# DRAFT - Attachment K

# South Carolina Public Service Authority
# Transmission Planning Process

## I. Introduction

Transmission Planning is the process by which future changes and additions to the transmission system are identified, developed and initiated for implementation. This process strives to develop a transmission system that will provide desired capability and performance in a cost-effective manner, while reliably meeting the electrical requirements of users of the system.

As explained below, the South Carolina Public Service Authority ("Santee Cooper") has a long history of cooperation and coordination between utilities and customers and among neighboring utilities, in the following interrelated settings: (1) at the utility level; (2) at the Sub-regional level (VACAR); (3) at the Regional level, under the auspices of the SERC Reliability Corporation, Inc. ("SERC"); and (4) between utilities in the region pursuant to ongoing coordinated assessment activities among interconnected utilities.

Santee Cooper believes that processes already undertaken satisfy major elements of the Commission's nine planning principles. Yet, in recognition that more can be done to introduce additional transparency and the opportunity for more input into the transmission planning process, Santee Cooper has expanded its processes in order to promote a more open, transparent and coordinated approach to transmission planning in South Carolina on a local level and on a regional level. The elements of the approach currently undertaken by Santee Cooper, and the new features, as described below, address in an organized way the nine planning principles that the Commission has articulated in Order No. 890, are described below.

## II. Background

### A. Local Transmission Planning

Transmission planning appropriately begins at the utility or system level. At the system level, Santee Cooper engages in planning to meet its obligation to serve native load, and to provide network integration transmission service, generator interconnection service, transmission service under grandfathered wholesale agreements and firm point-to-point transmission service. Planning analyses and interpretations are performed by Santee Cooper using its own data and evaluation criteria that at a minimum address NERC Reliability Standards. Acceptance or approval of resulting plans is based on Santee Cooper's own internal procedures. In some instances, results of this Local Transmission Planning may lead to joint planning efforts among two or more utilities or systems (see below).

For Santee Cooper, a key element of its transmission planning process is responding to the needs of its principal wholesale customer, Central Electric Power Cooperative, Inc., which takes service under a grandfathered wholesale requirements contract. Under this contract, a standing joint planning committee meets regularly to discuss future customer service requirements, to review transmission planning assessments, to share the status of transmission system expansion plans, and to exchange other information necessary to perform transmission planning. Thus, for Santee Cooper, the needs of transmission customers are an intrinsic part of its system's transmission construction plans.

Santee Cooper prepares a transmission expansion plan for its own area, which is developed through an open and nondiscriminatory process, to meet the needs of its native load customers as well as OATT customers (Network Service, Long-term Point–to–Point Service and Generator Interconnection Service). These local planning activities are then coupled with coordinated planning processes, as all transmission providers coordinate with interconnected systems by sharing and assessing transmission expansion plans to determine if they are simultaneously feasible and to ensure that consistent assumptions and data are used in identifying system enhancements required to meet reliability standards.

## B. Regional and Sub-regional Participation

Santee Cooper utilizes an approach coupling local planning activities with (a) facilitated planning, (b) coordinated planning, and (c) joint planning efforts among two or more parties. Layered on top of Santee Cooper's local transmission planning process are regional and sub-regional planning assessments conducted to support facilitated and coordinated planning efforts. The purpose of these assessments is to further augment the reliability of its bulk power system through coordination of the plans of neighboring bulk power systems. Santee Cooper participates fully in the regional and sub-regional processes, organized through SERC and the Virginia-Carolinas ("VACAR") sub-region of SERC, and will also participate in the inter-regional planning process described in "Inter-Regional Participation White Paper", which is posted at Santee Cooper's OASIS along with this document.

### 1. Facilitated Planning (Information Sharing)

Facilitated Planning is an extension of local transmission planning wherein two or more individual systems cooperate by exchanging information about their existing facilities and future plans so that each system or group can make its own independent assessment of plans and performance. Normally, system facility data and computer power flow models are included in the information exchange. Individual systems are responsible for implementing their plans using their own resources or those they negotiate with others. Facilitated Planning may lead to Joint Planning efforts among two or more systems.

