Proposed Western Transmission Planning Process Strawman for TEPPC and Sub-regional Review[1]

Purpose

By May 29, 2007, transmission providers must post a "strawman" proposal for compliance with each of nine planning principles adopted in the Federal Energy Regulatory Commission's (FERC) Order No. 890. This document describes a proposed strawman that could be used to describe a Western Transmission Planning Process that would meet the FERC requirements. This proposed strawman has been drafted to support continued discussion by sub-regional groups and was presented to the WECC TEPPC for its review on May 18, 2007. The proposed strawman is ultimately intended for use as a "proof of concept" at FERC Technical Conferences to be held June 13, 2007 in Park City, UT and June 26, 2007 in Phoenix, AZ.

Summary

This strawman proposes utilization of transmission planning functions already in place in the West with additions as needed to meet Order No. 890. The strawman has four components: (1) a white paper describing the roles of WECC/TEPPC, sub-regional planning groups and individual transmission providers as part of an integrated planning process, (2) a suggested outline for WECC/TEPPC planning protocol, (3) an outline of a possible form for a sub-regional planning protocol, and (4) a placeholder for later description of a transmission provider's specific process for addressing the planning responsibilities that remain with the transmission provider.[2]

Discussion

For some years, the Western Interconnection has been developing an integrated planning process that includes features that address both system-wide issues and more localized issues at a sub-regional level. The West has long recognized the challenge of planning for west-wide transmission needs, specifically the difficulty of developing projects that cross boundaries between transmission providers and may also involve the interests of more than one state and/or sub-regional group. The need to consider the economic impacts of regional planning was brought into sharp focus by the energy shortages of 2000-2001. With impetus provided by the Western Governors, several wide-area transmission congestion studies have been undertaken since 2001. Based on that experience, a decision was made in 2005 to formalize the

[1] For the purpose of this document, the term "Region", "Western Interconnection" and "West-wide" are synonymous. The term "sub-region" has be used here to designate portions of the Western Interconnection for which planning groups have been organized that cover less than the area of the full interconnection. This usage has been selected for consistency with language of the WECC/TEPPC Charter and the other documents that flow from that charter.

[2] The complete planning protocols and the text of Attachment K will be prepared based on the guidance obtained during these two Technical Conferences, with filings by individual transmission providers by October 11, 2007.

study process under WECC. WECC organized the Transmission Expansion Planning Policy Committee (TEPPC) to provide west-wide study and data services for congestion analysis, process coordination and transmission planning leadership across the Western Interconnection.

At the same time, the need for a more localized focus on the West's sub-regions was also recognized. As a result sub-regional planning groups have also formed (or are being formed) to provide for more formalized and detailed planning at the sub-regional level with TEPPC providing a forum for collaboration among the sub-regional planning groups.

In February of 2007, FERC included a set of transmission planning requirements in Order No. 890.[3] An Attachment K, "Transmission Planning Process," is to be added to the Open Access Transmission Tariffs (OATT) of the transmission providers in compliance filings to be made by October 11, 2007. FERC also required transmission providers to post a strawman of their proposed planning process by May 29, 2007 on their OASIS website. The strawmen posted will be used as the basis for discussion during the FERC Technical Conferences scheduled for June 13 in Park City, UT and June 26 in Phoenix, AZ. The documents to be filed October 11, 2007, Attachment K and associated planning protocols, will be prepared based on the guidance obtained from FERC Staff during these two Technical Conferences.

In comments filed during the rulemaking that resulted in Order No. 890, many Western parties argued that the Western planning process embodied in TEPPC and the sub-regional planning groups could meet FERC's planning principles. The issuance of FERC's final order reinforced the desire of the Western transmission providers to make use of the existing institutional structure, enhanced as necessary, to provide an integrated Western Transmission Planning Process that meets the nine principles of Order No. 890.

