in the operations horizon to optimize the existing transmission system increases the likelihood that the expected benefits of new investments in the transmission system are realized throughout the useful life of the new facilities.

## Challenges

Some of the limitations or issues that prevent an increase in interregional transfers include:

- Differing utility/state/political interests: The diverse interests that different utilities have to meet local, state, regional, and national requirements and standards, which are varied themselves, makes the success of efforts to coordinate and align benefits more difficult. For example, entities that desire access to wind and solar energy have a preference to source that energy locally rather than from outside their area.
- Cost of building up the transmission system to facilitate transfers and allocation of those costs: In general, local load bears the costs of new transmission projects to improve the reliability of the transmission system or to promote economic transfers. However, those local loads may not receive proportional benefit when new transmission projects are constructed to increase interregional transfers. Providing information to demonstrate the benefits of projects and effectively communicating those benefits to the beneficiaries will be especially important to ensure buy-in from the parties involved.
- Seams issues: There are several seams issues that may limit the amount of interregional transfers that occur today as well as the interest in building new facilities to increase the amount of transfers in the future. For example, rate pancaking, or the requirement to pay rates under multiple tariffs to facilitate an interregional transfer, increases the costs an external customer must pay to arrange for an export transaction from the SPP region. Furthermore, different modeling assumptions, benefit metrics, and cost allocation methods used for seams needs in interregional planning result in obstacles that must be overcome before interregional projects can be approved and constructed. Resolving these seams issues require cooperation from non-SPP parties.
- Physical facility limitations (DC ties limit transfers to the Western Interconnection or ERCOT): The SPP region is bound to the West and South by several Direct Current (DC) ties that electrically separate the Eastern Interconnection from the Western



Interconnection and the Electric Reliability Council of Texas (“ERCOT”) Interconnection. These DC ties have finite transfer capability and are extremely expensive to build and upgrade.

- Inability to receive adequate congestion hedges: The limited ability for some customers to receive congestion hedges for interregional transfer transactions is a barrier to those transfers and to investments in new facilities to facilitate additional transfers.

## Analysis

The SCRIPT examined multiple ideas to encourage an increase in interregional transfers including coordination between regional markets, alternative cost allocation methodologies for inter-zonal transmission projects, rate pancaking and other barriers to transfers. The SCRIPT also assessed ideas to improve markets for excess renewable generation, interregional planning, and alignment of regional future assumptions. The team evaluated congestion hedges for purchasers of transmission service to facilitate transfers, opportunities for federal funding of interregional transmission expansion and opportunities to develop joint interactive RTO forums to engage customers across regions.

The SCRIPT examined potential challenges to any Transfers recommendations including political and regulatory hurdles, limitations of technical capability, conflicts between regional plans and federal overlay or similar plans, and the potential that increased transfers would not provide the benefits expected.

It should be noted that the SCRIPT considered one or more recommendations to resolve issues where customers with confirmed long-term firm transmission service are able to receive candidate Auction Revenue Rights (cARR), but those rights do not always result in subsequent Transmission Congestion Rights (TCR). To put it simply, even though a customer purchases long-term transmission service, which may result in directly assigned upgrade costs, that customer may not be fully protected from the costs of congestion associated with the implementation of that transaction in the day-ahead and real-time markets. That could be a deterrent to some customers looking to engage in transactions that might result in an increase to interregional transfers. Potential resolutions to this congestion hedging improvements issue are already being discussed and developed through the work of the Holistic Integrated Tariff Team (HITT) Marketplace Enhancement Recommendation #1(M1)<sup>7</sup>. To prevent duplicating efforts, the SCRIPT defers making recommendations on improvements to congestion hedging processes and mechanisms but advises the HITT M1 Advisory Team to also consider the adequacy of congestion hedges when arranging for interregional transfers.

## Recommendations:

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<sup>7</sup> Holistic Integrated Tariff Team Report: <https://www.spp.org/documents/60372/hitt%20report%2020190730.pdf>

The SCRIPT identified the following nine recommendations to improve interregional planning and transmission processes, which are grouped under four major categories:

- **Interregional transmission pricing/rate design**
  - T1. Resolve rate pancaking issues
- **Interregional planning and cost allocation**
  - T2. Improve practices related to persistent operational issues in the planning processes.
  - T3. Acknowledge differences in reliability planning processes across regions.
  - T4. Develop tariff mechanism for regional cost allocation of seams projects
  - T5. Assess benefits of projects under consideration without hurdle rates
  - T6. Evaluate enhancements to benefit metrics and cost allocation for projects that increase interregional transfer capability.
- **Interregional governance**
  - T7. Advocate for an interregional consortium of RTOs and/or Customers/Market Participants that supports consistent rules across different regions.
- **Interregional market design**
  - T8. Evaluate the benefits of improved interregional market design

## T1. Rate pancaking

***Recommendation:** SPP should evaluate the options for resolving rate pancaking issues, including new classes of transmission service rates and modification of through and out rates.*

### **Overview:**

Rate pancaking occurs when a single transfer path from the generating resource to the load requires the transmission customer to incur charges from multiple transmission providers because the affected facilities are under different transmission tariffs. To the extent the SCRIPT initiative addressing interregional transfers results in proposed changes, it may be appropriate to consider whether the cost-sharing proposals should include the reduction or elimination of rate pancaking between regions.

However, this can be difficult to achieve because of the likelihood of some degree of rate impact in addition to the obvious necessity for interregional coordination. Short-term rate discounting also can be used to mitigate the effects of pancaked rates. In considering either short-term discounting for interregional transactions or long-term rate adjustments to mitigate pancaking, the price elasticity of the affected service is a key consideration. Such consideration is a requirement under the discounting provisions of Schedule 8, which states that the “goal shall be to maximize transmission revenues.”

The SCRIPT recommends that SPP develop a new class of transmission service rates that could apply to transmission service associated with facilities, existing or new, that are used to facilitate interregional transfers. For example, an interregional transmission pricing agreement could be negotiated with neighboring regions that would set rates, terms, and conditions that might apply to transfers between the SPP region and the other regions.

This could result in a new rate schedule under the SPP Tariff, as well as the tariffs of other applicable transmission providers, that would apply to interregional transactions and could ultimately lead to a mechanism to facilitate a partial or complete de-pancake of rates across multiple regions. This proposal would likely result in cost shifts between transmission owners in the applicable regions.

Alternatively, a transmission service “adder” could be added to the LMPs of interface Settlement Locations in lieu of a transmission service rate, resulting in a market-based charge for transmission service.

The SCRIPT also recommends that SPP perform an analysis on discounting or removing through and out rates. SPP could perform an analysis of the potential for increased requests for transfers as a result of different discounts to through and out transmission service, or the removal of through and out rates altogether.

Since price spreads between the SPP market and other markets currently drive the transfer market activities, a discount ratio that is proportional to the price differentials between SPP and

external markets (discount increases as price spread increases) could be a mechanism to encourage market activities. SPP staff should also perform an analysis of the costs and benefits of different options for discounting through and out transmission service.

**Action:** Develop / Assess

SPP Staff, in coordination with the efforts of the SPP RSC/OMS Seams Liaison Committee<sup>8</sup>, to evaluate the options for, and impacts of, resolving rate pancaking issues, including but not limited to:

- Developing a new class of transmission service rates that could apply to transmission service associated with facilities, existing or new, that are used to facilitate interregional transfers, and
- Performing an analysis on discounting or removing through and out rates, and
- Performing an analysis of the costs and benefits of different options for discounting through and out transmission service
- Resolving issues related to transmission service along the seams and application of unreserved use provisions.

**Assignments:**

Lead group: RSC/OMS Seams Liaison Committee, RSC, CAWG  
 Secondary groups: SPP Staff RTWG, MWG  
 Goals: List of potential options developed three months after completion of work  
 by SPP RSC/OMS Seams Liaison Committee

**Intersection with other processes or issues:** This proposal should be addressed in coordination with the SPP RSC/OMS Seams Liaison Committee as they work to address rate pancaking issues along the SPP-MISO seam.

**Potential impacts:**

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<sup>8</sup> The SLC has recommended the creation of a working group focused on inventorying different types of rate pancaking along the SPP/MISO Seam and requests that MISO and SPP conduct a survey of transmission owners and other stakeholders to measure interest in studying rate pancaking issues. The working group should report to the SLC using existing staff, hold open meetings, and provide updates to the SLC on a quarterly basis. The working group should be defined as the RSC and OMS Commissioners that desire to participate plus an equal number of other stakeholders to be chosen by the RSC and OMS.

## T2. Persistent operational issues

*Recommendation:* SPP should improve practices related to persistent operational issues in regional and interregional planning processes.

### **Overview:**

The SPP ITP [process](#) allows for needs that persistently occur in real time operations (“persistent operational needs”) to be considered even when those issues do not materialize in the forward-looking planning models. There is no existing joint operating agreement mechanism to consider persistent operational needs in the interregional planning processes, although the regions can agree to analyze specific target areas using models that are different from the normal regional planning models.

This proposal would pursue including the assessment of persistent operational needs and evaluation of solutions to address those persistent operational needs. One significant roadblock to including persistent operational needs in planning processes, whether regional or interregional, is software limitations for assessing the benefits of a potential solution for a need that does not inherently exist in the applicable planning models without some scenario specific model adjustments.

In other words, the models must be adjusted to replicate real-time conditions and those adjustments may result in calculated benefits that are inconsistent with solutions being evaluated for other needs that do result from the unaltered planning models.

**Action:** Implement

SPP Staff, working through the EWSG and the TWG and in consultation with the SAG, should improve practices related to persistent operational issues in the regional and interregional planning processes.

### **Assignments:**

Lead groups:	ESWG, TWG
Secondary groups:	SAG, SPP Staff
Goals:	Solutions implemented by <span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 50px; height: 15px;"></span>

### **Intersection with other processes or issues:**

- 

### **Potential impacts:**

-

### T3. Differences in regional reliability planning processes

***Recommendation:** SPP should identify differences in reliability planning processes across regions, provide a report to MOPC and receive stakeholder direction on any steps to address differences.*

**Overview:**

The SPP reliability planning process can be considered “top-down” because the assessment of reliability needs is generally performed from a regional level through the ITP process. The MISO reliability planning process is considered “bottom-up” because the assessment of reliability needs generally occurs from the local transmission owner level and any projects needed to address reliability issues would be submitted to the MISO MTEP process. This results in an incongruent interregional planning process for reliability needs, mostly due to timing of when the assessments of needs are performed. As the SCRIPT is evaluating improvements to the integration of the entirety of the SPP regional reliability and economic transmission planning processes, we should also take into account the issues as it relates to interregional planning.

**Action:** Assess

SPP staff should examine the extent of the differences in reliability planning processes across the SPP and MISO regions and report to the MOPC (or SCRIPT if this will be a longer-term effort) for stakeholder direction on next steps to address, or not address, the differences.

SPP staff should also examine the extent of the differences in other planning processes, such as generator interconnection and transmission service, across the SPP and MISO regions.

**Assignments:**

Lead group:	TWG
Secondary groups:	SPP Staff, MOPC
Goals:	Report to MOPC by October 2022 cycle

**Intersection with other processes or issues:**

- 

**Potential impacts:**

-

## T4. Regional cost allocation of seams projects

**Recommendation:** SPP should develop a tariff mechanism for regional cost allocation of seams projects that do not otherwise qualify as Interregional Projects under the Tariff.

### **Overview:**

In 2015, SPP filed tariff revisions with FERC to create a Seams Transmission Project category and associated regional cost allocation.<sup>9</sup> The filing was intended to address the lack of a mechanism under the SPP Tariff to regionally allocate costs of a project for which costs have been agreed to be shared between SPP and a neighbor but that did not qualify as an Interregional Project<sup>10</sup> under the SPP Tariff.