Santee Cooper participates in Facilitated Planning through annual joint modeling efforts with neighboring systems. In addition, more frequent exchange of

information occurs, when appropriate, such as during coordinated assessment activities. Facilitated Planning is also achieved with other systems outside of the SERC region through SERC's participation in the Multiregional Modeling Working Group (MMWG) efforts and through information exchanges associated with inter-regional coordinated assessment activities.

To ensure Facilitated Planning is effective, systems share through these modeling efforts their best currently available estimates of future system conditions and plans. The sharing of this information for future years is intended to provide ample time for other affected systems to react, through their local planning processes, to changes in the plans of neighboring systems that may have significant impacts.

## 2. Coordinated Planning

Coordinated Planning is a process in which two or more individual systems agree to exchange necessary data and system plans and collectively monitor and assess conformance to a specific set of criteria and guides, such as the national and regional reliability standards associated with planning. This process inherently recognizes the potential effects of each system's plans on the other interconnected systems in matters of efficiency and reliability. Normally, the most current system facility data and future plans are exchanged and reflected in common computer power flow models which are developed cooperatively by the group and used in studies, assessments, and investigations of the overall interconnected network. Individual systems monitor and assess their individual planned systems throughout the process. Results of such assessments are taken into consideration during local planning processes of the participating systems where specific plans addressing any identified system deficiencies are developed. Coordinated Planning may lead to joint planning efforts among two or more systems.

The end result of Coordinated Planning is that each system has its own plans that meet its individual needs while also meeting the overall interconnected system goals embodied in the national and regional reliability standards. An individual system is responsible for implementing its plans using its own resources or the resources it acquires through negotiations with others.

Information associated with future system conditions and plans are shared in an open manner to ensure Coordinated Planning is effective. Recognizing that planning is a continual process, consistency in the cycle of studies and the types of assessments conducted is maintained so that the local planning processes will have available consistent information from one assessment to the next. In addition, planning horizons assessed are selected such that systems have ample time to adjust local systems plans to address issues identified in Coordinated Planning, or to engage in Joint Planning activities when necessary.

The SERC Reference Document titled "Regional Transmission Assessment Study Processes within SERC" describes in general terms how bulk electric transmission assessment studies within SERC are accomplished and is available at the website of the SERC Reliability Corporation (www.serc1.org). Also available at this website are scope documents describing, in detail, the activities, responsibilities and membership for the associated committees and study groups.

Regional and sub-regional Coordinated Transmission Assessment Studies are routinely conducted in SERC and VACAR to support Coordinated Planning activities. In addition, coordinated transmission assessment studies are also conducted with neighboring systems outside of SERC under inter-regional studies agreements and through direct participation in assessments conducted in other regions.

## 3. Joint Planning

Joint Planning is a process in which two or more systems plan as if they were a single system but do not relinquish their responsibility for planning their individual systems. This is usually done to address a specific concern of the interconnected system or to investigate possible mutually beneficial solutions to a given set of local issues. The systems agree to perform studies and plan system additions based on agreed upon criteria, guides, and performance goals. Virtually all system data and plans are exchanged except for proprietary business data. The systems agree on how the resulting joint plan will be accepted, rejected or approved. The systems usually join together to implement the approved plan through a contractual mechanism that delineates the responsibilities of each system.

For Santee Cooper, Joint Planning typically takes place with a neighboring system where detailed assessments are conducted and negotiations under two-party Interchange Agreements are used to agree on, commit to and implement detailed plans.

## III. Santee Cooper Transmission Planning Process

### A. Introduction

Santee Cooper's transmission planning process is depicted in Figure 1. This diagram shows Santee Cooper's coupling of local planning with facilitated planning and coordinated planning activities.