A proposed Western transmission planning process strawman is described in the remaining sections of this document that is based on using existing Western institutions. Concepts for this proposed strawman were presented in an open workshop held on April 10, 2007. This proposed strawman will be used as a vehicle for organizing discussion by TEPPC on May 17, 2007 and by sub-regions in their calls and other meetings held to consider the strawman prior to the May 29, 2007 posting deadline. The four parts of the proposed strawman, which would also be the elements of Attachment K, are:

(1) A narrative white paper describing the Western Transmission Planning Process, that explains the division of labor among groups and that links the strawman components into a integrated, coherent west-wide planning process.
(2) An outline of a TEPPC Transmission Planning Protocol that will provide a detailed description of WECC/TEPPC process and of the functions covered

[3] Order No. 890 was published in the Federal Register on March 15, 2007.

by WECC, specifically, organization, participation, communication, data collection, a west-wide study cycle, and mechanisms for achieving collaborative outcomes among sub-regional groups.

(3) A generic outline showing a representative Sub-regional Transmission Planning Protocol that will describe the planning process of a given sub-regional group that meets the Order 890 requirements and is part of the overall Western transmission planning process.

(4) A placeholder for the portion of Attachment K in which the transmission provider will describe the process for addressing the planning activities that remain the responsibility of the transmission provider.

Under this structural approach, Attachment K would be a relatively simple document, with the bulk of the regional and sub-regional planning processes described within the two protocols. Because this is a "proof of concept" document, the two protocol outlines (Parts 2 and 3) have not been expanded beyond a skeletal form and Part 4 will be developed later. Further development of these sections will occur if the overall concept is still deemed workable after receiving feedback from FERC staff at the June 2007 Technical Conferences.

Part 1
White Paper on Western
Transmission Planning Process

1. Introduction

This paper describes the elements of the Western Transmission Planning Process which is proposed to meet the Federal Energy Regulatory Commission's (FERC) Order No. 890 transmission planning requirements. The proposed process uses existing institutions, adapted as necessary, to meet FERC's nine planning principles. This paper covers the role for the Western Electricity Coordinating Council (WECC) and the role of sub-regional groups in this overall planning process. It also describes the use of a synchronized study cycle to provide unity and cohesion to transmission planning within the West.

2. The WECC Role

2.1 Background

WECC has long recognized the need for an interconnection-wide approach to transmission expansion planning. Since the major interconnections were completed in the 1960s and 1970s, the Western Interconnection has operated as a single system. The development of the transmission rating process is an example of a west-wide approach to transmission system planning and operations. Development of a coordinated approach to the operation of phase shifting transformers[4] is another example of an interconnection wide approach to reliability planning. Many other examples could also be cited of a regional approach to reliability planning in the West.

In recent years, it has become apparent that the economic dimensions of the transmission planning process need to be examined beyond the boundaries of any single company or control area. The energy shortages that occurred in 2000-2001 clearly showed the extent of economic interdependence within the region. The difficulties of any sub-region clearly affect the entire interconnection. In the wake of these difficulties, the Western Governors Association[5] provided the impetus for a series of economic studies of the transmission system. These were ad hoc efforts, organized to meet a then current need.

These activities made it apparent that an ongoing planning process was needed that included economic evaluation of transmission expansion needs. During 2005 and early 2006, WECC organized the Transmission Expansion Planning Policy Committee

[4] Also called phase angle regulators or PARS.
[5] The Western Governors have been concerned with both the reliability and the economic performance of the Western Interconnection, particularly how adequate transmission infrastructure can be put in place to meet system needs.

(TEPPC) to provide west-wide study and data services, process coordination and transmission expansion planning leadership across the Western Interconnection. TEPPC became a formal committee of the WECC board in April, 2006. The database developed for the SSG-WI[6] effort was transferred to WECC for use in the TEPPC study effort.

In its Order No. 890, FERC adopted a requirement for transmission service providers to participate in a regional transmission planning process, to be described in an Attachment K to the transmission provider's Open Access Transmission Tariff. Many of the organizations that make up the Western Interconnection offered comments in the rulemaking that led to Order No. 890. Based upon their experience and the formation of TEPPC, those organizations indicated that they the believed FERC's planning principles could best be implemented through existing organizations in the West. The proposed strawman for a Western Transmission Planning process uses such existing organizations in a layered planning structure, with WECC providing the "glue" for integrating the layers into a cohesive regional approach to transmission planning that includes the coordination of sub-regional processes.