The revision was rejected by the Commission, but the letter order rejecting the filing left the door open for the revisions to be refiled in the event that SPP could provide a more robust justification for why the new category of project would be necessary. SPP and its neighbors have yet to approve an Interregional Project, though a project which would have been considered a "Seams Transmission Project," the Morgan Transformer Project, was approved in 2018.

Expanding the ability to regionally cost allocate shared projects that may not qualify under the SPP Tariff as Interregional Projects could result in an increase to interregional transfers.

**Action:** Develop and Implement

SPP staff should pursue a Revision Request that would result in refiled the proposed revisions of the SPP Tariff, in whole or in part, including the regional cost allocation principles described in the Seams Projects Policy Paper that was approved in 2017.

### **Assignments:**

Lead group: TWG, RSC, CAWG and RTWG  
 Secondary groups: SAG  
 Goals: Revision Request developed by April 2022

**Intersection with other processes or issues:** N/A

**Potential impacts:** Increase to interregional transfers.

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<sup>9</sup> FERC Docket ER15-2705

<sup>10</sup> Interregional Project: A Network Upgrade that has been approved through the Interregional Planning Process in accordance with Attachment O.

## T5. Hurdle rates

**Recommendation:** SPP should assess benefits of projects under consideration without hurdle rates.

### **Overview:**

Co-optimizing generation dispatch across multiple regions would likely result in an increase in interregional transfers. It may be possible for the SPP Integrated Transmission Planning processes to simulate the co-optimization across regions by performing a sensitivity analysis for a potential project with no hurdle rates. There is very little risk to this sort of analysis since it would, initially at least, be considered informational only and not necessarily be a significant factor when considering whether or not to approve a recommended project.

**Action:** Assess/Evaluate

SPP Staff, working through the Economic Studies Working Group, should consider and evaluate a revision to the ITP Manual to include an assessment of benefits with \$0 hurdle rates for individual projects or groups of projects that may increase interregional transfers.

### **Assignments:**

Lead group: ESWG, TWG  
 Secondary groups: SPP Staff  
 Goals: Proposal provided to ESWG by [REDACTED]

### **Intersection with other processes or issues:**

- [REDACTED]

### **Potential impacts:**

- [REDACTED]



## T6. Benefit metrics and cost allocation

**Recommendation:** SPP should evaluate enhancements to benefit metrics and cost allocation for projects that increase interregional transfer capability.

### **Overview:**

The benefits of increasing the capacity to transfer energy between SPP and neighboring regions include the improved ability to assist and receive assistance during energy emergencies and other extreme events. SPP was importing an unprecedented amount of energy during the February 2021 winter storm, even when compared with previous emergency conditions.

There could be an opportunity for enhanced benefit metrics to be contemplated in the SPP regional and interregional processes in consideration of protecting load during energy emergencies and other extreme events. This recommendation from the SCRIPT aligns with recommendations TXP 1 and TXP 2 from the Comprehensive Review of SPP's Response to the February 2021 Winter Storm<sup>11</sup>.

**Action:** Evaluate

The ESWG, TWG, and CAWG should evaluate enhancements to economic or reliability benefit metrics as well as evaluate regional and interregional cost allocation mechanisms for projects that increase interregional transfer capability. .

### **Assignments:**

Lead group: TWG  
 Secondary groups: ESWG, CAWG, SPP Staff  
 Goals: Proposal provided to ESWG by [REDACTED]

### **Intersection with other processes or issues:**

- [REDACTED]

### **Potential impacts:**

- [REDACTED]

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<sup>11</sup> Comprehensive Review of SPP's Response to the February 2021 Winter Storm:  
<https://www.spp.org/documents/65037/comprehensive%20review%20of%20spp's%20response%20to%20the%20feb.%202021%20winter%20storm%202021%2007%2019.pdf>

## \*T7. Interregional governance

**Recommendation:** SPP should advocate for an interregional consortium of RTOs and/or customers and market participants to support consistent rules across different regions.

### **Overview:**

An industrywide group of entities with shared interests could be a powerful tool for soliciting changes across multiple regions. This proposal would be to coordinate and facilitate formal, or informal, discussions in an interconnection-wide or nationwide forum. The goal of this large group would be to discuss challenges and opportunities that the industry experiences today and in the future and attempt to more proactively address those issues in a way that is beneficial for the system as a whole and not just beneficial for a particular area or region.

There are differences, some minor and some significant, in the ways that each region plans and operates its portion of the Bulk Electric System. These differences result in issues with coordination between regions, such as dissimilar planning study timelines or dependencies on each other's processes. Advocating for consistent rules across regions would improve coordination, timelines and results. However, without broad support from impacted entities, consistency is a lofty goal.

### **Action:** Implement

SPP staff should collaborate with stakeholders, including but not limited to the SPP RSC/OMS Seams Liaison Committee, MWG, SAG, ESWG, and TWG to advocate for a collaboration forum for stakeholders of multiple RTOs (i.e. MISO-PJM Joint and Common Market group) that can support the alignment and development of consistent rules across different regions.

### **Assignments:**

Lead group:	SPP Staff
Secondary groups:	SPP RSC/OMS Seams Liaison Committee, MWG, SAG, ESWG, TWG
Goals:	Report progress to MOPC quarterly, beginning July 2022

### **Intersection with other processes or issues:**

- 

### **Potential impacts:**

-

## T8. Interregional market design

**Recommendation:** SPP should evaluate the benefits of improved interregional market design, including mechanisms for energy portability and co-optimized markets.

### **Overview:**

Current rules do not allow for a resource to simultaneously participate in multiple markets. Because market-wide dispatching of resources is built on the premise that every megawatt (MW) of dispatchable capability is available to that market to serve its load and net scheduled export obligations, the same MW of resource capability is not allowed to be registered in more than one market, except for resources that are capable of switching between interconnections.

A market design that allowed a resource to be offered into multiple markets simultaneously – supplying capacity or energy where it is most needed – could increase interregional transfers. To successfully implement such a proposal, significant concerns about the responsibility of Balancing Authorities to balance generation and load would need to be addressed.

A single, co-optimized day-ahead market for SPP and MISO would result in the most optimal reliability and economic commitment of resources across multiple regions to serve load bid into the aggregate of the SPP and MISO day-ahead markets.

A co-optimized real-time market dispatch for SPP and neighboring markets would result in the most optimal reliability and economic dispatch of resources across multiple regions, including MISO and/or across Interconnections through DC ties, to serve aggregate real-time load.

**Action:** Assess/Evaluate

The Market Working Group, with the support of SPP staff, should evaluate the benefits of improved interregional market design, including but not limited to:

- Developing a mechanism to allow for energy portability
- Developing a single, co-optimized SPP and MISO day-ahead market
- Developing a Co-optimized SPP and neighboring market real-time market dispatch

### **Assignments:**

Lead group:	MWG
Secondary groups:	SPP Staff, MISO
Goals:	Develop enhancement request proposals to be included in Q2 2022 Stakeholder Prioritization Process <sup>12</sup>

**Intersection with other processes or issues:** These proposals require significant coordination with third parties and their stakeholders.

<sup>12</sup> Stakeholder Prioritization Process: <https://www.spp.org/stakeholder-center/stakeholder-prioritization/>

## COST SHARING RECOMMENDATIONS

In conjunction with the SCRIPT's effort to review and revise the SPP transmission planning processes, the SCRIPT considered whether changes in cost sharing mechanisms under the SPP Tariff should be implemented in a manner consistent with a revised planning process. The Holistic Integrated Tariff Team (HITT) made several proposals related to cost allocation, some of which are still under consideration by stakeholders. Rather than attempting to revisit issues that already have been discussed by the HITT and remain under stakeholder review, this new effort related to cost responsibility was grounded on the fundamental purpose of the SCRIPT effort, which is reform of the planning processes.

Any consolidation of such processes is likely to require assessment of the implications for rates and cost allocation, with corresponding adjustments in cost responsibility for the upgrades that result from the new or modified planning. At the same time, customers may retain the option of using separate generator interconnection and transmission service study processes even with consolidated planning, in which case cost allocation must continue to address upgrades resulting from those separate studies

The goal of the cost sharing initiative under the SCRIPT was to “develop policy recommendations that result in improved cost sharing among users of the transmission system that appropriately recognizes causers and beneficiaries of transmission investment decisions.”

Recovery of transmission facility costs under the SPP Open Access Transmission Tariff (SPP Tariff) has evolved over the past 20 years. Most of that development occurred in the period from 2004 to 2010 when regional cost allocation was first developed and approved and then further enhanced and revised in several stages. Although some incremental changes affecting cost allocation have occurred since 2010 and substantive changes recommended by the HITT are currently under review, a major alteration of the cost allocation framework has not been placed into the SPP Tariff during the past 10 years.

The SCRIPT generated ideas to address cost sharing and examined current allocation and rate treatment of transmission facility costs under the SPP Tariff as well as key cost allocation methods applied under the tariffs of other regional transmission organizations.

The SCRIPT followed seven guidelines as it developed its cost sharing proposals:

1. Link transmission facility cost sharing with benefits and/or causation, while attempting to keep the methodologies relatively simple, understandable and predictable.
2. Apply broad definitions of benefits and causation, including benefits that may not be quantified.
3. Consider potential for unintended consequences, including effects of future system topology and resource mix.
4. Utilize and adapt cost allocation methods from the current SPP Tariff where feasible.
5. Address cost allocation for the repair and replacement of facilities.

6. Consider necessity of FERC approval, such as providing for cost allocation to be roughly commensurate with expected benefits.
7. Account for Regional State Committee review and approval before submittal of new cost sharing proposals to FERC.

## Recommendations

After analysis of challenges and potential solutions to the cost allocation issues, the SCRIPT arrived at five cost sharing recommendations for RSC and board of directors consideration. Each of these proposals were not necessarily supported by all members of the SCRIPT, but generally represent majority recommendations:

- **CS1. Cost Sharing for an Upgrade that Meets Multiple Needs**
- **CS2. Balanced Portfolio Simplification or Elimination**
- **CS3. Load Ratio Share with Annual Energy**
- **CS4. Repair and Replacement of Facilities**
- **CS5. Cost Sharing for an Upgrade that Requires Joint Funding**

In developing these five recommendations, the SCRIPT also applied two underlying principles: (1) the changes to cost sharing that result from these recommendations should apply only to future transmission system upgrades; and (2) the role of economic and reliability metrics in allocating Base Plan Upgrade costs under Schedule 11 rates should not be significantly expanded in order to accommodate consolidated planning.

These two principles are reflected in the five cost sharing recommendations. Other than the potential application of benefit metrics in a simplified Balanced Portfolio method or in determining certain types of direct assignment within a consolidated planning framework, such metrics are not incorporated directly in these recommendations from the SCRIPT.

## CS1. Cost sharing for an upgrade that meets multiple needs

**Recommendation:** For projects approved for construction under a consolidated planning process, SPP should apply the highway-byway methodology to the portion of cost that receives Base Plan funding. If an approved project provides transmission and/or generator interconnection service, the cost may be fully or partially assigned to the customer(s) under methodologies adapted to a consolidated planning framework.

### **Overview:**

Upgrades approved for construction through consolidated planning may address multiple needs and result in the identification of a broader array of benefits than upgrades under current planning processes. For example, an upgrade may provide for transmission service and/or generator interconnection service as well as meet other reliability or economic needs. These broader benefits may further support the potential alignment of potential Capacity Resource Interconnection Service deliverability areas and larger Schedule 11 transmission pricing zones for future upgrades, both of which are under consideration by SPP stakeholders as a result of the HITT's recommendations.

