APS PROCESS FOR TRANSMISSION PLANNING

Introduction

When a Transmission Customer submits a proposed project to Arizona Public Service Company (APS), APS will evaluate that project for inclusion in its Ten-Year Transmission System Expansion Plan (Plan). The process by which that proposed project is included in the Plan, as well as the planning process of WestConnect, the Southwest Area Transmission (SWAT) Planning Committee and the Western Electric Coordinating Council (WECC) is given below.

The system expansion plan for APS is performed and published on an annual basis. The purpose of the plan is to identify and evaluate on a regular basis any future electric transmission system additions that may be required to serve the anticipated area load growth in the APS service territory and/or to accommodate transmission or generation interconnection requests.

Internal APS Planning Process

Input of Transmission Customers

During the 4th Quarter of the year preceding the publication of the Plan, transmission customers are invited to submit their proposed projects to APS's Manager of Transmission Planning. The required information and data is detailed in Section II.A.3.c of Attachment E of APS's Open Access Transmission Tariff (OATT). APS will then evaluate the proposed project and incorporate, if required, in the APS Plan powerflow data base. Please note, however, that this process does not change the requirements detailed in the OATT for transmission service and generator interconnections.

The Plan developed by APS will account for the specific service requests of any transmission customers and will treat any other transmission customers or stakeholders in a comparable fashion. Data supplied by customers will be treated in the same manner as the data used by APS to model its own system loads and resources. The use and deployment of system data for studies will be openly discussed during quarterly meetings.

2nd Quarter Plan Meeting

During the 2nd Quarter of the year, APS will conduct a Stakeholder meeting. This meeting will be informal and will be facilitated by a representative from APS Transmission Planning. During this meeting, stakeholders are invited to present their projects for inclusion in the Plan. In addition, APS Transmission Planning welcomes written comments from all customers and stakeholders regarding any issues that may arise during the development of the previous APS Plan.

This planning meeting will be open to any interested parties. Times and place for the meeting will also be posted on the APS Open Access Same Time Information System (OASIS). Interested parties may send an email to any of the contacts listed requesting their name be added to a distribution list for any planning review group notices or announcements regarding transmission planning issues.

In the event that significant projects develop or other significant events occur, APS will post the nature of those events on the OASIS, along with any related planning meetings that result, and will communicate these events via email to those parties that have requested the information or wish to join in planning meetings.

The details of basic criteria, assumptions, and data associated with the transmission planning process will be disclosed to all interested customers and stakeholders. This also includes the manner in which retail native loads are treated. APS will post a copy of the Plan and list internal planning studies that are currently in progress, including generator interconnection studies and transmission access studies, on the APS OASIS. Copies of these studies and the Plan will be made available upon written request to APS.

As a transmission provider, APS will also make available information regarding the status of any upgrades that are identified in the Plan. Access to underlying data for transmission planning, which would include power flow base cases, associated files for stability studies, and contingency files used for outage studies may be requested and obtained from WECC. This information will be shared within the context of the required Standards of Conduct regulating non-public transmission planning information which is obtained through the planning process.

Confidentiality of Data

APS planning meetings, including Regional, Sub-regional, and Local, are open to all affected parties including stakeholders, commissions, and interconnection customers subject to FERC's Critical Equipment Infrastructure Information (CEII) procedures. This also means planning meetings with WECC planning committees, sub-regional SWAT committees, and local APS Planning meetings are open to customers or anyone who has a stakeholder interest. The confidentiality requirements for the planning data are given in Section II.A of APS's Attachment E.

Construction of Plan Cases

A total of ten (10) plan cases, representing ten (10) consecutive years in the Planning horizon, are constructed and modeled for use in the GE Positive Sequence Load Flow Software (PSLF) power flow program. Construction of the Plan cases begins with a collaborative process through the SWAT Central Arizona Transmission Subcommittee-EHV (CATS-EHV) group. Typically three cases are chosen as starting cases; a near-term case, a mid-term case, and a far-term case. These cases are either newly developed WECC heavy summer base cases or other regionally developed heavy summer base

cases, which were originally developed from WECC heavy summer base cases. These cases will be referred to as starting cases in the ten-year case development descriptions.

The starting case is the data that is outside of, and surrounds the various Arizona control areas. These control areas are referred to as Arizona Area 14 in the GE PSLF data base. Assembly of the base cases begins by removing the data representing the Arizona control area 14 and data from the latest Arizona control Area 14 member's master data files are inserted to replace it. These base cases now represent the latest WECC data for non-Arizona areas and the latest data for the Arizona area.

From the three jointly built base cases, APS plan cases are constructed for the interim years between the three base case years to create a total of ten plan cases. At this point all of the latest system data is available in the plan cases, including applicable third party sponsored projects, and the process to finalize the plan cases for study begins. Beginning with the earliest case in the ten-year plan horizon, the generation, configuration, and schedules will be set based on study assumptions that will be consistently used throughout the ten-year plan study. Each plan case that is developed will have a matching Load & Resource table that shows the complete setup for each plan case.