Many activities associated with transmission planning have specific starting and ending points, such as updating system models and conducting assessments. However, planning overall is not a "once through" process; rather it is a continual process that is regularly carried out to adjust through time for unforeseen events and circumstances, to revise forecasts and projections of future system conditions, and (in an interconnected bulk system comprised of many individual systems) to share information and jointly conduct assessments to support the local planning of individual systems. Figure 1 also depicts the continuous nature of transmission planning.

The interconnected bulk electric system is comprised of many individual systems, each with their own electrical characteristics, set of customers, and geographic, weather, and economic conditions, as well as with differing regulatory, business, and political climates. Each electric system may have detailed reliability planning criteria that is unique to its circumstances while adhering to the NERC Reliability Standards.

#### 1. Planning Criteria and Modeling Assumptions

Santee Cooper plans its transmission system to meet the requirements of the NERC Reliability Standards. In addition, Santee Cooper has established internal guidelines for implementing its Bulk Power Transmission System Planning Reliability Criteria. These guidelines, "South Carolina Public Service Authority Corporate Reliability Criteria and System Planning Guidelines", are posted along with this document.

Assumptions used in the development of internal base cases are consistent with the ERAG-MMWG Procedural Manual. These cases include the following:

a) Firm and non-firm load is modeled,
b) Approved transmission system improvements are included,
c) Approved corporate generation resources are included,
d) Generation resources are economically dispatched,
e) Planned generation maintenance outages are included,
f) Only firm transmission sales/purchases are included, and
g) Dynamic models represent loads using 100% constant current for real loads and 100% constant admittance for reactive loads (consistent with that used by neighboring VACAR systems), unless more specific information is available.