The Base Plan funded portion of cost for projects resulting from consolidated planning should be allocated in accordance with the highway-byway methodology. If an approved project provides transmission service and/or generator interconnection service, a portion of the cost may be directly assigned to the customer(s) under the methodologies in Attachments J and Z1 and/or Attachment V, as applicable, but with adjustments to accommodate the multiple needs met through consolidated planning. Determination of the amount of cost to be directly assigned can be based on the least cost solution necessary to provide the requested service even if such solution is not actually constructed.

### **Action:**

The RSC and CAWG, in collaboration with the TWG and ESWG, should develop a policy for determining the portions of cost to be included in Schedule 11 rates and to be directly assigned for future projects approved through consolidated planning.

### **Assignments:**

Lead group:	RSC, CAWG
Secondary groups:	TWG, ESWG, GIUF, RTWG
Goals:	Solutions implemented by <span style="background-color: yellow;">          </span>

### **Intersection with other processes or issues:**

- C4. Implement a consolidated planning process
- CS5. Cost sharing for an upgrade that requires joint funding

### **Potential impacts:**

## CS2. Balanced Portfolio simplification or elimination

***Recommendation:** SPP should develop a simplified methodology for the Balanced Portfolio cost allocation for future upgrades, or eliminate this function if the methodology is not simplified.*

### **Overview:**

The Tariff’s Balanced Portfolio provisions have not been applied for over 10 years in the SPP planning process. This approach to planning and cost allocation has resulted in some difficulty and controversy related to complexity, problems in reallocating zonal costs to the regional charge, and lack of certainty in projecting benefits over the cost reallocation horizon. Given the likelihood that the Balanced Portfolio will not be utilized again in its present form, the SCRIPT recommendation is to either simplify it for the purpose of making it more usable or eliminate it from the Tariff.

One approach to simplification would be to remove the ATRR reallocation mechanism and instead provide for allocation of the cost of a portfolio of upgrades to only those zones with quantified benefits. Allocating costs only to benefiting zones could make the planning and formation of a portfolio less challenging. It also would avoid the complexity and controversial aspects of reallocating zonal costs to the region.

Like the current Balanced Portfolio process, the revised allocation framework could be supplemental to, rather than a replacement of, other cost allocation methods. Among other issues, consideration should be given to an appropriate zonal benefit-cost threshold for the portfolio (i.e., whether the threshold should exceed 1.0) and the decision and approval processes through which new portfolios would be established.

### **Action:**

The RSC and CAWG, in collaboration with the TWG and ESWG, should evaluate whether to recommend a simplified methodology for Balanced Portfolio cost allocation for future upgrades, or alternatively, whether to recommend removal of the Balanced Portfolio provisions from the Tariff.

### **Assignments:**

Lead group: RSC, CAWG  
 Secondary groups: TWG, ESWG  
 Goals: Solutions implemented by [redacted]

### **Intersection with other processes or issues:** [redacted]

### **Potential impacts:** [redacted]

### CS3. Load ratio share with annual energy

***Recommendation:** SPP should evaluate the use of prior year annual energy in combination with average coincident peak demand to determine composite load ratio shares for calculating network transmission service charges for future upgrades.*

#### **Overview:**

Average monthly coincident peak demand (in megawatts) has been the standard approach for billing transmission service under FERC-approved rates for many years and remains the most common form of billing determinants used by transmission providers, including RTOs and ISOs. However, some transmission providers utilize energy (megawatt-hours or MWh) to some extent as a billing determinant for their transmission charges. .

The common use of peak demands as a basis for transmission charges is related to the need to size the transmission system in order to serve loads when they reach maximum levels. Unlike other elements of utility rate base, such as generating assets, the amount of necessary transmission investment does not tend to be driven by the number of hours of usage but rather by the necessity to serve peak demand reliably by providing capacity on the system. In addition, the use of maximum demand for transmission service charges can provide an incentive for peak shaving when needed.

Billing for usage of the system with an energy billing determinant is more supportable in cases where the transmission system is utilized by an entity without reserving capacity. In connection with this, reliability upgrades could be allocated under a peak demand billing determinant, as they are currently, but upgrades for market congestion relief could be allocated under either an energy billing determinant or a measure of market benefit. An energy billing determinant could be administered on a load ratio share basis similarly to the current use of average coincident peak demand. For example, network customers could pay a charge tied to their percentage of energy use in the zone or in the region during the prior calendar year. Calculating the load ratio share in this manner is equivalent to basing the ratio on average hourly load. .

An approach that should be evaluated for determining load ratio shares for network transmission service billing is calculation of the load ratios using both annual energy and average monthly coincident peak demand. Weighting these two billing determinants together would reflect the fact that while some upgrades are planned primarily to address economic needs and others are planned primarily to address reliability needs, most transmission facilities result in both economic and reliability benefits during actual operations. For example, a customer with a 12% annual energy ratio and an 11% average coincident peak demand ratio would have a composite load ratio share of 11.25% if the weighting were determined to be 25% based on annual energy and 75% based on average peak demand. .

A principle underlying the SCRIPT's recommendations is that any cost sharing changes should apply only to new upgrades approved after the effective date of any requisite Tariff changes; therefore, composite load ratio shares would be applied only to costs of future upgrades under



Schedule 11. The SCRIPT does not have a recommendation regarding the specific weighting factors that should be applied. In determining the weighting, one consideration is the relative shares of engineering and construction cost or revenue requirement associated with upgrades that SPP has planned primarily for economic purposes and those that SPP has planned primarily for reliability purposes. Also, consideration can be given to the question of whether the weighting factors should vary based on whether the cost is zonal or regional.

If energy is used as a billing determinant component for network transmission service, then energy also should be evaluated as a billing determinant component for the corresponding cost category(ies) in billing point-to-point transmission service. For example, this could be tied to the amount of energy scheduled under each point-to-point reservation. .

Using annual energy together with coincident peaks in calculating load ratio shares to determine network transmission service charges for new upgrades under Schedule 11 would require a number of Tariff revisions. It also would require modifications of SPP’s settlement systems and stakeholders’ shadow settlement and reporting systems. Expanding the use of energy to the billing of point-to-point transmission service would necessitate further Tariff revisions and settlement system modifications. An assessment of these settlement system impacts is needed before a decision is made to utilize MWh for Schedule 11 billing of either network or point-to-point transmission service.

**Action:**

The RSC and CAWG, in collaboration with the RTWG, SPP staff and Settlement User’s Group, should evaluate the utilization of prior year annual MWh together with average coincident peak demand to determine composite load ratio shares for calculating network transmission service charges for future upgrades. If energy is used in billing network transmission service, then energy also should be evaluated as a billing determinant for the corresponding component of point-to-point transmission service rates. Settlement system impacts also need to be assessed in support of this evaluation. .

**Assignments:**

Lead group: RSC, CAWG  
 Secondary groups: RTWG, SUG, SPP Staff  
 Goals: Solutions implemented by

**Intersection with other processes or issues:**

**Potential impacts:**

## CS4. Repair and replacement of facilities

***Recommendation:** In support of the initiative to address aging infrastructure in Integrated Transmission Planning (SCRIPT O5), SPP should clarify cost allocation and rate treatment for the repair and/or replacement of transmission facilities resulting from that planning process.*

### **Overview:**

One area where the SPP Tariff lacks clarity is the cost allocation and rate treatment for the repair and/or replacement of transmission facilities. While routine maintenance is expensed by the Transmission Owner, which typically finds its way into the rates for any zonally and regionally allocated facilities owned by that Transmission Owner, the treatment of capital investment items is less clear. In many cases, there may be a working assumption that the capital necessary to repair or replace a facility will be cost-allocated in the same manner as the original investment. However, this is not stated explicitly in the Tariff.

There are related issues, such as the ambiguity in distinguishing between a repair or replacement of a facility and a material upgrade. Often a replacement facility has greater functionality than the original facility, which frequently results because of changes in industry standards and/or improvements in technology.

Repair and replacement facilities already is occurring under the Transmission Owners' current asset management processes. The SCRIPT initiative to address aging infrastructure through Integrated Transmission Planning provides both a need and an opportunity to further clarify the treatment of costs resulting from that activity.

### **Action:**

SPP staff should collaborate with the RSC, CAWG and TWG to clarify cost allocation and rate treatment for the repair and/or replacement of transmission facilities in conjunction with the SCRIPT's Aging Infrastructure initiative (O5).

### **Assignments:**

Lead group:	RSC, CAWG, SPP Staff
Secondary groups:	TWG, ESWG
Goals:	Solutions implemented by <span style="background-color: yellow;">          </span>

### **Intersection with other processes or issues:**

- O5: Aging Infrastructure

**Potential impacts:**

## CS5. Cost sharing for an upgrade that requires joint funding

**Recommendation:** SPP should establish a mechanism to fund an upgrade jointly through rates and direct assignment charges in situations where neither the benefit-cost assessment under Integrated Transmission Planning nor direct assignment is sufficient to fund the project alone.

### **Overview:**

Situations can arise in which a proposed upgrade is determined to have a benefit-cost ratio that is both: (1) too low for approval under the ITP, and (2) deemed to be cost-prohibitive by customers in a service study process (either generator interconnection or transmission service). However, that same upgrade would be supportable if jointly funded through partial allocation under rates and partial direct assignment to generator interconnection and/or transmission service customers. In this scenario, the project would be expected to have a net benefit in aggregate but lack of a mechanism to fund it jointly would result in loss of that benefit to the region.

In order to mitigate the potential loss of such benefit, a means to address this situation is needed in the Tariff's planning and cost allocation provisions. For cost allocation, one approach would be to provide that the portion of cost to be Base Plan funded through Schedule 11 rates would be determined as the allocated cost level consistent with a predetermined benefit-cost ratio for load in the SPP region. The SCRIPT recommends that the benefit-cost ratio for regional load should be somewhat higher than 1.0. The remaining cost necessary to fund the project would be recovered through direct assignment charges to generator interconnection and/or transmission service customers.

### **Action:**

The RSC and CAWG, in collaboration with the TWG and ESWG, should develop a policy for determining the portions of cost to be included in Schedule 11 rates and to be directly assigned for future projects when neither the benefit-cost assessment under ITP nor direct assignment is sufficient to fund the project alone. Additionally, the consolidated planning process would need to be structured in such a manner as to address such situations.