2.2 TEPPC and Region-wide Services

TEPPC's role in the Western transmission planning process is to provide region-wide services in three areas described in the TEPPC Charter:

(1) Overseeing development and management of a common database for economic analysis of transmission needs,
(2) Providing policy and management of the regional planning process across the region and
(3) Guiding analyses and modeling for Western Interconnection economic transmission expansion planning.

The TEPPC database was initiated by the transfer of the SSG-WI database to WECC. TEPPC is in the process of updating the database for its 2007 study program. The database contains publicly available information for economic inputs to avoid confidentiality issues consistent with the openness and transparency principles of Order No. 890.[7] The database will not only be used for TEPPC's own regional studies, but will be available for use by sub-regional planning groups, individual transmission providers and other stakeholders. The TEPPC database will provide an open, transparent starting point for the latter more specialized studies.

TEPPC's second major role is to provide policy guidance and management of the regional planning process. TEPPC seeks to foster an impartial and transparent process that evaluates the economic benefits of transmission expansion alternatives

[6] Seams Steering Group – Western Interconnection (SSG-WI).
[7] The TEPPC database includes information on transmission infrastructure, loads, load shapes, unit heat rates, fuel costs, etc. needed for production cost simulation studies.

and provides integration among the sub-regional planning efforts. The TEPPC process is open to all interested stakeholders, including transmission providers, generators, load-serving entities, federal and state/provincial energy departments and regulatory bodies, tribal governments, end-users and environmental groups. Because the process is new, TEPPC has built adaptive features into its process that will refine and improve the study results from year to year. More detail on this adaptive self-improvement process is provided below in the description of a proposed synchronized study cycle.

The third TEPPC role is to provide guidance to analysis and modeling done for economic transmission planning within the Western Interconnection. As described in its charter, TEPPC is to both conduct actual studies and to provide tools and improved models for these and other similar studies. TEPPC studies will make an assessment of congestion and congestion costs and evaluate the economics of resource and transmission alternatives, with both wire and non-wire options considered. TEPPC's focus is on region-wide screening studies. Evaluation of alternatives may include concepts for relieving congestion, reducing and/or stabilizing regional production costs, diversifying fuels or achieving renewable resource and clean energy goals.

While the models currently used for the study of transmission system economics provide valuable insights, there is a good deal of room for improvement in these models in order to meet the particular needs of the Western Interconnection. For instance, hydro-electric generation with significant storage capability is a major factor in Western system operations and economics, however in existing production cost models, the hydro system is typically modeled as either a simplified run-of-river or peak-shaving resource. To better represent the actual usage of major Western hydro systems, a more accurate hydro model is needed, particularly for use in congestion studies. Similar model improvements are needed in other areas as well, i.e., transmission constraints, wind generation, phase angle regulators, line losses, DC lines, etc. TEPPC has established a specific work group for prioritizing and improving these models each year as part of each annual study cycle.

2.3 Regional Collaboration

TEPPC also provides a forum for regional collaboration on major transmission projects; in effect TEPPC will act as an incubator for regional project development. By identifying needs and communicating those needs, projects can be developed by individual organizations or consortiums to meet identified transmission needs. The validity of this approach can be seen from the results of the SSG-WI studies which identified needs and project opportunities in the Western Interconnection. The SSG-WI studies contributed significantly to the wide array of announced potential projects currently under consideration.

While TEPPC's focus is on issues whose effects span the interconnection, TEPPC will also provide the setting for collaboration among the sub-regional planning groups.

Using the synchronized study cycle described below, information will be flowing among the sub-regional groups through TEPPC activities. The formation of joint study and development efforts will be facilitated by information communicated to all TEPPC participants. Thus, the TEPPC forum will provide openness and transparency for inter-sub-regional planning activities. Consideration of project combinations or consolidation of efforts to jointly meet transmission needs will be facilitated both by TEPPC's communications activities and by the results of its study program.

