

GI Improvement Task Force Report

RSC

October 30, 2017

Al Tamimi, GIITF Chair

Background

How did we get here?

SPP's Transmission Expansion Plan



Flashback to October 2016

- **Renewable Status: Over 22GW of renewables already connected or on schedule to be connected over next 26 months**
 - In-Service Wind: Over 14GW on wires
 - Wind/Solar on schedule by end of 2018 (under GIA): 8GW
- **All Wind Status**
 - Existing Wind plus on schedule GIAs = 22GW+
 - Wind in DISIS-2015-001/002 = 10GW
 - Wind in DISIS-2016-001 = 11GW
 - Total potential wind = 43GW+
 - SPP WIS Light Load = 24GW
 - Actual 2016 Minimum SPP Load < 20GW
- **MOPC Created the GIITF to address challenges with volume of requests and with generation > load in some cases**

GIITF Charter

Purpose

The Generator Interconnection Improvement Task Force (GIITF) is formed to identify improvements in the transmission study process to address the extreme amounts of new generation in SPP GI queue and to address new requirements arising from new FERC proposed rulemaking initiatives.

Duration

The GIITF will make recommendations to the MOPC at the October 2017 regular meeting on any changes needed to the SPP GI study procedures, and whether additional time is needed for the Task Force to complete its work.

GIITF Charter

Scope of Activities

1. Evaluate the existing SPP Generator Interconnection Procedures (GIP), including internal SPP transmission study processes, and recommend changes that will:
 - a. Identify transmission study procedures; including modeling, overload thresholds, etc. that will allow SPP to conduct GI studies when generation levels exceed minimum load levels in the region.
 - b. Improve value to Interconnection Customers and Transmission Owners, and
 - c. Streamline and simplify processes both internally and customer-facing.
2. Evaluate the FERC Notice of Proposed Rulemaking in RM17-8 which may impact the SPP GIP and recommend changes that will enhance SPP's ability to effectively comply with new requirements.
3. Review deliverability issues that are related to the Aggregate Study process, and recommend whether further detailed review of the Aggregate Study process should be undertaken subsequent to, or concurrent with this task force effort.

The GIITF may recommend changes to the SPP GIP, SPP Business Practices, and internal SPP GI transmission study procedures.

GIITF Membership

- Al Tamimi, Sunflower (Chair)
- Michael Wegner, ITC (VC)
- Mark Ahlstrom, NextEra
- Aaron Aston, OG&E
- John Brodbeck, EDPR
- Randy Lindstrom, NPPD
- Kevin Pera, Xcel Energy
- Dirk Shulund, WAPA-UGP
- James Smith, AEP
- Lisa Szot, Enel Green Power

Thanks to the many other developers and transmission owners who participated in the discussions and contributed to the development of these recommendations.

Meetings and Teleconferences

- March 17 – Teleconference: Kickoff meeting
- March 30 – Face-to-face: Education about current issues and processes
- April 13 – Teleconference: Education continued
- April 26 – Face-to-face: Consideration of staff proposals
- May 31 – Face-to-face: Continued discussion of proposals
- June 27 – Face-to-face: Proposals in more detail
- August 3 – Face-to-face
- August 24 – Teleconference
- September 13 – Face-to-face
- September 21 – Teleconference
- September 29 - Teleconference

Summary of GIITF's Recommended Actions to MOPC

The GIITF requests that the MOPC take the following actions:

- Part I: Approve for immediate implementation:
 - Recommendation 2: Publish study models earlier in the process and eliminate the “standalone” analysis, as described in the full text of the recommendation. (tariff change)
 - Recommendation 6: Appoint a stakeholder group with appropriate background and expertise to re-evaluate the purpose, scope, and study requirements of Network Resource Interconnection Service (NRIS) with the goal of aligning it more closely with SPP's current and future market structure.
- Part II: Approve the concept of the three-stage study process and direct that a full and complete proposal be provided to MOPC at a later date, or provide alternative direction to GIITF.
- Part III. Approve the amended Charter to extend the GIITF to:
 - Address the remaining Charter tasks
 - Address the identified additional proposals, if MOPC so directs