### **Assignments:**

Lead group:	RSC, CAWG
Secondary groups:	TWG, ESWG, GIUF, RTWG
Goals:	Solutions implemented by <span style="background-color: yellow;">          </span>















### **Intersection with other processes or issues:**








- C4. Implement a consolidated planning process
- CS1. Cost sharing for an upgrade that meets multiple needs

### **Potential impacts:**

# ACTION PLAN

Recommendation		Secondary	Goal
<b>SPP Staff</b>			
	<b>C3.1 Model data collection and review</b>	TWG, ESWG, MDAG, AQITF, TSUF & GIUF	
	<b>C3.2 Engineering Engine</b>	CUF, MDAG, TWG, ESWG, GIUF, TSUF	
	<b>C4.1 Select consolidated planning option</b>	TWG, ESWG, MDAG, AQITF, GIUF, TSUF	
	<b>C4.2 Consolidation implementation: Phase 1</b>	TWG, ESWG, MDAG, GIUF, TSUF, TPLTF	
	<b>C4.3 Consolidation implementation: Phase 2</b>	TWG, ESWG, MDAG, AQITF, GIUF, TSUF	
	<b>S1.1 Create new services pre-screening tools and information requirements</b>	TWG, AQITF, TSUF and GIUF	
	<b>S1.2. Implement new readiness criteria for GI</b>	TWG and GIUF	
	<b>S1.5 Implement policies for long-term TS requests in consolidated planning</b>	TWG and TSUF	
	<b>S1.6 Implement policies for delivery point addition (AQ) requests in consolidated planning</b>	AQITF, TWG and TSUF	
	<b>S1.7. Implement policies for provisional services in consolidated planning</b>	TWG, TSUF and GIUF	
	<b>S3. Number of TS products</b>	TWG and TSUF	
	<b>S4. GI backlog mitigation</b>	TWG and GIUF	
	<b>O2. Non-transmission expansion solutions</b>	ESRSC and TWG	
	<b>O3. Project value drivers</b>	TWG and ESWG	
	<b>O4. Holistic needs and solutions assessments</b>		
	<b>O5. Aging infrastructure</b>		
	<b>O6. SPP and MISO</b>	TWG, ESWG, GIUF, RSC and OMS	
	<b>DQ4. Solution development and submissions</b>	TWG, ESWG	
	<b>DQ6. Consolidated planning process &amp; schedule</b>	TWG, ESWG, SAC	
	<b>DQ7. Presentation of study results</b>	TWG, ESWG, MOPC & BOD	
	<b>DQ8. Objective analysis</b>	SPP BOD	

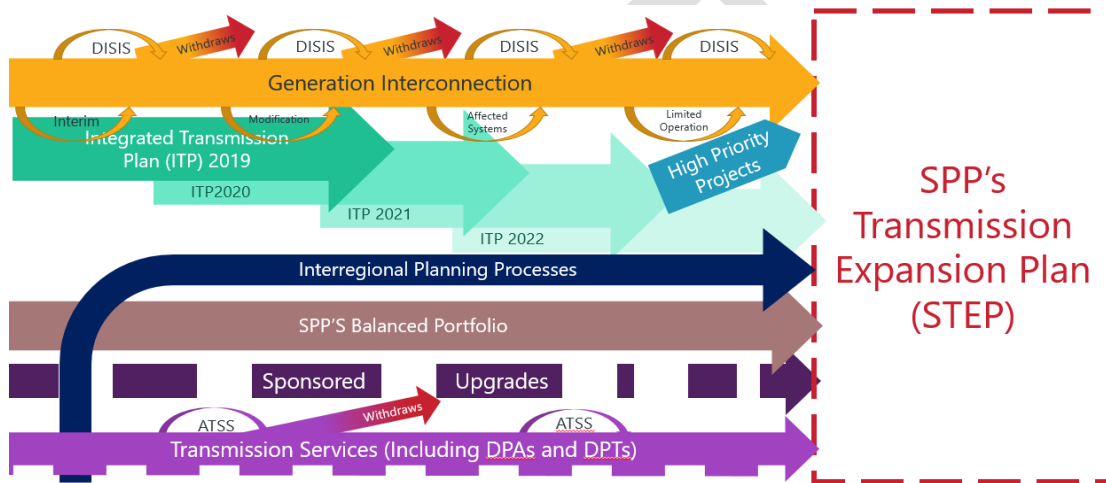
Recommendation		Secondary	Goal
<b>Markets and Operations Policy Committee (MOPC)</b>			
	<b>T3. Differences in regional reliability planning processes</b>	SPP Staff	
	<b>T4. Regional cost allocation of seams projects</b>	SPP Staff	
<b>Deliverability Steering Committee</b>			
	<b>S1.4. Use deliverability areas for GI requests as recommended by the NEDTF</b>	SPP Staff, TWG and GIUF	
<b>Economic Studies Working Group (ESWG)</b>			
	<b>DQ3. ITP futures</b>	TWG, MOPC, SPC, SPP Staff	
	<b>DQ5. Sensitivity analysis and benefit metrics</b>	TWG and SPP Staff	
	<b>T2. Persistent operational issues</b>	TWG, SAG, SPP Staff	
	<b>T5. Hurdle Rates</b>	SPP Staff	
	<b>T7. Benefit metrics and cost allocation</b>	TWG, CAWG, SPP Staff	
<b>Market Working Group (MWG)</b>			
	<b>T9. Interregional market design</b>	SPP Staff, MISO	
<b>Model Development Advisory Group (MDAG)</b>			
	<b>DQ1. Modeling data</b>	TWG ESWG & SPP Staff	
<b>Project Cost Working Group (PCWG)</b>			
	<b>DQ2. Cost estimation process</b>	SPP Staff	
<b>Regional State Committee (RSC)</b>			
	<b>CS1. Cost sharing for an upgrade that meets multiple needs</b>	CAWG, TWG and ESWG	
	<b>CS2. Balanced Portfolio simplification or elimination</b>	CAWG, TWG and ESWG	
	<b>CS3. Load ratio share with annual energy</b>	CAWG, RTWG, SUG and SPP Staff	

Recommendation		Secondary	Goal
	<b>CS4. Repair and replacement of facilities</b>	TWG, CAWG and ESWG	
	<b>CS5. Cost sharing for an upgrade that requires joint funding</b>	CAWG and TWG	
<b>RSC/OMS Seams Liaison Committee</b>			
	<b>T1. Rate pancaking</b>	SPP Staff	
	<b>T8. Interregional governance</b>	SPP Staff, MWG	
<b>Transmission Working Group (TWG)</b>			
	<b>C1. Common base model set</b>	ESWG, MDAG, AQITF, TSUF and GIUF	
	<b>C2. High priority study planning assessment</b>	ESWG	
	<b>S2. General Improvements to administrative and technical procedures</b>	TSUF, GIUF and MDAG	
	<b>O1. ATC calculation and use</b>	SPP Staff and GIUF	
<b>TBD – New Organizational Groups Recommended by SCRIPT</b>			
	<b>C4.0 Initiate consolidated planning group</b> <i>(TBD Consolidation Oversight Group)</i>		
	<b>S1.3. Modify GI decision point criteria</b> <i>(TBD NUCT Organizational Group)</i>	TWG and GIUF	

# APPENDIX A: OPTIONS FOR SCRIPT C4

## BACKGROUND

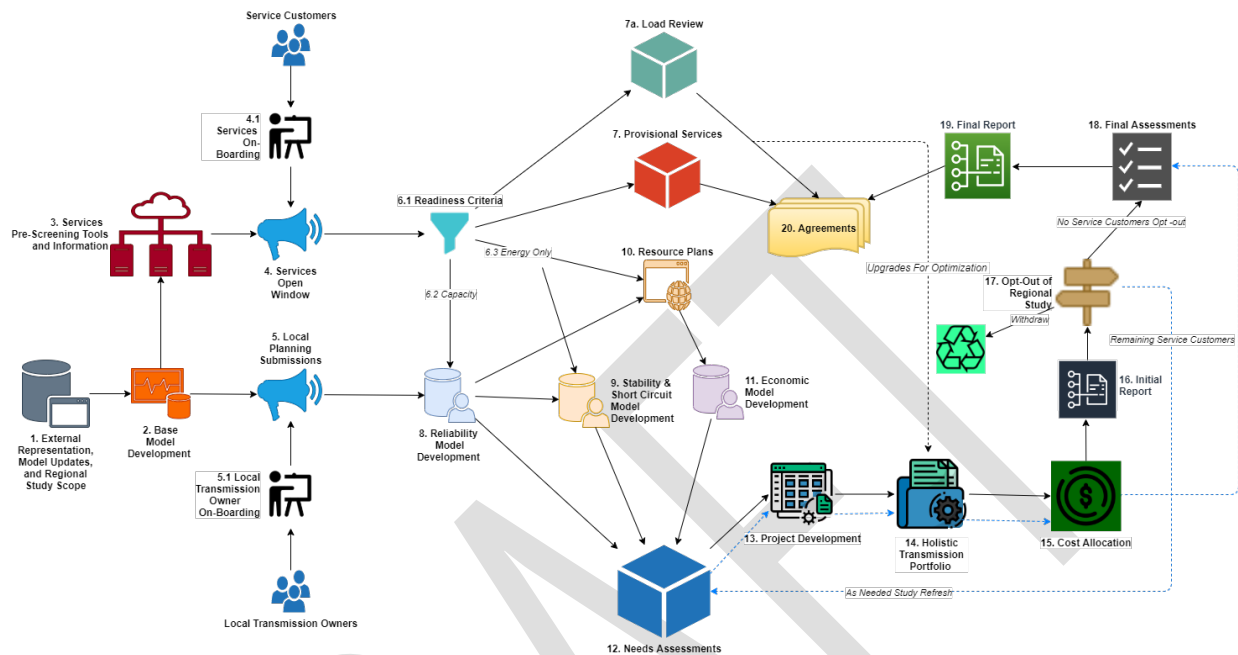
The current parallel assessment approach to the planning process produces transmission upgrades that may not be optimal when all system issues are considered. While the assessments have different requirements and are complete at various times, they all address transmission system needs that may require upgrades to the transmission system, resulting in potentially lost opportunities for holistic optimization of the regional transmission system.



A consolidated planning process needs to provide some level of optionality and cost-certainty of assigned upgrades to service customers to determine the overall viability of their request. This is a different approach to the regional study process under the ITP and would require an adjustment that allows for a certain level of assessment re-studies to accommodate. This need shows the requirement to meld the tenants of the different study processes to meet the overall goal. To provide timely study results and still maintain compliance with NERC TPL-001, re-studies need to be limited, and a higher level of customer viability and certainty needs to be implemented. This section describes the different options for customer optionality in a consolidated planning process. This analysis lays out multiple avenues to accomplish a comprehensive assessment effort with varying levels of benefits and challenges to the different parties involved.



# OPTION 1 – “CUSTOMER OPT-OUT”



This option assumes all customers entering requests during an open window would move into the consolidated assessment. All requests would need to meet some level of readiness criteria as outlined in recommendation S1.2 to limit study restarts.

The impact of submitted requests would be analyzed with traditional regional planning needs assessments (ITP) and a coordinated solution development would occur. A methodology to consider the incremental impact of different service types to existing baseline reliability and compliance requirements needs to be determined. This could be achieved through additional model set(s) including the service requests or development of an analytical methodology utilizing a single model set. All generator interconnection requests would be included in the applicable reliability, stability, short circuit, and economic models for total system impacts. Generator interconnection service products should have a streamlined and consistent data approach in the consolidated study, including an expected usage or average historical dispatch concept for granted interconnection services. Applicable review of distribution factors utilized for identifying service-driven violations and projects should be reviewed during the consolidated assessment to ensure the appropriate threshold levels for each service product.