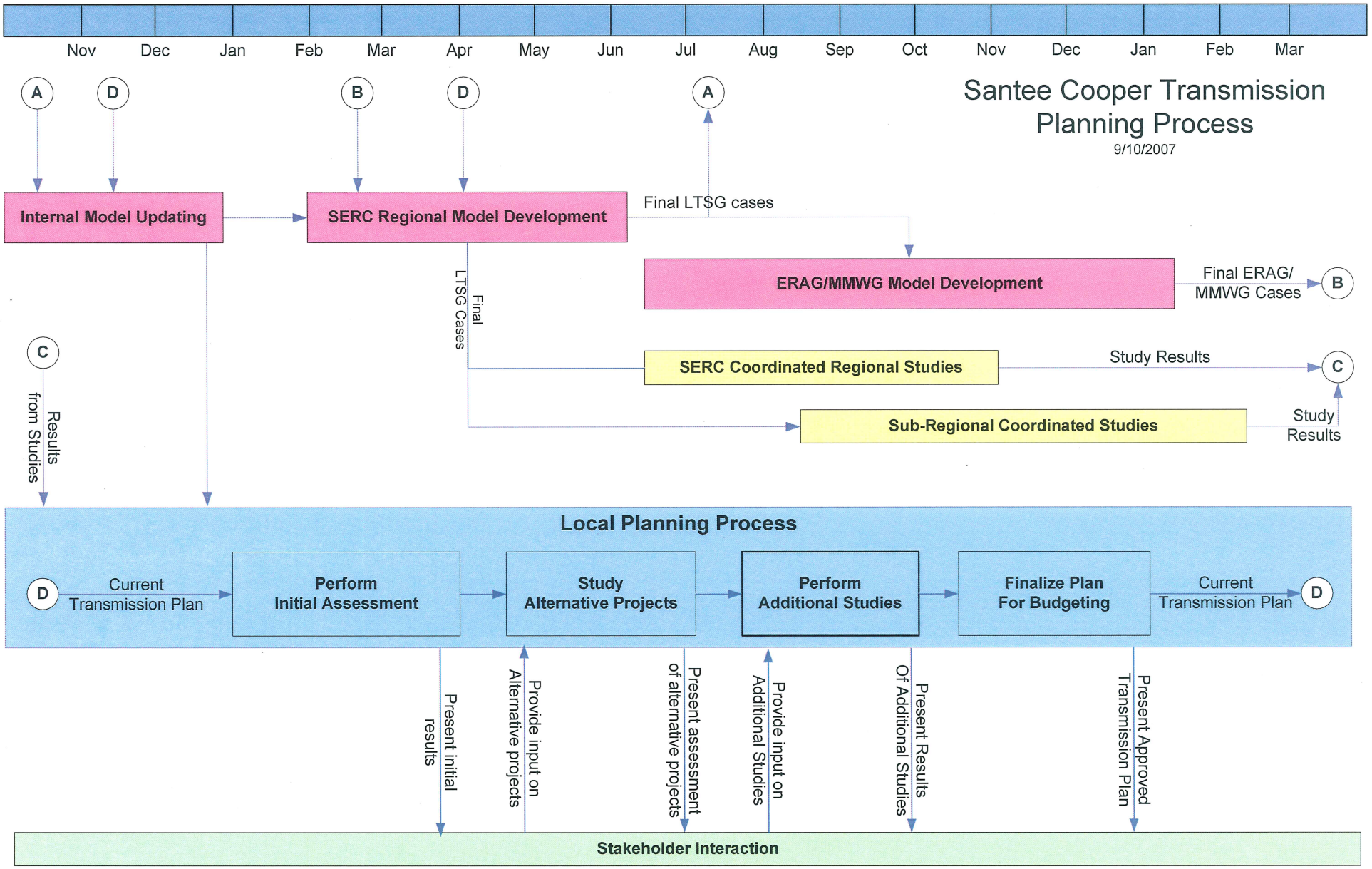


**Figure 1**

## 2. Treatment of Native Loads for Transmission System Modeling

Santee Cooper classifies loads served by its transmission system as "Authority," "Cooperative," "Industrial" and "Municipal." Modeling of forecast loads for Santee Cooper facilities serving Santee Cooper's (*i.e.* "Authority") retail customers is based on specific load service area growth rates provided by Santee Cooper's Distribution Planning group. These growth rates are applied to the previous seasonal coincidental peak demands for each dispersed substation serving retail customer loads. Actual power factors for previous seasonal coincidental peaks are used throughout the forecast period. Adopted reactive planning guidelines are used to forecast reactive demands of these retail customers.

Cooperative customer forecast loads are represented in system planning models using data provided annually by Central Electric Power Cooperative, Inc. for each delivery point substation served by the Combined Authority-Central Transmission System. Cooperative delivery point load projections provided by Central are compiled annually from current Central-member Cooperative forecasts and are typically based on historical growth patterns for the respective service areas of each cooperative. Actual power factors for previous seasonal coincidental peaks are used throughout the forecast period.

For study purposes, typical forecast loads for industrial customers represent the combined total load that may require service at each customer location, including firm, interruptible, supplemental and economy power demand requirements. Non-coincidental peak demands, taken from the previous year's actual metering information, are used to reflect the total load that may require service at each industrial customer facility. These projected demands are held constant throughout the forecast period unless service contract obligations have been identified that warrant changes. Industrial customer reactive load forecasts for the current planning period are derived using each customer's previous actual power factor at the time of the industrial customer's non-coincidental peak.

Transmission Planning utilizes projected municipal customer electric demands reported in the current Santee Cooper Load Forecast as prepared by Santee Cooper's Wholesale Markets group, to provide forecast loads for system modeling and planning activities. For modeling and study purposes, municipal customers reactive load forecasts for the current planning period are derived using each customer's previous actual power factor at the time of the corresponding seasonal coincidental peak.

## 3. Types of Assessments Performed

Santee Cooper performs a variety of assessments to evaluate and plan its transmission system. Steady-state power flow analyses, transient and dynamic

stability analyses, and transfer capability studies, are performed internally as well as in coordinated assessments to ensure compliance with NERC Reliability Standards and internal guidelines.