Part I

Recommendations for Immediate Implementation

Approval Requested: GIITF Recommendation 2

Publish study models earlier in the process and eliminate the “standalone” analysis, as described in the full text of the recommendation. (tariff change)

- Current tariff requires each request to be evaluated as if it is the only request in the queue in addition to the cluster evaluation.
- This provision provides minimal value to the customer because the binding results are based on the cluster.
- The stand-alone analysis constitutes a significant portion of study costs and consumes significant time and resources.
- By providing base case study models, the customer will have the ability to do their own stand-alone evaluation.
- Eliminating it from the SPP study will reduce study costs and improve timeliness of study results.

Approval Requested: GIITF Recommendation 6

Appoint a stakeholder group with appropriate background and expertise to re-evaluate the purpose, scope, and study requirements of Network Resource Interconnection Service (NRIS) with the goal of aligning it more closely with SPP's current and future market structure.

- The current GIITF is focused on GI study processes and is made up of members with specific background in generator interconnection.
- The questions and issues around the NRIS product impact and are impacted by day-ahead market processes, transmission service, congestion hedging, economic and reliability planning, and FERC policy.
- The task force consensus is that the current makeup of the group is not equipped to address all the various areas that may be impacted by a change to the NRIS product.

Part II

Request for approval to continue development of a proposed Three-Stage GI Study Process

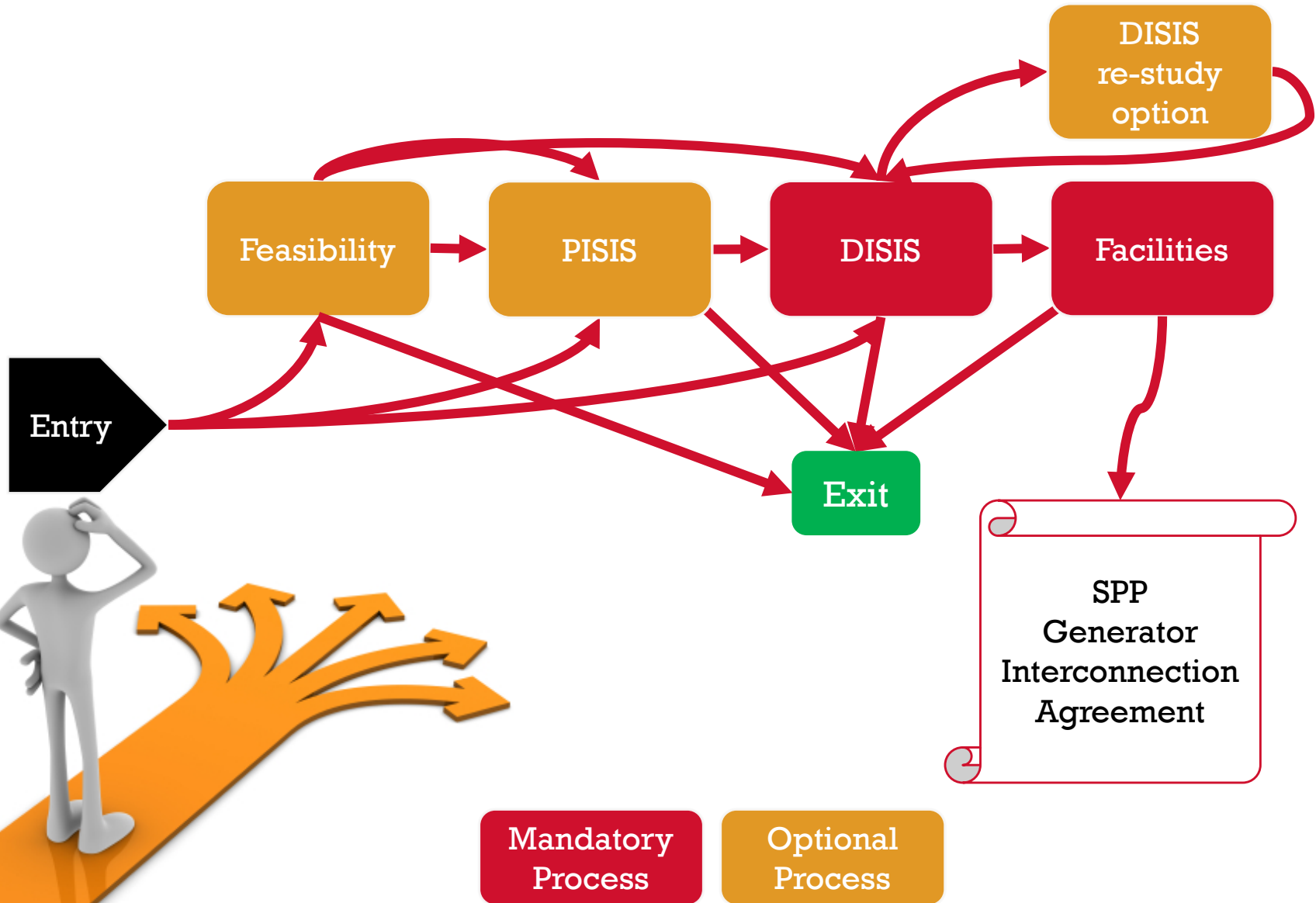
Overview of the Proposed Three-Stage GI Study Process