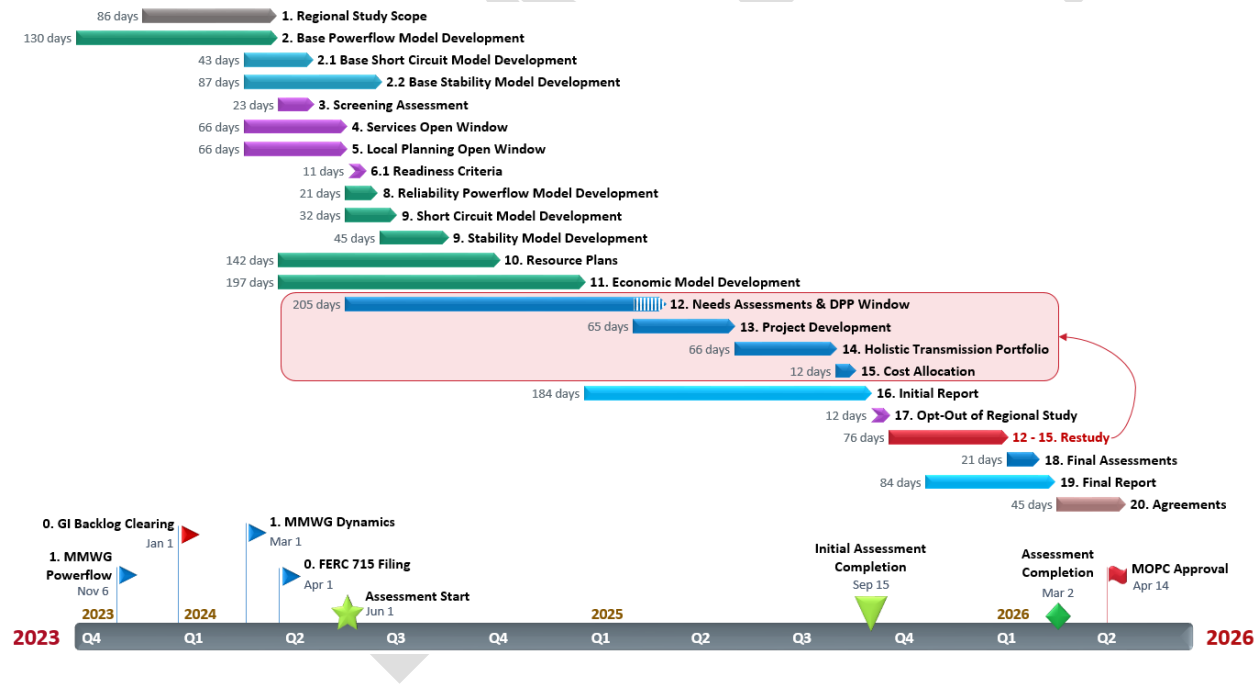
After a parallel portfolio development process and cost allocation (with cost sharing) analysis, service customers would be given the opportunity to “opt-out” and withdraw their request. Upon any withdrawal of requests, the needs assessments, solution development and portfolio



development process would restart, moving into a second phase (expected to be more limited analysis and timeline) and the process would continue to the end of the consolidated assessment. It is anticipated that a consolidated planning assessment could only accommodate a single study restart while still maintaining a desirable timeline.

Opportunity could be provided for certain customers submitting requests in the open window to move to a “provisional services” phase. This would serve to provide more timely results to customers that are “ready-to-go” and in need of quick interconnection. The load review process, as identified in flowchart block 7a, should be timely to encourage load addition within the SPP footprint. Upgrades from load review should be optimized with the consolidated study when possible. Load addition should be included in the base models as early as possible based on readiness criteria. This could be an as-available type of service or full service with higher entry hurdles that could result in sub-optimal planning and higher direct assigned costs. This could also allow for, for example, an interim generator interconnection agreement that would allow as-available service while still participating in the comprehensive assessment to maintain optimal planning across processes.

An example timeline to be refined during implementation is provided below:



**Benefits**

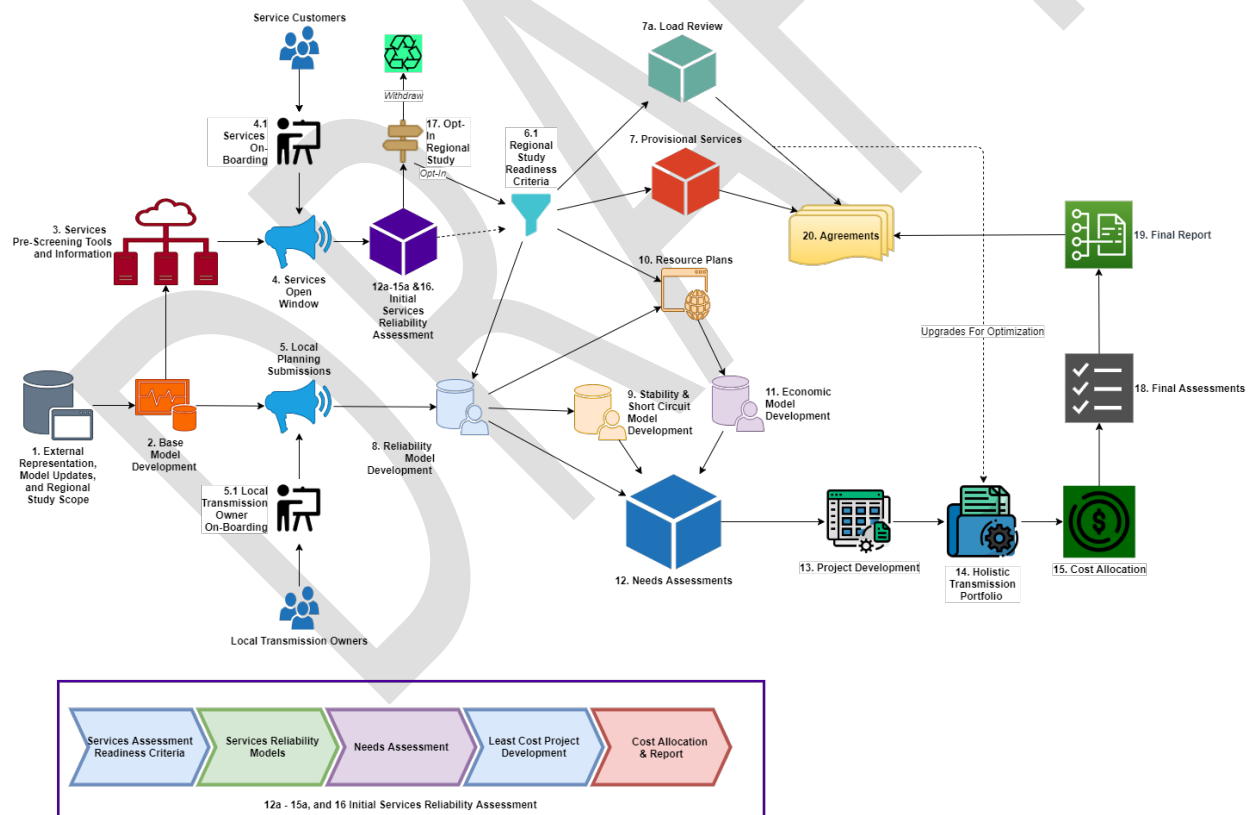
- Provides the most optimal transmission analysis and project portfolios across the majority of SPP planning Tariff processes
- Understanding the aggregate transmission system impacts of a comprehensive set of planning activities, e.g. the ability for new service to provide system counterflows that could alleviate violations

- Provides service customers with an up-front comprehensive answer reflective of potential cost-sharing with load customers
- Reduces the need for SPP to manage multiple parallel service queues and assessments

### Challenges

- Third-party or affected system analysis
  - Would likely need to revamp and streamline affected system studies
- Study delays
  - Additional process paths would need to be developed in order to meet annual NERC and Tariff requirements
  - Develop a process to be able to “off-ramp” certain projects/portfolios in order to meet baseline reliability requirements
- Speculative requests that could result in restudies and reduction of cost-certainty for service customers after the first phase

## OPTION 2 – “CUSTOMER OPT-IN”



This option assumes all customers entering requests during the open window would move into a reliability feasibility study phase to determine whether or not they want to “opt-in” to the consolidated assessment. Based on recent service assessment history, the feasibility assessment would likely determine a “worst-case” cost requirement for service customers to make the opt-in

determination. Service customers electing to move into the consolidated assessment would need to meet some level of readiness criteria as outlined in recommendation S1.2.

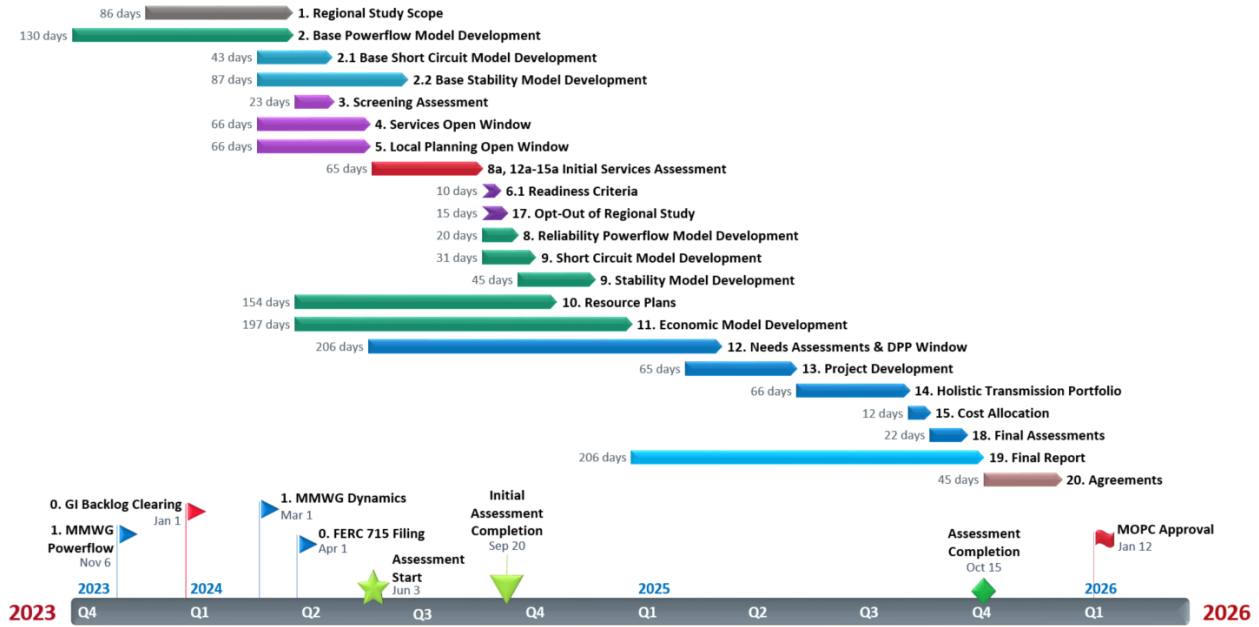
The impact of submitted requests would be analyzed with traditional regional planning needs assessments (ITP) and a coordinated solution development would occur. A methodology to consider the incremental impact of different service types to existing baseline reliability and compliance requirements needs to be determined.

This could be achieved through additional model set(s) including the service requests or development of an analytical methodology utilizing a single model set. All generator interconnection requests would be included in the applicable reliability, stability, short circuit, and economic models for total system impacts. Generator interconnection service products should have a streamlined and consistent data approach in the consolidated study, including an expected usage or average historical dispatch concept for granted interconnection services.

Applicable review of distribution factors utilized for identifying service-driven violations and projects should be reviewed during the consolidated assessment to ensure the appropriate threshold levels for each service product.

Opportunity could be provided for certain customers submitting requests in the open window to move to a "provisional services" phase. This would serve to provide more timely results to customers that are "ready-to-go" and in need of quick interconnection. This could be an as-available type of service or full service with higher entry hurdles that could result in sub-optimal planning and higher direct assigned costs. This could also allow for, for example, an interim generator interconnection agreement that would allow as-available service while still participating in the comprehensive assessment to maintain optimal planning across processes.