2.4 Linking Economic and Reliability Planning

As TEPPC activities reveal transmission needs and projects are developed by the industry to meet those needs, these projects will naturally move from the realm of economic planning to the reliability planning activities that fall under WECC's Planning Coordination Committee (PCC). TEPPC will provide the economic intelligence needed by project developers, whether they be developers of demand-side services, builders of new resources or developers of new transmission, to develop a business plan, identify investors and customers, seek regulatory permits and approvals and finally construct, install and operate their equipment or facilities. As the projects move from the formative stage toward commitment of capital, projects will enter the existing WECC Regional Planning Process which leads to consideration of stakeholder needs and potential participation by other parties before the project configuration is finalized. After that, the WECC Three Phase Rating Process, for path rating and progress report review, leads to identification of transmission capacity ratings and reliable operating conditions.[8]

3. The Role of the Sub-regional Groups

3.1 Addressing Both Regional and More Localized Needs

Given the geographic scale of the Western Interconnection, no single regional activity could address the needs of all participants. The West's geography imposes an inherent sparsity on the transmission network, and there is a wide diversity in both climate and resource concentration across the West. What members of a sub-regional planning group may see as a high priority concern may not have sufficient impact across the region to warrant study by a regional group. For this reason, the formation

[8] The procedures for project rating review and progress reports address the reliability impacts of transmission projects. The phases of the process are shown in Figure 1 of the PCC Handbook (http://www.wecc.biz/modules.php?op=modload&name=Downloads&file=index&req=getit&lid=215).
After regional planning review, a project that is to be part of a formally rated transfer path enters a three phase process that results in an approved capacity rating for the project prior to its operation. The studies conducted by the project sponsor as part of the planning process include power flow and transient stability analysis. The study results are subjected with peer review through PCC and its Technical Studies Subcommittee (TSS) to determine that when operating within the approved capacity rating, the project will be in compliance with NERC and WECC planning standards.

of TEPPC did not lessen the need for more locally focused sub-regional groups. The proposed Western Transmission Planning Process endeavors to capture the best of both worlds.

The sub-regional planning groups were organized (or are being organized) to address common issues on a more localized basis. These organizations are much closer to the loads being served and to smaller load serving organizations, such as municipal or rural electric cooperative systems, thereby increasing participation of such organizations in transmission planning. The West's layered approach of TEPPC and sub-regional planning groups, serves to broaden rather than restrict overall participation. Each of the sub-regional groups will have an open, transparent planning process that will be linked to the TEPPC process. The development of joint projects that meet specific needs for more localized transmission is much more likely at the sub-regional level than it would be if only a single regional organization existed. The sub-regional planning groups may also perform reliability studies. Sub-regional groups will develop transmission alternatives and make technical and economic evaluations of those alternatives. They will form study groups based upon the natural topology of the transmission system and long standing relationships. In some sub-regions the majority of the transmission enhancements and upgrades that occur result from sub-regional planning activities.

3.2 The Sub-Regional Groups

The sub-regional planning groups anticipated for the Western Transmission Planning Process are:

(1) NTAC – Northwest Transmission Assessment Committee of the Northwest Power Pool (NWPP) is an open forum to address forward looking planning and development for a robust and cost effective NWPP area transmission system. NTAC was formed in 2003 after the Transmission Planning Committee elected to expand its "scope of activities to include expansion planning at a broad conceptual level." Membership includes NWPP members and other interested parties.

(2) ColumbiaGrid – ColumbiaGrid was formed in 2006 to improve the operational efficiency, reliability, and planned expansion of the Northwest transmission grid. ColumbiaGrid has substantive responsibilities pursuant to a series of Functional Agreements with Members and other Qualified Non-Member Parties. These agreements relate to planning, reliability, OASIS, and other development services. ColumbiaGrid's sub-regional planning responsibilities are set out in the Planning and Expansion Functional Agreement ("PEFA"), which coordinates planning activities on a regional basis through a single-system approach. Participation in the PEFA is open to all qualified non-member parties as defined in the PEFA, which includes Northwest transmission providers,