Case Assumptions

Case assumptions are chosen to model the maximum possible stress on the APS system for a heavy summer peak load condition. This approach will determine at the earliest possible time what elements in the APS system may need to be upgraded or new additions added in order to prevent violations of WECC reliability criteria that may occur due to single contingency outages.

To the extent possible, case assumptions will be applied consistently across all of the ten plan cases to be developed. Some exceptions may be used in the outlying years of the plan due to limited known resources. These exceptions will be noted if they become necessary.

All assumptions that are developed will be open to examination by the third party reviewers and will also be open to suggestions or modifications based on a reasonable need.

Study Methodology

APS will use reliability criteria established by WECC and the North American Electric Reliability Corporation (NERC), and some internal APS criteria, to determine if system plan cases meet acceptable standards. These reliability criteria are available on the WECC and NERC websites through the APS FERC Form 715 submittal. Steady State and Contingency analyses will be performed on each of the ten plan cases. This will identify any criteria violations for any single system outage.

If violations are identified, Planning will suggest a possible corrective action and include the proposed improvement in the ten-year plan. These proposals may be changed or modified at a later time based on further engineering evaluation of the need to remove a criteria violation.

Q-V analyses will be performed on each plan case when they are completed. This will verify that the APS system has the required WECC reactive VAR margin. If necessary, additions to the system will be suggested to correct for any criteria violation and will be included in the plan.

System stability will also be checked to verify that accepted criteria are met.

Plan Development

During the 1st through 3rd Quarter of the year in which the Plan is published, APS will perform the powerflow, stability (if needed) and short circuit (if needed) studies that evaluate projects, both APS's and a third party sponsor, that are needed to reliably serve the native retail/wholesale load in the APS service area and deliver power into or through the APS system.

4th Quarter Plan Meeting

A second Stakeholder meeting will be held during the 4th quarter of the year to discuss the results of the planning studies and the facilities called for in the Plan. Stakeholder input and comment on the Plan is invited during this meeting. Following the meeting, the APS Ten-Year Transmission Expansion Plan will be finalized and posted on the APS OASIS website, by the last business day in January.

If it is determined that the number of meetings is inadequate, APS will increase the frequency of the meetings.

Regional Participation

WECC

Following the completion of the APS Plan, APS will begin to incorporate the proposed projects, both APS's and other sponsors, in the WECC Ten-Year Data Base (Data Base). This Data Base consists of ten years of seasonal and load level specific powerflow cases. For example, one case is the year 20XX heavy summer case, which models a WECC system for the summer of the indicated year during a heavy load period. On a monthly basis, APS submits data to this Data Base for the APS Balancing Area. The schedule for the WECC Base Case development is given on the WECC website.

Through the WECC Data Base, APS planning data and information will be disseminated to other entities.

WestConnect

APS is a member of WestConnect. Under the WestConnect Sub-regional Transmission Planning project Agreement (STP Agreement), APS is obligated to (i) coordinate its Plan with the sub-regional transmission planning performed by the STP Agreement participants and other sub-regional planning groups, (ii) participate in the sub-regional transmission planning groups, as appropriate, and (iii) assist in producing a WestConnect transmission plan.

The WestConnect Annual Transmission Plan is produced through the WestConnect Planning Management Committee formed through the STP Agreement. APS's planning data, including APS sponsored projects and projects sponsored by third parties that are incorporated in APS's Plan, is submitted to WestConnect and is included in this sub-regional transmission plan.

Briefly, the WestConnect transmission planning process focuses on planning local, sub-regional, regional and external interconnection transmission facilities and provides for both individual and aggregated simultaneous feasibility assessments of such transmission facilities. The WestConnect planning process evaluates the adequacy of the combined STP Agreement participant's plans and performs a long-term review of the proposed facilities.

The outline of WestConnect meetings is given in Section II.D of APS's Attachment E. Any party can become a signatory to the STP Agreement.

SWAT Planning Committee

The SWAT Committee is comprised of transmission owners, transmission operators, generator owners, regulatory personnel and other entities. SWAT is open to all parties and invites all parties to attend its meetings. The outline of the SWAT meetings is given in Section II.D of APS's Attachment E. A Charter is currently being developed for SWAT which will further define and formalize the role of SWAT in sub-regional transmission planning.

SWAT is composed of various sub-regional work groups. APS participates in all SWAT sub-regional work groups, except the New Mexico Work Group. Members of these work groups, using data and powerflow cases from the WECC Ten-Year Data Base, perform high level studies of proposed projects in the work group area.

During the 4th Quarter meeting of the SWAT Oversight Committee, study requests and third party projects are solicited for inclusion in the up-coming SWAT planning cycle. The planning studies are then performed by SWAT, through the SWAT work groups, and preliminary results are given during the SWAT 2nd Quarter meeting. During the 3rd Quarter SWAT meeting, study results are presented and key results, findings and

conclusions are approved. During this process stakeholder input is invited. It is also during this meeting that SWAT invites study requests for future planning cycles. The results of the studies are then finalized and the studies are posted on the WestConnect website at www.westconnect.com.