An example timeline to be further refined during implementation is provided below:



### Benefits

- Provides a route for the most optimal transmission analysis and project portfolios across the majority of SPP planning Tariff processes
- Understanding the aggregate transmission system impacts of a comprehensive set of planning activities, e.g. the ability for new service to provide system counterflows that could alleviate violations
- Reduces the need for SPP to manage multiple parallel service queues and assessments

### Challenges

- Does not provide service customers with the most optimal results in the initial decisions to move forward
- Third-party or affected system analysis
  - Would likely need to revamp and streamline affected system studies
- Study delays
  - Additional process paths would need to be developed in order to ensure compliance with NERC and Tariff requirements
  - Develop a process to be able to “off-ramp” certain projects/portfolios in order to meet baseline reliability requirements

# APPENDIX B: GI BACKLOG PLAN

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## **SOUTHWEST POWER POOL, INC.**

Strategic and Creative Re-engineering of Integrated Planning Team (“SCRIPT”)

### **RECOMMENDATION TO THE BOARD OF DIRECTORS**

July 27, 2021

Generator Interconnection Backlog Clearing Proposal

## ORGANIZATIONAL ROSTER

The following persons are members of the SCRIPT:

Mark Crisson, SPP  
 Bronwen Bastone, SPP  
 Tom Christensen, Basin  
 Dennis Florum, LES  
 Christopher Jones, CUS  
 Brett Leopold, ITC  
 Richard Ross, AEP  
 David Mindham, EDP

Andrew French, KCC  
 Steve Gaw, APA  
 Bill Grant, SPS-Xcel  
 Dennis Grennan, NPRB  
 Joe Lang, OPPD  
 Usha Turner, OGE  
 Mike Wise, Golden Spread  
 Denise Buffington, Evergy

## BACKGROUND

The SPP board of directors formed the Strategic & Creative Re-engineering of Integrated Planning Team (“SCRIPT”) Aug. 31, 2020. The SCRIPT is responsible for strategically developing broad changes to SPP’s transmission planning processes to better meet customer needs while resolving growing stakeholder concerns about the amount, nature and funding of continued transmission investment amid rapid industry changes. The SCRIPT is tasked with developing policy recommendations for SPP’s transmission planning processes. This Recommendation Report supports the SCRIPT’s Scope of Work by proposing policy modifications that will result in “improved responsiveness, efficiency and cost certainty of studies needed to provide customer-requested service.”<sup>13</sup>

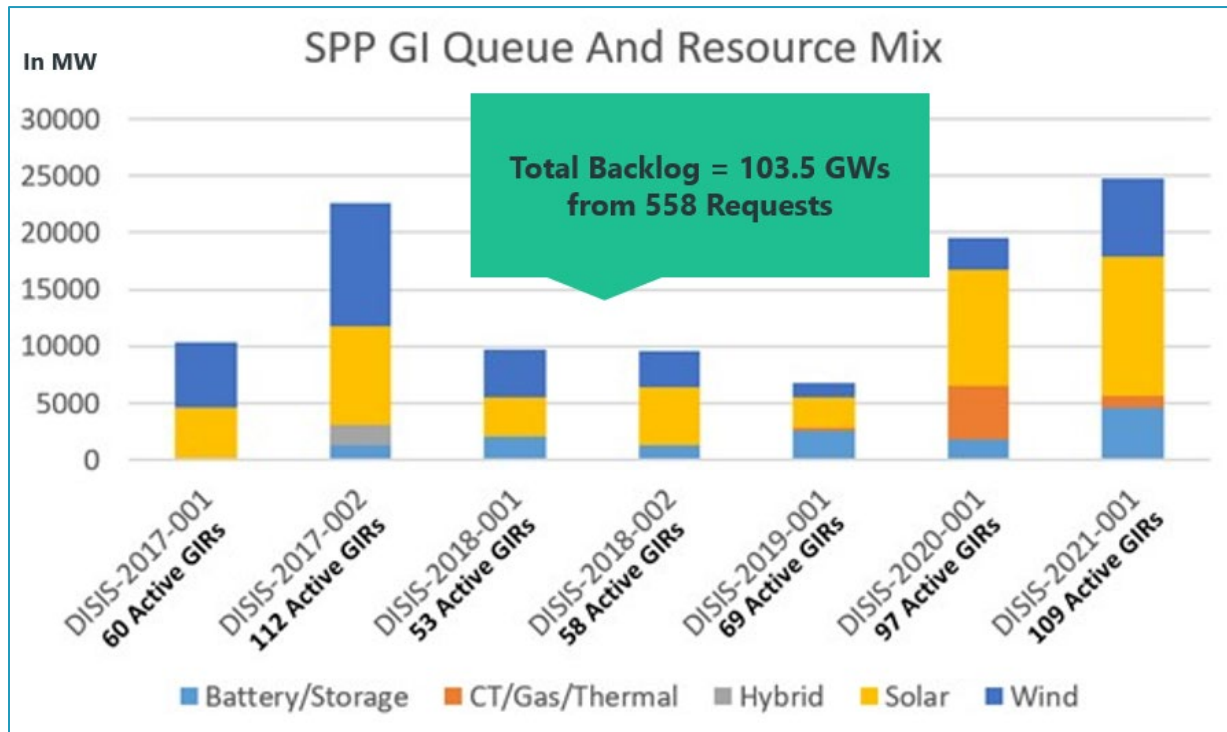
As of May 13, 2021, the Generator Interconnection (“GI”) backlog of requests was comprised of seven Definitive Interconnection System Impact Study (“DISIS”) clusters representing 558

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<sup>13</sup> The SCRIPT Scope Statement is located at:

<https://www.spp.org/documents/63768/20210106%20revised%20script%20scope%20statement.pdf>

individual GI requests and over 103,000 megawatts (“MW”) of generation capacity. Reducing the GI backlog was identified in SPP’s 2021 Operating Plan as one of the top corporate and departmental objectives.<sup>14</sup>



When SPP implemented its legacy cluster study process was, it was experiencing significantly smaller GI queues. This legacy process often resulted in numerous restudies as a result of customer withdrawals and minimal financial commitments to remain in the studies. In 2019 SPP implemented a set of GI study and queue reforms known as the “Three-Phase” process that was designed to address the causes of the backlog in SPP’s legacy cluster study process.

The new three-phase process was implemented beginning with the DISIS-2017-001 cluster. The three-phase process was designed to facilitate consistent, timely processing of *new* DISIS clusters. However, SPP does not believe that the existing three-phase process is sufficient to clear the existing backlog of GI requests without additional reforms. Without additional queue reforms, it is expected that it could take at least eight years or more for SPP to complete all current and future backlogged DISIS cluster studies This timeframe will be unacceptable to meet the needs of SPP’s GI customers. SPP staff engaged stakeholders through the SCRIPT’s Services sub-team, the Generation Interconnection Users Forum (GIUF) and ad hoc discussions with generation developers and various SPP members. This process has built general consensus for the need to address the GI backlog and for a package of additional GI queue reforms to specifically target reducing, and ultimately mitigating, the GI backlog. Over the last several

<sup>14</sup> SPP’s 2021 Operating Plan is located at: [https://www.spp.org/documents/63478/2021%20operating%20plan%20\(spp.org\).pdf](https://www.spp.org/documents/63478/2021%20operating%20plan%20(spp.org).pdf)

months, SPP has implemented numerous process improvements to the way it models and conducts GI studies, which will help in the overall goal of reducing study times. The reforms described in this Recommendation Report are in addition to these reforms and are based on three backlog mitigation strategies:

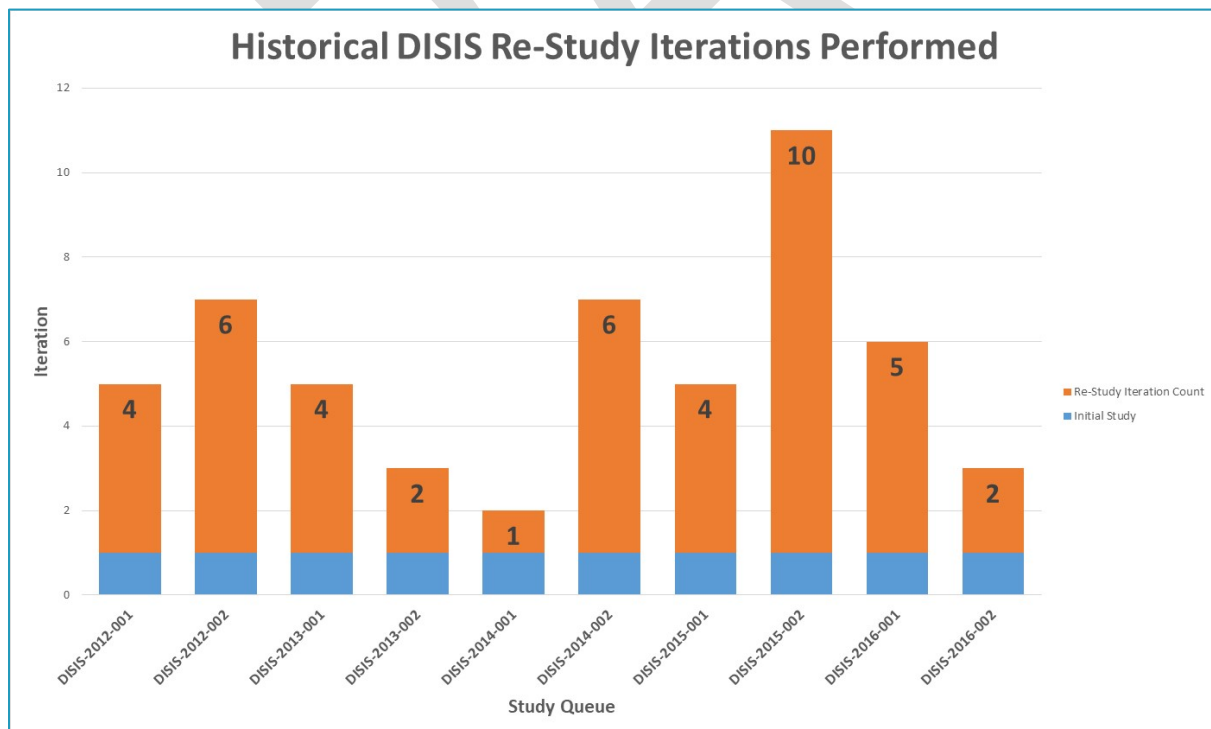
1. **Strategy 1: Reduce restudies through development milestones**
2. **Strategy 2: Increase financial commitments**
3. **Strategy 3: Simplify and reduce study timelines**

## ANALYSIS



### STRATEGY 1: REDUCE RESTUDIES THROUGH DEVELOPMENT MILESTONES

Frequent restudies under SPP’s legacy cluster study process were a key reason for the existing GI backlog. Restudies were required when a GI customer withdrew an interconnection request during the study process. The restudy examined the effect of the withdrawn request on the remaining requests in the cluster. The restudy would often have a snowball effect, producing a result that remaining customers found unacceptable and leading to additional withdrawals and more restudies. The legacy cluster study process did not create enough incentives or penalties for customers to withdraw their requests until very late in the study.



The three-phase process implemented in 2019 attempted to address the issue of late stage withdrawals by requiring customers to make payments of financial security at each phase of the process. Under the new process, a portion of these financial securities would be “at risk” of forfeiture in the event a customer’s withdrawal increases costs for remaining customers. While this financial security design is encouraging GI customers to make better decisions regarding the viability of their projects, it does not appear likely that the substantial amount of generation in the queue can be addressed with these changes alone. Additional reforms are needed to better ensure that the most viable interconnection projects remain in the latter stages of the study process.

**1.1 Development Milestones:** In addition to the financial securities, the existing Generator Interconnection Procedures (“GIP”) contained in Section 11.3 of Attachment V of the Tariff require a demonstration that “one or more” development milestones have been satisfied, however these milestones are not currently required until 15 days after receipt of a final GIA.

Existing Development Milestones	
Contract for Fuel	Inclusion in State Resource Plan
Contract for Cooling Water	Designated Resource Qualification
Contract for Engineering, Procurement or Construction	Application for Air, Water or Land Use Permit
Contract for Sale of Energy or Capacity	

In addition to the existing development milestones, the SCRIPT determined that five (5) new development milestones should be added. Two of the new development milestones would be required, if applicable, and relate to additional site control requirements while three would be added to the list of existing development milestones in which “one or more” would be required to demonstrate sufficient project development.