transmission customers, and others. In addition to ColumbiaGrid, the current parties to the PEFA ("Planning Parties") include Avista Corporation, Bonneville Power Administration, Chelan County Public Utility District, Grant County Public Utility District, Puget Sound Energy, Inc., the City of Seattle, acting by and through its City Light Department, Snohomish County Public Utility District, and the City of Tacoma, Department of Public Utilities, Light Division (dba Tacoma Power). The Planning Parties include transmission owners subject to the Commission's ratemaking jurisdiction (i.e., public utilities with an OATT), as well as those that are not). The planning process outlined in the PEFA relies heavily on the use of study teams that are open to all stakeholders and interested parties. The process also requires notification of affected parties and requires that adverse impacts from projects be identified and mitigated.

(3) NTTG – The Northern Tier Transmission Group is comprised of transmission owners serving the Northwest and Mountain states. They are committed, with the active cooperation of state governments and open participation of affected stakeholders, to improving the operations of and charting the future for the grid that links their service territories. Participants in NTTG are committed to increase efficient use of the grid and to develop the infrastructure needed to deliver new renewable and thermal power resources to consumers. NTTG's participating utilities are Deseret Power Electric Cooperative, Idaho Power, NorthWestern Energy, PacifiCorp and Utah Associated Municipal Power Systems with additional members of the steering committee from the Idaho Public Utilities Commission, the Oregon Public Service Commission, the Utah Public Service Commission, the Montana Public Service Commission, the Montana Consumer Counsel and the Wyoming Public Service Commission.

(4) WestConnect – WestConnect is comprised of utility companies providing transmission of electricity in the southwestern United States, working collaboratively to assess stakeholder and market needs and develop cost-effective enhancements to the western wholesale electricity market. WestConnect has three planning areas: Southwest Area Transmission (SWAT), the Colorado Coordinated Planning Group (CCPG) and the Sierra area. The transmission owners of WestConnect are Arizona Public Service, El Paso Electric, Imperial Irrigation District, Nevada Power, Sierra Pacific Power, Xcel (Public Service of Colorado), Public Service of New Mexico, Sacramento Municipal Utility District, Southwest Transmission Company, Tri-State Generation and Transmission, Tucson Electric Power and the Western Area Power Administration (Desert Southwest Office, Rocky Mountain Office, and Sierra/Nevada Office).

(5) California – A sub-regional planning organization is being formed that will include the California ISO and other transmission service providers within California.

3.3 The Sub-Regional Planning Group Requirements

WECC/TEPPC will promote openness and transparency at a regional level, while the sub-regional planning groups will promote openness and transparency within their defined geographic and electrical foot prints. The sub-regional planning groups will meet the FERC requirements for openness, transparency, etc. and will hold regularly scheduled meetings that are open to all stakeholders and that are fully compliant with the Standards of Conduct. Such meetings will provide a forum for open discussion of transmission needs concerns, plans, and issues. The sub-regional planning groups will participate in TEPPC, and in turn TEPPC maintains a list of sub-regional groups with links to the relevant websites of sub-regional groups. The sub-regional groups will continue to encourage participation by local, state and federal agencies within the scope of their portion of the interconnected network.

4. A Cohesive Approach to Congestion Studies

4.1 The Congestion Study Principle

One of the new requirements imposed on transmission providers in Order No. 890, is compliance with the congestion study principle. The FERC found that:

> "… to represent good utility practice and provide comparable service, the transmission planning process under the *pro forma* OATT must consider both reliability and economic considerations."[9]

They further observed that:

> "The purpose of this principle [congestion studies] is to ensure that customers may request studies that evaluate potential upgrades or other investments that could reduce congestion or integrate new resources and loads on an aggregated or regional basis (*e.g.*, wind developers), not to assign cost responsibility for those investments or otherwise determine whether they should be implemented."[10]

The Commission directed that in the planning process to be described by Attachment K, stakeholders be given a right to request a defined number of high priority studies annually. Transmission providers were also directed to consult with their stakeholders during the development of Attachment K to develop a means to allow transmission providers and stakeholders to cluster or batch requests for the economic planning studies for efficient performance of such studies.[11]

The study activity provided for in Order No. 890 is separate from the OATT studies specified for transmission service requests and generator interconnection requests, which will continue to be done under the appropriate provisions of the OATT. The congestion studies described by Order No. 890 provide stakeholders with information which they can use for: developing transmission expansion policies, identifying needs for demand-side resources, establishing transmission needs for alternative energy sources (e.g., wind or solar), making requests for transmission service, identifying best locations for generator interconnection, developing potential transmission projects or non-wire alternatives for congestion relief, etc.