## B. Stakeholder Participation

Santee Cooper will enhance its current planning and assessment processes (described above) by establishing with South Carolina Electric & Gas Company (SCE&G) a stakeholder process to provide for information sharing and public input consistent with the expectations for open, transparent and coordinated regional planning as articulated by the FERC in Order No. 890. This stakeholder process will be known as the South Carolina Regional Transmission Planning Stakeholder Group (SCSG).

Through SCSG, Santee Cooper and SCE&G will host quarterly meetings to provide a forum to achieve an open and transparent transmission planning process for Santee Cooper's local and regional planning processes. Through the SCSG, all stakeholders will have input and participation in the Reliability Transmission Planning (RTP) processes and the Economic Transmission Planning (ETP) processes.

The ETP process will determine the facilities or system changes on the Santee Cooper transmission system to address congestion and/or the integration of new resources or loads. The final results of this process will include cost and time estimates associated with implementing the facilities or system changes. The intent of the ETP process is to provide information to stakeholders and is not a commitment to build.

## C. Stakeholder Meetings

SCE&G and Santee Cooper will host the SCSG meetings at locations within their service territories. Notification of these meetings will be posted on a public website and also an open email distribution list will be maintained and used to email notices of meetings and other planning-related communications. The schedule for the stakeholder meetings, a broad outline of the substance of these sessions, and the work associated with their conduct are described below. The number of meetings per year and the meeting schedule, discussed above, are subject to change by the stakeholder group over time. However, any revision to this schedule must support existing planning activities in model development and system analyses.

### 1. Fall Stakeholder Meeting

- The Fall Stakeholder meeting is scheduled to occur prior to initiation of the Santee Cooper's annual studies examining system performance against requirements included in NERC, SERC and individual company standards and criteria. This will allow for stakeholder input into the study processes before studies are actually conducted and will ensure that up-to-date information is modeled and included in the study processes.

- Santee Cooper will review the status of upgrades identified in its transmission plans

- Santee Cooper will review its latest transmission plans.

- Stakeholders will provide comments on latest transmission plans.

- Santee Cooper will review key assumptions and data used for internal model development in the RTP process.

- Stakeholders will provide input on key assumptions and modeling data used in the RTP process, including but not limited to: (a) Network Customers' Network Load Forecasts and Network Resources Forecasts; and (b) Point-to-Point customers' forecasts. Information received will be subject to protection for confidentiality.

- A schedule for completion of RTP studies is established.

**2. Winter Stakeholder Meeting**

- Santee Cooper will review the results of:

    - its RTP studies;

    - completed and published two-party and multi-party RTP studies conducted under existing Reliability Agreements;

    - the most recent VACAR, SERC and ERAG reliability assessment studies.

- Santee Cooper will review information on how to acquire all data used to conduct the studies. All data released will be subject to Non-disclosure and Confidentiality agreements.

**3. Spring Stakeholder Meeting**

- Stakeholders will identify and request economic power transfer sensitivities to be studied;

    - All requested sensitivities will be considered except sensitivities that specify specific generation resources;

- Up to 5 sensitivities will be studied per year. If more than 5 are requested, Stakeholders will vote to select priorities.[1] Sensitivities that are not selected by the stakeholder group as one of the 5 studied sensitivities will be studied only if the requestor(s) pays for the additional study efforts.

- Requested economic power transfer sensitivities with sources or sinks outside the Santee Cooper service territory will be advanced to either a regional process or to the "Inter-Regional Participation Process".

- Santee Cooper will review assumptions for Regional Model development.

- Stakeholders will provide additional input on assumptions for Regional Model development.

**4. Summer Stakeholder Meeting**

- Santee Cooper will review results of requested economic power transfer sensitivities, including:

  - Impacted facilities
  - Solution options
  - Cost and time estimates

- Santee Cooper will review information on how to acquire all data and study assumptions used to conduct the power transfer sensitivity studies. All data released will be subject to Non-disclosure and Confidentiality agreements.