New Development Milestones	
<b>(Required)</b> Site Control for Generator’s High Voltage Tie Line (not including utility owned land)	Pre-Confirmed or Confirmed Long-Term Transmission Service Request (“TSR”)
<b>(Required)</b> Site Control for New Point-of-Interconnection (“POI”) Substations, if applicable (not including utility owned land)	Interim LGIA Accepted by the Federal Energy Regulatory Commission (FERC)
	Final Detailed Plant Design, and for Inverter-Based Resources, Submission of EMT Model



GI customers will be required to satisfy at least 50% of the new site control requirement for a generator's high voltage tie line before the start of Phase 1 of the customer's DISIS cluster. This requirement will increase to at least 75% by the conclusion of Decision Point 2.

Because a portion of the high voltage tie line site control is required very early in the three-phase process, GI customers will have the option of making additional payments of financial security "in lieu of" meeting the high voltage tie line site control requirement. The appropriate amount of "in lieu of" financial security will be further developed through the revision request process. Other transmission providers such as Midcontinent Independent System Operator (MISO) have previously adopted similar financial security payments "in lieu of" certain site control requirements.

If a GI customer elects to pay additional financial security "in lieu of" the high voltage tie line site control, the "in lieu of" security will be additive to the Financial Security 1, Financial Security 2 or Financial Security 3, as applicable, that is otherwise required in the three-phase process.

Similarly, the "in lieu of" security will be "at risk," as applicable, consistent with the amount of Financial Security 1, Financial Security 2, or Financial Security 3 that is "at risk." If at any point during the three-phase process the GI customer later satisfies the applicable high voltage tie line site control requirement, the "in lieu of" financial security will be refunded to the customer.

The additional site control requirement for new POI substations, if applicable, will be 100% and must be demonstrated by the conclusion of Decision Point 2. Because the POI substation site control is not required until later in the three-phase process, no "in lieu of" financial security option will be available.

The other three new development milestones will be added to the list of existing development milestones in which "one or more" would be required to demonstrate sufficient project development. To ensure that GI projects in the later stages of the study process are progressing in their development, "one or more" of these development milestones will be required by the end of Decision Point 2 in order for a customer to remain in the queue and progress to Phase 3 of the three-phase process.

GI projects that are more developed are less likely to withdraw their requests in the latter stages of the study process. Fewer late-stage withdrawals will result in fewer restudies required to complete each DISIS cluster which will facilitate mitigation of the GI backlog. In an effort to more efficiently address the GI backlog, the SCRIPT recommends that GI customers be required to demonstrate certain project development milestones earlier in the three-phase process.



**Strategy 1, Recommendation 1:** *The SCRIPT recommends the adoption of new high voltage tie line and POI substation site control requirements, incorporating an "in lieu of" financial security option for the high voltage tie line site control requirement, and that "one or more" of the additional development milestones be required before the end of Decision Point 2.*

In addition to adding new development milestones and advancing the demonstration of development milestones, the SCRIPT recommends several other enhancements to the existing three-phase process that will provide better incentives for customer decision-making, greater cost certainty for customers, and eliminate unnecessary steps in the study process.

**1.2 Non-Refundable DISIS Study Deposits:** The existing three-phase process requires each GI customer to post a study deposit that is based on the size of the generator requesting interconnection service. The study deposits are applied toward the costs of performing any studies applicable to the interconnection request, and the amount of unused study deposits are refundable to the extent the actual costs incurred are less than the study deposit. To better incentivize timely withdrawals that create fewer issues and discourage late-stage withdrawals, the SCRIPT recommends adopting progressively non-refundable<sup>15</sup> DISIS study deposits in accordance with the following schedule:

- 20% of initial study deposit non-refundable after the start of Phase 1
- 50% of initial study deposit non-refundable after the end of Decision Point 1
- 100% of initial study deposit non-refundable after the end of Decision Point 2

Other transmission providers, including California Independent System Operator (CAISO) and MISO, have a portion of their study deposits non-refundable or collect a non-refundable application fee upon entry into the GI queue.



**Strategy 1, Recommendation 2:** *The SCRIPT recommends adopting progressively non-refundable DISIS study deposits.*

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**1.3 Perform Facilities Study for POI Facilities During Phase 2:** During the development of this GI Backlog Mitigation Plan, generation developers expressed concerns about the level of cost certainty they are able to get from the existing three-phase process. These concerns were heightened by the additional development milestone and financial security requirements that are being proposed to facilitate mitigation of the GI backlog.

To help address these concerns, the SCRIPT recommends beginning the Interconnection Facilities Study for POI facilities as a part of Phase 2 of the three-phase process. In the existing three-phase process, no part of the Interconnection Facilities Study is conducted until Phase 3 of the three-phase process. The SCRIPT believes this change is a reasonable compromise to provide increased cost certainty for generation projects who remain in the study process after Decision Point 1 because the extent of transmission upgrades needed at the POI are well understood by SPP, Transmission Owners, and the GI customer at this phase of the study. MISO

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<sup>15</sup> Non-refundable refers to the portion of each customer's initial study deposit that would be retained by SPP to offset current study costs and reduce future study costs.

has adopted similar practices of beginning its Interconnection Facilities Study for POI facilities during Phase 2 of its study process.



**Strategy 1, Recommendation 3:** *The SCRIPT recommends beginning the Interconnection Facilities Study for POI facilities as a part of Phase 2 of the three-phase process.*

**1.4 Eliminate Decision Point 3 Window:** The existing three-phase process includes a period of fifteen (15) business days after SPP posts the results of the Interconnection Facilities Study in which GI customers may elect to proceed to negotiating a GIA. Additionally, the existing three-phase process provides that a customer may be eligible for a full refund of its Financial Security 1, Financial Security 2, and Financial Security 3 if the customer withdraws its request after Decision Point 2 and its allocated cost increases beyond certain criteria. This refund eligibility period is extended fifteen (15) business days after the posting of a revised Interconnection Facilities Study or a new or revised Affected System study which results in allocated costs that increase beyond the same criteria.

In an effort to further streamline the three-phase process, the SCRIPT recommends eliminating Decision Point 3 and beginning the GIA negotiation period in parallel with the Interconnection Facilities Study. This will reduce the time required to complete phase three and better facilitate the negotiation of GIAs. GI customers would maintain the refund eligibility period for financial securities contemplated in the existing three-phase process.



**Strategy 1, Recommendation 4:** *The SCRIPT recommends eliminating Decision Point 3, beginning the GIA negotiation period at the beginning of Phase 3, and retaining the existing financial security refund eligibility provisions.*



## STRATEGY 2: INCREASE FINANCIAL COMMITMENTS

The existing three-phase process includes provisions for GI customers to provide financial securities at certain points in the study process. Those financial securities become “at risk” of forfeiture after certain decision points if the customer elects to withdraw their request and that withdrawal results in an adverse impact to other customers in the queue.

The SCRIPT recommends the amount of these financial securities be increased and the amount that is “at risk” be increased at certain points in the three-phase process in an effort to address the GI backlog, to reduce the risk of late-stage customer withdrawals, and to facilitate better GI customer decision making.

**2.1 Revise Financial Security 1:** In the existing three-phase process, Financial Security 1 is required from each GI customer before the close of the DISIS Queue Cluster Window and is

currently not “at-risk” of forfeiture until after Decision Point 1. Financial Security 1 is currently \$2,000/MW. A customer who withdraws their request before Decision Point 1 is eligible for a full refund of Financial Security 1. To address the GI backlog, the SCRIPT recommends increasing the size of Financial Security 1 and making a portion of Financial Security 1 “at risk” after the start of Phase 1 of the three-phase process.



**Strategy 2, Recommendation 1:** *The SCRIPT recommends increasing Financial Security 1 from the current \$2,000/MW to \$4,000/MW and making 25% of Financial Security 1 “at-risk” after the start of Phase 1.*

**2.2 Revise Financial Security 2:** In the existing three-phase process, Financial Security 2 is required to be paid by customers who elect to remain in the DISIS after Decision Point 1 and is currently not “at-risk” until after a customer elects to remain in the DISIS after Decision Point 2. Financial Security 2 is currently equal to the *greater* of:

- a. Ten percent (10%) of the Financial Security 2 Cost Factor, less the amount of Financial Security 1 that was provided to enter DISIS Phase 1, or
- b. \$2,000/MW of the requested capacity advancing to DISIS Phase 2

A customer who withdraws their request before the end of Decision Point 2 is currently eligible for a full refund of their Financial Security 2. To address the GI backlog, the SCRIPT recommends increasing the *minimum* size of Financial Security 2 and making a portion of Financial Security 2 “at risk” after the end of Decision Point 1.



**Strategy 2, Recommendation 2:** *The SCRIPT recommends increasing the minimum amount of Financial Security 2 from the current \$2,000/MW to \$4,000/MW and making 25% of Financial Security 2 “at-risk” after the end of Decision Point 1.*

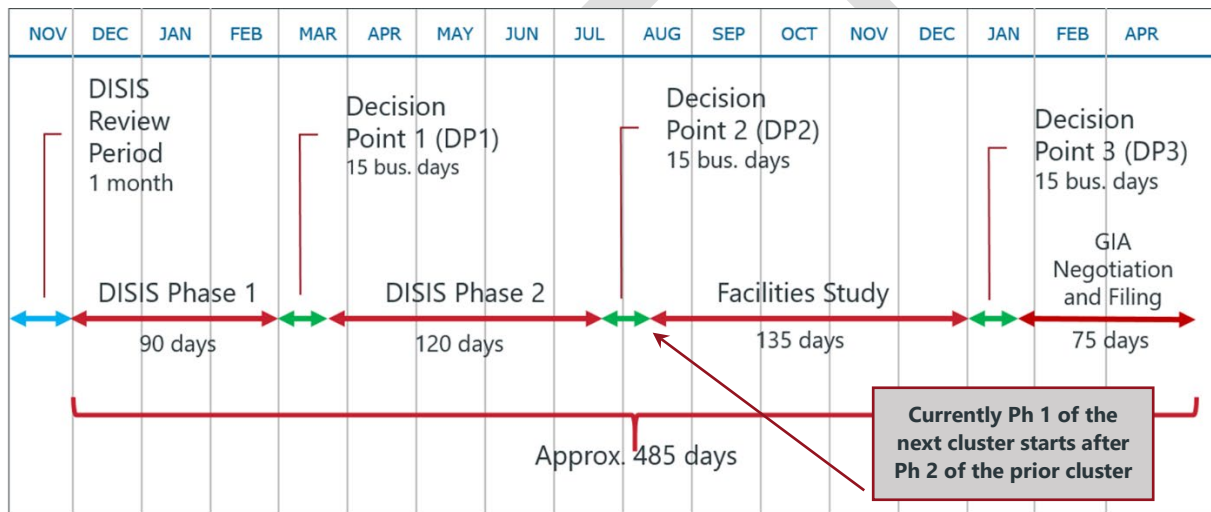
No other changes are proposed to the financial securities or for the determination of how financial securities are determined to be “at risk” of forfeiture due to withdrawal in accordance with Section 8.14 of Attachment V of the Tariff.



**STRATEGY 3: SIMPLIFY AND REDUCE STUDY TIMELINES**

Limiting the number of restudies required to complete a DISIS cluster through the reforms proposed in Strategy 1 and Strategy 2 is a key factor to addressing the GI backlog in a timely manner. In addition to limiting the number of restudies, the SCRIPT recommends four additional reforms to the three-phase process. These reforms are intended to simplify and reduce the overall study timelines to facilitate faster mitigation of the GI backlog.

The existing three-phase process takes approximately 485 days to complete each DISIS cluster from the beginning of Phase 1 to the execution and filing of GIAs, and this timeline is extended by at least 60 days for each required restudy that takes place when GI customers withdraw their requests at various stages of the process.