The Three-Stage GI Study Process would replace the current Feasibility/PISIS/DISIS/Facilities study process.

- Stage 1: Thermal and Voltage Analysis
- Stage 2: Stability Analysis
- Stage 3: Facilities Study
- Financial Security required prior to each stage
 - Entry to Stage 1: \$2000/MW
 - Entry to Stage 2: Total of 10% of allocated upgrade costs
 - Entry to Stage 3: Total of 20% of allocated upgrade costs

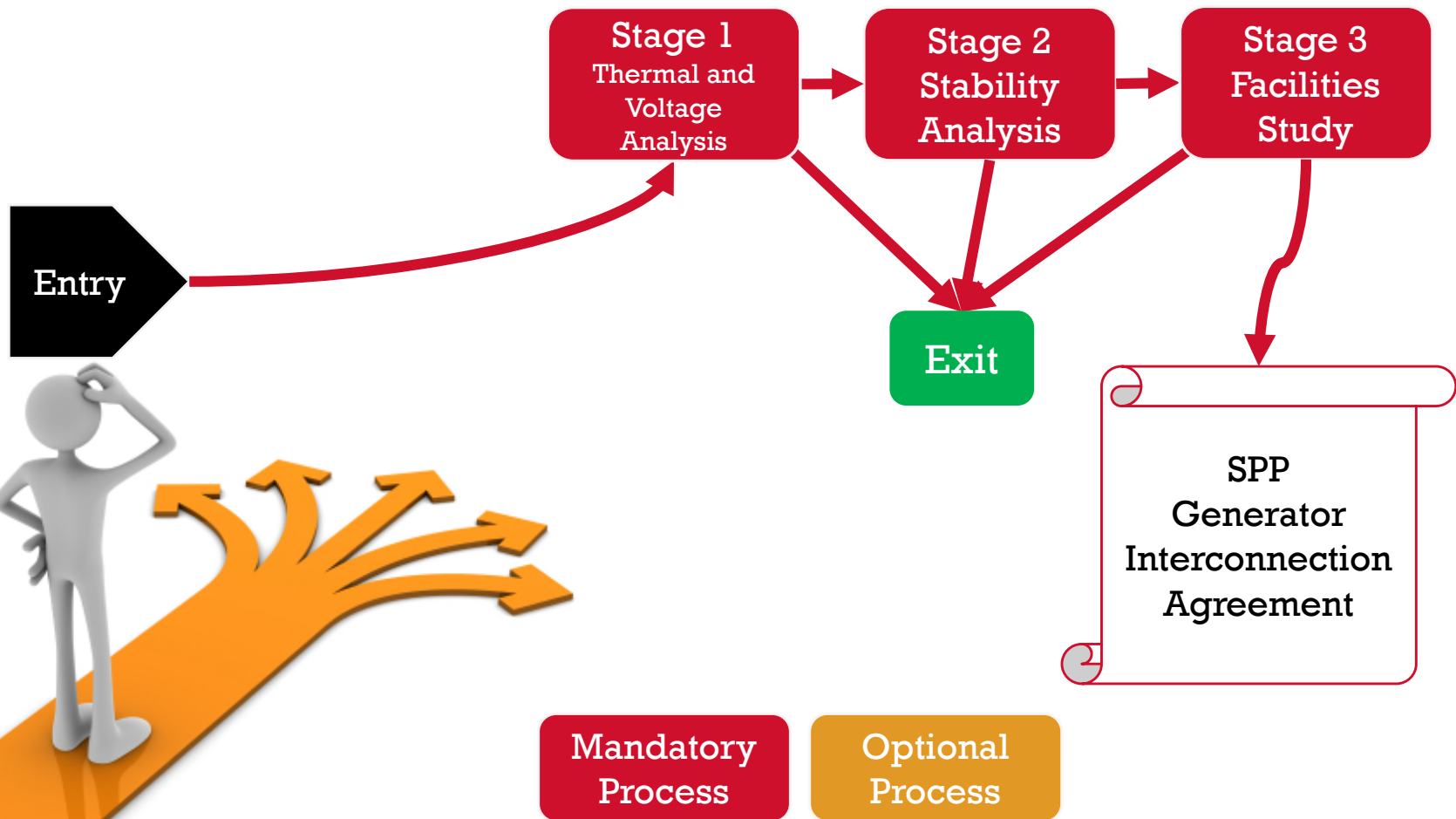
SPP GI Study Process

(current-day)