4.2 Synchronizing the Study Cycle

Implementing the congestion study requirement on a provider-by-provider basis would be very costly and would likely result in a great deal of duplication. Further, congestion issues are typically a product of system-wide dispatch and not solely of

[9] FERC Order No. 890, ¶542, p.310.
[10] FERC Order No. 890, ¶544, pp 311-312.
[11] FERC Order No. 890, ¶¶546-547, pp. 313-314.

dispatch within a single provider's transmission facilities. Performing production cost congestion studies at the regional or sub-regional level is therefore both more effective and more efficient. At the same time, because far more entities have an interest in regional studies, a balance must be struck between the desires of all stakeholders for information and the cost of producing that information. The proposed approach to meeting that balance is to include an annual synchronized study cycle in the Western Transmission Planning Process. The annual synchronized study cycle is proposed to have the following elements:

a) The WECC/TEPPC database is the starting point for studies by TEPPC, sub-regional groups and transmission providers. This database will use publicly available information for expansion plans, such as state Integrated Resource Plans, and economic inputs from public sources to avoid confidentiality issues regarding data transparency.

b) Each year a request window[12] would be open during which stakeholders could submit requests for economic transmission expansion planning studies. The requests could be submitted to TEPPC, to one of the sub-regional groups or to individual transmission providers.

c) At the close of the window, TEPPC would convene an open meeting, or set of meetings, for developing the synchronized study plan. All requests received from whatever source, would be combined into a single list. Possible clustering or combinations of requests would be considered in open discussion as well as the relative priority of studies. Based on these open discussions, proposals would be made for the studies to be performed and the organization best suited to lead each study would be identified. Each organization will need to determine the number of studies its resources can undertake for each cycle.

d) Once the list of studies is consolidated, leads for each study would be assigned based upon the principle of matching expertise and scope of interest to find the best organization to lead each study. For instance, TEPPC could take the lead for studies with west-wide impacts or perhaps where the nature of the study was such that it could best be addressed by TEPPC. Requests dealing with more localized network issues, such as loops around a metropolitan area or upgrade of facilities in a specific restricted area, might best be addressed by a sub-regional group. A request so specific that it involved only the facilities of a single transmission provider might best be led by that transmission provider.

e) The sub-regionally led studies might cover different time intervals than those being considered by TEPPC, or they may be follow-up to the previous results of TEPPC studies. The overriding principle is to assign the study requests,

[12] The window could be open for a few months following the release of reports from the previous study cycle, or it could be continuously open window with a cut-off date for consideration of a request for the next annual study cycle.

suitably clustered, to the organization best able to address the request based on stakeholder input and on the lead organization's technical expertise and knowledge of the issues.

f) The development of the study program and assignment of project leads would also consider the best use of available resources for completing the studies. This would involve the prioritization of the study requests. Prioritization may be simplified by the clustering of studies or combining of like requests, but if the volume of requests exceeds study resources, the priority and order of studies will need to be part of the study plan development discussions.

g) The resulting set of assignments would become the Western study program for that year's study cycle. By conducting this processing and prioritization of requests in an open forum, stakeholders will be a party to the discussions and fully informed regarding the choices made to develop a study program that can be efficiently and effectively performed.

h) At each quarterly meeting of TEPPC, or more often if required, the lead organization for each study in the program would report on its progress, indicating whether further coordination/collaboration is needed. For instance a sub-regional group might discover that they need the participation of one or more of the other sub-regional groups to complete an assigned study. By providing this regular forum for coordination of study work, the resulting set of studies will be more cohesive than they would be in the absence of the synchronized study cycle.