## D. Stakeholder Organization

Santee Cooper contemplates that stakeholder membership in the SCSG will be divided into 8 sectors, as follow:

- Transmission Owners/Operators
- Transmission Service Customers
- Cooperatives
- Municipals
- Marketers

[1] For each approved request, the affected Transmission Providers will conduct the studies in the ETP process (e.g., if the requested economic transfer is between SCE&G and Santee, then SCE&G and Santee will conduct the studies as outlined in the regional planning process. If the request is between Santee Cooper and Duke, then Santee Cooper and Duke will conduct the study).

- Generation Owners/Developers
- ISO/RTO
- State Regulatory Representatives (non-voting)

Key features of the stakeholder organization are as follows:

- SCSG participants determine their sector affiliation
- Each sector within the SCSG will have two voting members (14 total voting members)
- One vote per member; majority rule
- Voting members will be determined by the sector membership annually during the Fall Meeting.
- Each Company will have only one voting member in the SCSG
- This will promote an environment where all interested parties can actively participate in the SCSG
- SCSG meetings are open to non-SCSG members
- Once formed the SCSG can modify the initial framework, if needed

## E. Access to Data and Studies

Santee Cooper will utilize the CEII non-disclosure agreement posted in its Business Practices on OASIS to address CEII concerns. In consultation with affected parties, it will develop mechanisms, such as confidentiality agreements and password-protected access to information, to manage confidentiality.

## F. Dispute Resolution

Disputes that arise from procedural or substantive issues as related to Order 890 will be resolved in the following manner:

1. Resolution Procedures. Disputes shall be referred to a senior representative of Santee Cooper and to a senior representative(s) of the individual stakeholder(s) bringing the dispute for resolution on an informal basis as promptly as practicable. In the event the designated representatives are unable to resolve the dispute by mutual agreement within ninety (90) days from the date of receiving written notice of such dispute (or such other period as the disputing parties may agree upon), such dispute then may be submitted to nonbinding arbitration and resolved in accordance with the arbitration procedures set forth below.

2. Arbitration Procedures. Any dispute submitted to arbitration as described above in Paragraph F1 shall be processed in accordance with the Uniform

Arbitration Act and, to the extent not inconsistent therewith, the Commercial Arbitration Rules of the American Arbitration Association ("AAA"), as amended and in effect on the date that demand for arbitration is filed with the AAA. The arbitration shall be conducted by a single arbitrator. Each party to the arbitration shall select an arbitrator candidate. The AAA shall then select an arbitrator from such candidates according to its reasonable judgment. The arbitrator shall issue a decision no later than ninety (90) days from the date a party to the arbitration receives written notice that a dispute was not resolved by mutual agreement, and therefore, must be submitted to arbitration. The expenses of the arbitration shall be borne equally by the parties to the arbitration, provided that each party shall pay for and bear the cost of its own experts, evidence and legal counsel.

## G. Cost Allocation for New Projects[2]

The cost allocation for new transmission facilities or portions of facilities for transmission service or generation interconnection under the OATT of a specific transmission provider shall be in accordance with FERC policy, if applicable.

With regard to reliability upgrades, the costs of such transmission improvements shall be allocated to all users of the transmission system in accordance with State and FERC policies, if applicable.

With regard to economic upgrades, the costs for such transmission improvements shall be assigned/allocated to the requestor(s) of those improvements. For example, significant interregional/multiple control area transmission improvements that allow for access to generation in distant markets would be assigned/allocated to the requestor(s).

[2] Santee Cooper shall retain decision making authority for such decisions related to reliability planning consistent with its statutory responsibilities for reliability. The process described in this Attachment K is not intended to replace or diminish the obligations of Santee Cooper pursuant to its respective open access transmission tariff to, as applicable, provide transmission service to, or undertake construction of transmission expansion projects for, any transmission customer. Transmission expansion options will remain fully subject to the current reservation and request processes conducted through the OASIS, and these processes do not replace such OASIS processes for Santee Cooper.