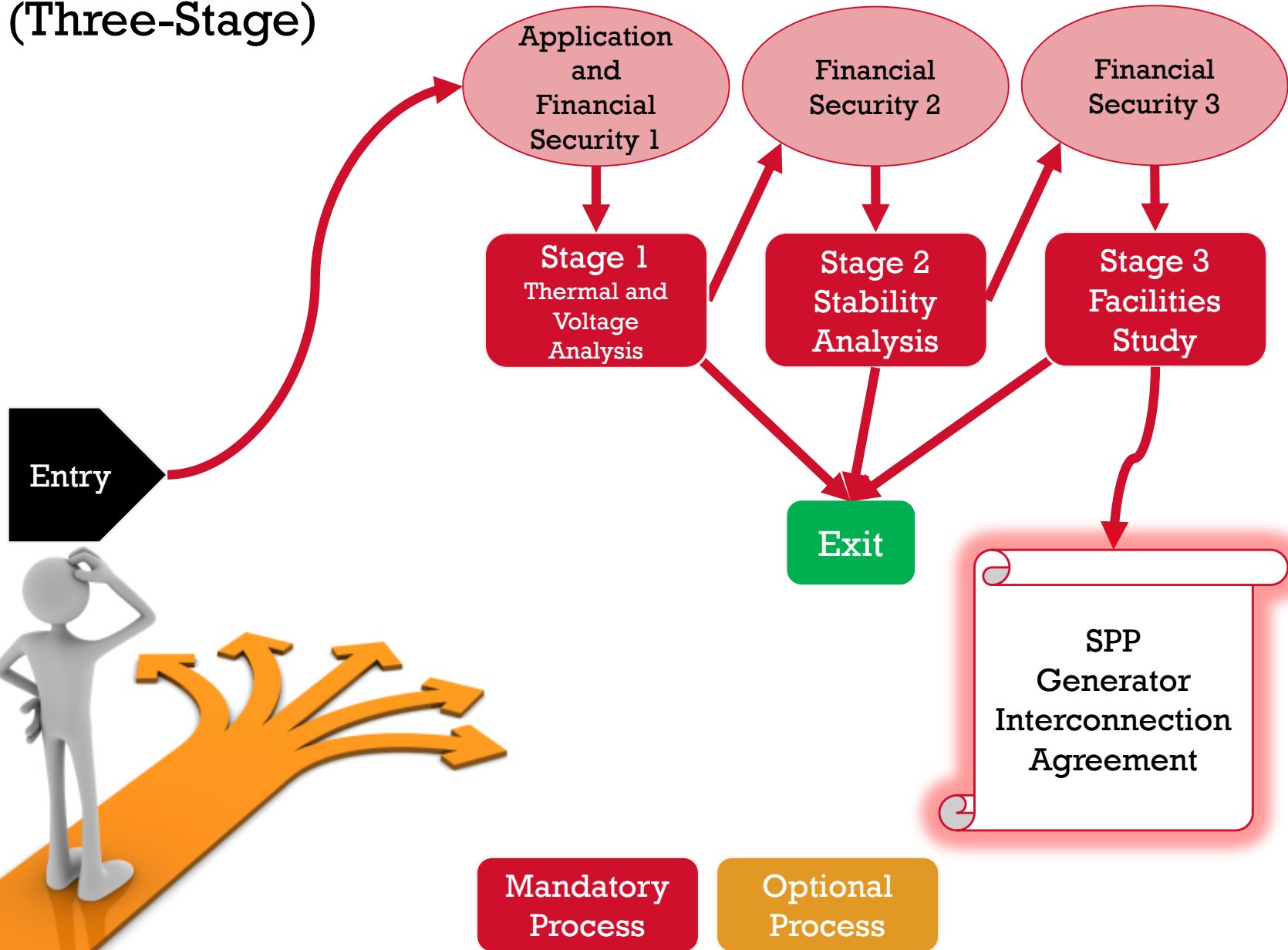
SPP GI Study Process

(Three-Stage)



SPP GI Study Process

(Three-Stage)



Three-Stage GI Study Process

- **Benefits:**
 - Streamlined, simplified, less confusing.
 - Easier for SPP to administer
 - Easier for customers to understand and navigate
 - Majority of upgrades are identified in Stage 1 which permits customers to make an informed decision prior to committing to a lengthy and expensive stability analysis.
 - Tying financial security to upgrade cost allocation encourages customers to weigh the risks of proceeding at an earlier stage.
 - Reduce the number of requests withdrawing late in the process, which reduces re-studies and uncertainty.

Approval of Concept Requested

- Approve the concept of the three-stage study process and direct that a full and complete proposal be provided to MOPC at a later date, or provide alternative direction to GIITF.
- If approved, a more detailed proposal will be presented later for approval to implement.

Part III

Other unfinished business

Charter Tasks Remaining to be Addressed

These items have been discussed in some detail, however the task force has not yet reached the point of making a recommendation.

- Improve the ability to accommodate high volumes of requests by reducing out-of-group dispatch from 20% to 10% in cluster groups where the study generation exceeds the load in light-load cases.
- Reduce the number of application deficiencies that need to be reviewed and resolved by creating a kickoff education process for each new study cycle.
- Improve efficiency of the overall study process and provide more complete results to customers by improving coordination with affected systems.
- Improve efficiency by creating two queue clusters and processes, e.g. North-South. This would create two smaller clusters that would presumably be easier to manage individually and would isolate re-studies primarily to changes that affect that cluster.

Charter Tasks Remaining to be Addressed cont.

These items have been discussed in some detail, however the task force has not yet reached the point of making a recommendation.

- Improve efficiency by limiting cluster study size.
- Create a transition plan to the three-stage process including a “backlog-clearing” process
- Evaluate the FERC Notice of Proposed Rulemaking in RM17-8 which may impact the SPP GIP and recommend changes that will enhance SPP’s ability to effectively comply with new requirements.
- Review deliverability issues that are related to the Aggregate Study process, and recommend whether further detailed review of the Aggregate Study process should be undertaken subsequent to, or concurrent with this task force effort.
- Review ERIS and NRIS impact TDF thresholds and recommend changes that would address concerns about cost-shifting

MOPC Action Item 281

Compare TPL Contingencies between GI, Ag Study, and ITP and bring back differences to MOPC in October 2017.