**3.1 Parallel Processing:** Currently, SPP only begins the study process of a new cluster after the prior cluster has completed Decision Point 2. While this practice helps to ensure the new cluster includes the best available information about the status of higher queued interconnection requests and their Network Upgrades, it delays the start of subsequent clusters and delays customers in those later clusters from getting information that could inform a decision of whether to proceed or withdraw their interconnection request. The SCRIPT recommends SPP process the backlogged clusters in parallel with each other to give customers their Phase 1 results earlier than under the existing study process.



**Strategy 3, Recommendation 1:** The SCRIPT recommends SPP process backlogged DISIS clusters in parallel with each other by (i) starting Phase 1 of subsequent clusters after the end of DP1 of the prior cluster and (ii) starting Phase 2 of subsequent clusters after the end of DP2 of the prior cluster.

**3.2 Implement and Identify Improvements:** The Transmission Working Group (“TWG”) has recently approved recommendations to reduce the number of models required to conduct GI

studies as well as to reduce the number of unique study groupings. SPP staff should take these recent process improvements and continue to pursue other study process improvements in an effort to reduce the overall length of time to conduct the three-phase process.



**Strategy 3, Recommendation 2:** *The SCRIPT recommends SPP implement the TWG-approved process improvements and identify other process improvements to reduce the existing three-phase process timeline from approximately 485 days to approximately 365 days, or less, not counting the time required to conduct any necessary restudies.*

**3.3 Delay Cluster Closing:** With the closing of the DISIS-2021-001 cluster window, the GI backlog includes seven (7) clusters representing 558 requests and over 103,000 MW of generation capacity. With the parallel cluster processing and reduced study timelines described in the previous recommendations, it will still take at least four years to process all backlogged clusters. The SCRIPT recommends additional actions be taken to keep the GI backlog from growing larger and to further reduce the number of DISIS clusters while preserving, as much as practicable, the queue priority of GI requests currently in the backlog. The SCRIPT recommends leaving open the next DISIS Queue Cluster Window while the new backlog mitigation plan is implemented. SPP took a similar approach when it transitioned to its revised Aggregate Transmission Service Study process.



**Strategy 3, Recommendation 3:** *The SCRIPT recommends SPP seek approval from FERC to leave open (and not close) the DISIS-2022-001 Queue Cluster Window until after the completion of Phase 1 for DISIS-2021-001.*

**3.4 Combine Clusters:** To further reduce the length of time required to clear the GI backlog and to reduce number of backlogged DISIS clusters, SPP should combine at least two clusters to create one larger cluster. SPP should seek to accomplish the combining of clusters while preserving, as much as practicable, the queue priority of GI requests currently in the backlog.

Of the seven (7) clusters comprising the GI backlog, DISIS-2018-002 and DISIS-2019-001 are the two smallest clusters, and they are adjacent to each other in queue priority. As such, it would be expected that combining DISIS-2018-002 and DISIS-2019-001 would be the least impactful to the queue priority and would facilitate a more efficient study process than seeking to combine larger clusters.



**Strategy 3, Recommendation 4:** *The SCRIPT recommends SPP seek approval from FERC to combine clusters DISIS-2018-002 and DISIS-2019-001.*

## RECOMMENDATIONS

The SCRIPT recommends the SPP board of directors approve the following recommendations and direct SPP staff to develop associated Revision Requests in coordination with the appropriate working groups as necessary to facilitate mitigation of the GI backlog:

### *STRATEGY 1: REDUCE RESTUDIES THROUGH DEVELOPMENT MILESTONES*



**Strategy 1, Recommendation 1:** *The SCRIPT recommends the adoption of new high voltage tie line and POI substation site control requirements, incorporating an “in lieu of” financial security option for the high voltage tie line site control requirement, and that “one or more” of the additional development milestones be required before the end of Decision Point 2.*



**Strategy 1, Recommendation 2:** *The SCRIPT recommends adopting progressively non-refundable DISIS study deposits.*



**Strategy 1, Recommendation 3:** *The SCRIPT recommends beginning the Interconnection Facilities Study for POI facilities as a part of Phase 2 of the three-phase process.*



**Strategy 1, Recommendation 4:** *The SCRIPT recommends eliminating Decision Point 3, beginning the GIA negotiation period at the beginning of Phase 3, and retaining the existing financial security refund eligibility provisions.*

### *STRATEGY 2: INCREASE FINANCIAL COMMITMENTS*



**Strategy 2, Recommendation 1:** *The SCRIPT recommends increasing Financial Security 1 from the current \$2,000/MW to \$4,000/MW and making 25% of Financial Security 1 “at-risk” after the start of Phase 1.*



**Strategy 2, Recommendation 2:** *The SCRIPT recommends increasing the minimum amount of Financial Security 2 from the current \$2,000/MW to \$4,000/MW and making 25% of Financial Security 2 “at-risk” after the end of Decision Point 1.*

### *STRATEGY 3: SIMPLIFY AND REDUCE STUDY TIMELINES*



**Strategy 3, Recommendation 1:** *The SCRIPT recommends SPP process backlogged DISIS clusters in parallel with each other by (i) starting Phase 1 of subsequent clusters after the end of DP1 of the prior cluster and (ii) starting Phase 2 of subsequent clusters after the end of DP2 of the prior cluster.*



**Strategy 3, Recommendation 2:** *The SCRIPT recommends SPP implement the TWG-approved process improvements and identify other process improvements to reduce the existing three-phase process timeline from approximately 485 days to approximately 365 days, or less, not counting the time required to conduct any necessary restudies.*



**Strategy 3, Recommendation 3:** *The SCRIPT recommends SPP seek approval from FERC to leave open (and not close) the DISIS-2022-001 Queue Cluster Window until after the completion of Phase 1 for DISIS-2021-001.*



**Strategy 3, Recommendation 4:** *The SCRIPT recommends SPP seek approval from FERC to combine clusters DISIS-2018-002 and DISIS-2019-001.*

**Approved:**

SCRIPT

May 28, 2021

Passed Unopposed

MOPC

July 13, 2021

Passed Unopposed

**Action Requested:**

Approve Recommendation



## APPENDIX C: SCRIPT MEETINGS

The SCRIPT met weekly in 2020. It met as a whole team once a month and biweekly as sub-teams from January through March 2021 while sub-teams drafted proposals. From April through October 2021, the SCRIPT met as a whole group twice a month to finalize recommendations.

Date	Type	Host	Location
10/2/2020	SCRIPT	Russell Carey	WebEx
10/16/2020	SCRIPT	Russell Carey	WebEx
10/23/2020	SCRIPT	Russell Carey	WebEx
10/30/2020	SCRIPT	Russell Carey	WebEx
11/6/2020	SCRIPT	Russell Carey	WebEx
11/13/2020	SCRIPT	Russell Carey	WebEx
11/20/2020	SCRIPT	Russell Carey	WebEx
12/4/2020	SCRIPT	Russell Carey	WebEx
12/11/2020	SCRIPT	Russell Carey	WebEx
12/18/2020	SCRIPT	Russell Carey	WebEx
1/6/2021	SCRIPT	Russell Carey	WebEx
1/8/2021	Consolidation Sub-Team	Lanny Nickell	WebEx
1/8/2021	Services Sub-team	Steve Purdy	WebEx
1/14/2021	Cost-sharing Sub-team	Charles Locke	WebEx
1/14/2021	Transfers Sub-team	David Kelley	WebEx
1/15/2021	Decision Quality Sub-team	Casey Cathey	WebEx
1/15/2021	Optimization Sub-team	Antoine Lucas	WebEx
1/20/2021	Consolidation Sub-Team	Lanny Nickell	WebEx
1/22/2021	Services Sub-team	Steve Purdy	WebEx
1/27/2021	Decision Quality Sub-team	Casey Cathey	WebEx
1/28/2021	Optimization Sub-team	Antoine Lucas	WebEx
1/28/2021	Transfers Sub-team	David Kelley	WebEx
1/29/2021	Cost-sharing Sub-team	Charles Locke	WebEx
2/2/2021	SCRIPT	Russell Carey	WebEx
2/3/2021	Consolidation Sub-Team	Lanny Nickell	WebEx
2/4/2021	Cost-sharing Sub-team	Charles Locke	WebEx
2/5/2021	Decision Quality Sub-team	Casey Cathey	WebEx
2/9/2021	Services Sub-team	Steve Purdy	WebEx
2/11/2021	Transfers Sub-team	David Kelley	WebEx
2/12/2021	Optimization Sub-team	Antoine Lucas	WebEx
2/16/2021	Consolidation Sub-Team	Lanny Nickell	WebEx
2/18/2021	Cost-sharing Sub-team	Charles Locke	WebEx
2/19/2021	Decision Quality Sub-team	Casey Cathey	WebEx
2/23/2021	Services Sub-team	Steve Purdy	WebEx
2/23/2021	Transfers Sub-team	David Kelley	WebEx

Date	Type	Host	Location
2/26/2021	Optimization Sub-team	Antoine Lucas	WebEx
3/3/2021	Cost-sharing Sub-team	Charles Locke	WebEx
3/4/2021	Decision Quality Sub-team	Casey Cathey	WebEx
3/5/2021	SCRIPT	Russell Carey	WebEx
3/8/2021	Consolidation Sub-Team	Lanny Nickell	WebEx
3/10/2021	Services Sub-team	Steve Purdy	WebEx
3/11/2021	Transfers Sub-team	David Kelley	WebEx
3/12/2021	Optimization Sub-team	Antoine Lucas	WebEx
3/17/2021	Cost-sharing Sub-team	Charles Locke	WebEx
3/18/2021	Decision Quality Sub-team	Casey Cathey	WebEx
3/23/2021	Consolidation Sub-Team	Lanny Nickell	WebEx
3/24/2021	Services Sub-team	Steve Purdy	WebEx
3/26/2021	Optimization Sub-team	Antoine Lucas	WebEx
3/26/2021	Transfers Sub-team	David Kelley	WebEx
4/2/2021	SCRIPT	Russell Carey	WebEx
4/30/2021	SCRIPT	Russell Carey	WebEx
5/28/2021	SCRIPT	Russell Carey	WebEx
6/11/2021	SCRIPT	Russell Carey	WebEx
6/25/2021	SCRIPT	Russell Carey	WebEx
7/9/2021	SCRIPT	Russell Carey	WebEx
8/6/2021	SCRIPT	Russell Carey	WebEx
8/20/2021	SCRIPT	Russell Carey	WebEx
9/3/2021	SCRIPT	Russell Carey	WebEx
9/17/2021	SCRIPT	Russell Carey	WebEx
10/1/2021	SCRIPT	Russell Carey	WebEx
10/15/2021	SCRIPT	Russell Carey	WebEx

SCRIPT Sub-team Assignments by Sub-team		
Consolidation	Services	Decision Quality
Chris Jones	Bill Grant	Bill Grant
David Mindham	Bronwen Bastone	Bronwen Bastone
Denise Buffington	David Mindham	Dennis Grennan
Dennis Florom	Richard Ross	Mike Wise
Joe Lang	Steve Gaw	Steve Gaw
Mark Crisson	Mark Crisson	Mark Crisson
Transfers	Optimization	Cost-sharing
Andrew French	Chris Jones	Andrew French
Brett Leopold	Dennis Florom	Brett Leopold
Joe Lang	Dennis Grennan	Mike Wise
Richard Ross	Denise Buffington	Tom Christensen
Usha Turner	Tom Christensen	Usha Turner
Mark Crisson	Mark Crisson	Mark Crisson

# APPENDIX D: INTERDEPENDENCIES

*This section will be completed after the final set of recommendations has been determined*

	Consolidation	Services	Optimization	Decision Quality	Transfers	Cost-sharing
Consolidation						
Services						
Optimization						
Decision Quality						
Transfers						
Cost-sharing						

# APPENDIX E: GLOSSARY

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*This section will need to be completed when the document is near final to locate and define every acronym or uncommon term used in the report*

Term	Acronym	Definition

DRAFT