- Assigned to GIITF, TWG
- GIITF completed its part in this action item and has forwarded to TWG for review.
- If further questions arise from TWG or MOPC, GIITF may need to respond.

Additional Proposals

These items have been suggested as potential improvements subject to inclusion in the task force's scope.

- Add tariff and business practice provisions for wind and solar at the same point of interconnection (“Hybrid Interconnection”)
- Add tariff and business practice provisions for providing “Net Zero” interconnections (e.g. CT and Wind at the same POI limited to the capability of the Wind plant)
- Add tariff and business practice provisions for storage resources (Also part of NOPR RM17-8). Battery and other types of storage present unique challenges that are not addressed in the current governing documents.
- Create a process and reporting requirements for technology changes, increases, and repowers.

Proposed Charter Amendments

In order to complete the remaining tasks assigned to the task force, it is proposed to amend the charter to:

- Extend the term to October 2018
- Address additional proposals already put forth

Summary of GIITF's Recommended Actions to MOPC

The GIITF requests that the MOPC take the following actions:

- Part I: Approve for immediate implementation:
 - Recommendation 2: Publish study models earlier in the process and eliminate the “standalone” analysis, as described in the full text of the recommendation. (tariff change) **MOPC Approved**
 - Recommendation 6: Appoint a stakeholder group with appropriate background and expertise to re-evaluate the purpose, scope, and study requirements of Network Resource Interconnection Service (NRIS) with the goal of aligning it more closely with SPP’s current and future market structure. **MOPC Concurred and MOPC Chair will work with SPP staff to determine an appropriate group to address this task.**
- Part II: Approve the concept of the three-stage study process and direct that a full and complete proposal be provided to MOPC at a later date, or provide alternative direction to GIITF. **MOPC Approved**
- Part III. Approve the amended Charter to extend the GIITF to:
 - Address the remaining Charter tasks
 - Address the identified additional proposals, if MOPC so directs
 - **MOPC Concurred and MOPC Chair will amend the charter as requested.**

Background Information

All Task Force Actions

See the full text of each at the end of the presentation.

Recommendation	Vote	Comments
1: Adopt a simplified application process.	Unanimous	
2: Publish study models earlier in the process and eliminate the “standalone” analysis.	Unanimous	Requesting MOPC approval
3: Adopt a 3-stage study process.	Unanimous	
4: Change amount and timing of required financial security deposits.	Unanimous	Non-member opposed all of the proposals because they all require too much money for the first deposit which would be overly burdensome for small developers.
5: Change risk structure for financial security deposits.	None opposed, 1 abstention (NPPD)	NPPD abstained because the recommendation creates an incentive to downsize the requested amount later in the process rather than right-size it from the outset, thereby leading to re-studies and less certainty in cluster study results rather than more.
5a: Penalty-free withdrawal when costs increase above 25% or \$10,000/MW	Unanimous	
6: Appoint a group to re-evaluate NRIS.	Unanimous	Requesting MOPC approval

Full Text of Recommendation 1

Lisa Szot (Enel) made a motion seconded by Kevin Pera (Xcel) that:

For the current Tariff Process:

1. Reduce the existing four-application process in order to eliminate repetitive data submissions.
2. Allow for carry-over of technical information throughout the study process.
3. Make improvements to the forms' layout and wording to improve comprehension and the likelihood that the correct information will be supplied the first time.
4. Clarify the tariff procedures for acknowledgement, validation, and acceptance as follows:
 - I. SPP shall respond to both interconnection requests and study agreements with a simple acknowledgment of receipt within five business days.
 - II. SPP shall review all interconnection requests and study agreements for completeness and if a deficiency is found, will inform the customer and request a cure within 10 business days. There is no time limit on when a review must occur.
 - III. SPP shall issue an acceptance of the request into the study process after the review of the study agreement finds no apparent deficiencies or after all deficiencies that have been found have been cured. If SPP finds deficiencies after the acceptance has been issued, it shall issue a new deficiency notice and the customer shall cure it within 10 business days.
 - IV. If the customer is not responsive to a deficiency notice, or if the response is not made in good faith, or if the deficiency is not cured after multiple attempts by the customer, the request is deemed withdrawn and there is no further cure period.
 - V. At any time after a Generator Interconnection request is submitted, either SPP, the TO, or the customer may ask that a scoping meeting be held at a mutually agreeable time. A Scoping meeting must be held within 10 business days of request by either party.

The motion passed unanimously with no abstentions.

Full Text of Recommendation 2

Lisa Szot (Enel) moved and Kevin Pera (Xcel) seconded that the following be adopted:

1. SPP Staff will no longer perform the Standalone analysis in the DISIS study
2. Recommended Future State
 - Availability timeframe
 - During DISIS study stage
 - Study Models release requirements
 - Non-Competitive Duty Personnel
 - All study models for the queue cluster which the customer is in
 - Cluster Analysis Before Transfer Cases (BC)
 - Starting point for current-day Stand Alone Analysis
 - Cluster Analysis Transfer Cases (TC)

The motion passed unanimously with no abstentions.

Full Text of Recommendation 3

A motion was made by Lisa Szot (Enel Green Power) and seconded by Kevin Pera (Xcel Energy) to recommend adoption of the three-stage study process, as outlined in the Proposed GI Process Whitepaper, in place of Feasibility, PISIS, DISIS, and Facility Study in the current GI study process.

The motion passed unanimously.

Full Text of Recommendation 4

A motion was made by Lisa Szot (Enel Green Power) and seconded by Andrew Aston (OG&E) as follows:

- We recommend adoption of the following financial security structure
- Proposal #3: Proposal #2 with \$2,000/MW FS2 Floor
 - Stage #1 Entry (FS1): \$2,000/MW
 - Stage #2 Entry (FS2): Greater of (10% * FS2 Cost Factor – FS1) or \$2,000/MW
 - Stage #3 Entry (FS3): 20% * Allocated Cost – FS2 – FS1
- FS2 Cost Factor: is the sum of the following; each upgrade cost multiplied by Generator Interconnection Request's allocation [factor] squared.

The motion passed unanimously.

Full Text of Recommendation 5

A motion was made by Kevin Pera (Xcel Energy) and seconded by Mark Ahlstrom (NextEra) as follows:

We recommend adoption of the at-risk financial security structure where \$2,000/MW based on the project size advancing into Stage #2 becomes at risk at the start of Stage #2. Additionally, 20% of the project's allocated costs based on Stage #2 results, but not less than \$4,000/MW, becomes at risk at the start of Stage #3. Following Stage #3, a true up of at risk financial securities shall occur as part of the Generator Interconnection Agreement (GIA) Initial Payment and milestone schedule based on final study results.

The motion passed with none opposed and Randy Lindstrom (NPPD) abstaining.

Randy abstained because the recommendation creates an incentive to downsize the requested amount later in the process rather than right-size it from the outset, thereby leading to re-studies and less certainty in cluster study results rather than more.

Full Text of Recommendation 5a

A motion was made by Kevin Pera (Xcel Energy) and seconded by Lisa Szot (Enel) as follows:

GIITF recommends to MOPC that risk to Security Deposits be limited by allowing a penalty free withdrawal due to increase of assigned SPP upgrade costs (including but not limited to Network Upgrades, Shared Network Upgrades, and Transmission Owner Interconnection Facilities) between study stages based on both percent increase and cost per MW, as applicable to each specific GI request.

- The Taskforce has considered the following thresholds:
 - 25% - 35% bandwidth range for percent increase
 - \$10k-15k bandwidth range for cost per MW

The motion passed with none opposed and none abstaining.

Full Text of Recommendation 6

A motion was made by James Smith (AEP) and seconded by Randy Lindstrom (NPPD) as follows:

A stakeholder group with appropriate background and expertise be tasked with re-evaluating the purpose, scope, and study requirements of Network Resource Interconnection Service (NRIS) with the goal of aligning it more closely with SPP's current and future market structure.

The motion passed unanimously.