4.3 Illustrating the Synchronized Cycle

To demonstrate how a synchronized study cycle would work, we can examine the cycle being use for TEPPC's 2007 studies and consider the changes needed for it to synchronize the studies of both TEPPC and the subregional groups. The TEPPC Study Cycle is show in Figure 1. The process is designed to be adaptive, that is, it has feedback loops which enable TEPPC to learn from both the study results and stakeholder experience to make changes to subsequent cycles. These changes may be alterations of the process, new models and methodology to improve the quality of results, or they may reflect new needs that develop as circumstances change over time.

In Figure 1, the feedback information from previous studies goes into the development of the next cycle study plan (the left most box). Two activities are triggered by the study plan – historical analysis of congestion events and congestion studies using production-cost simulation with database preparation being a prerequisite to the congestion studies. Once prepared, the database is available to TEPPC, sub-regional groups and others wishing to do their own studies. In addition to the study work, there will be ongoing development and improvement of models. These three information

feeds (historical analysis, congestion study results and reports on model improvements) are evaluated and the study report for the cycle is prepared.

Figure 1
The Annual TEPPC Study Cycle
An Adaptive Process

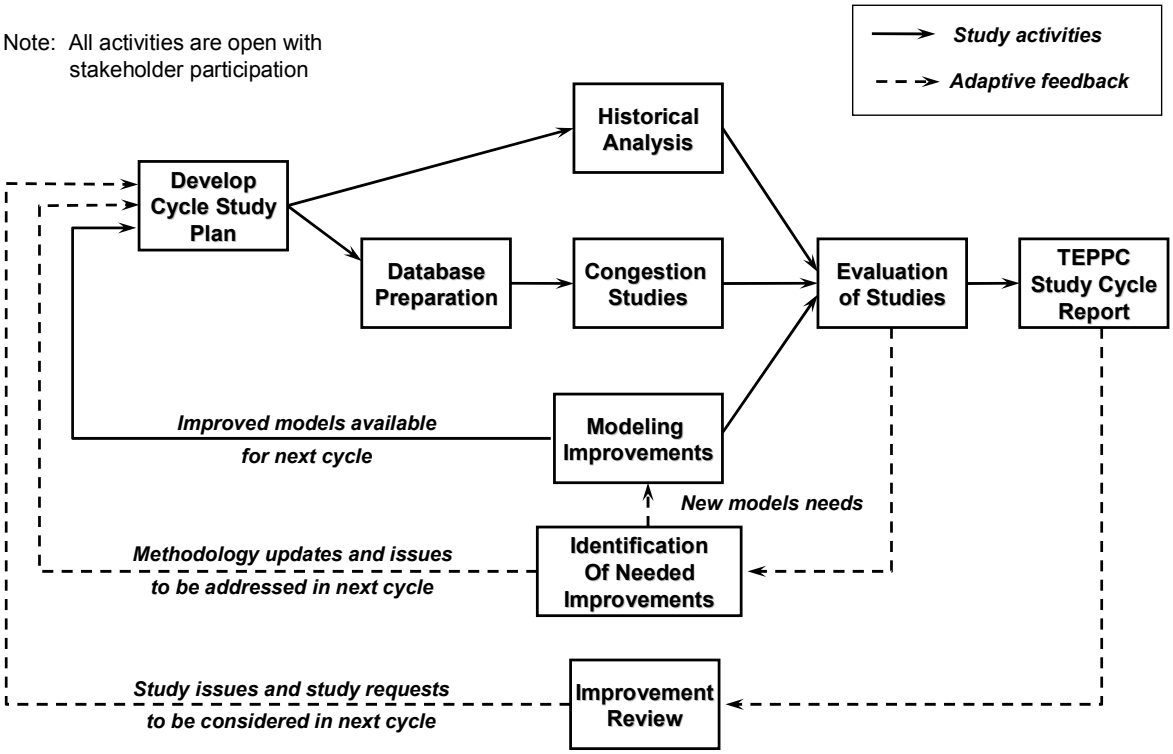
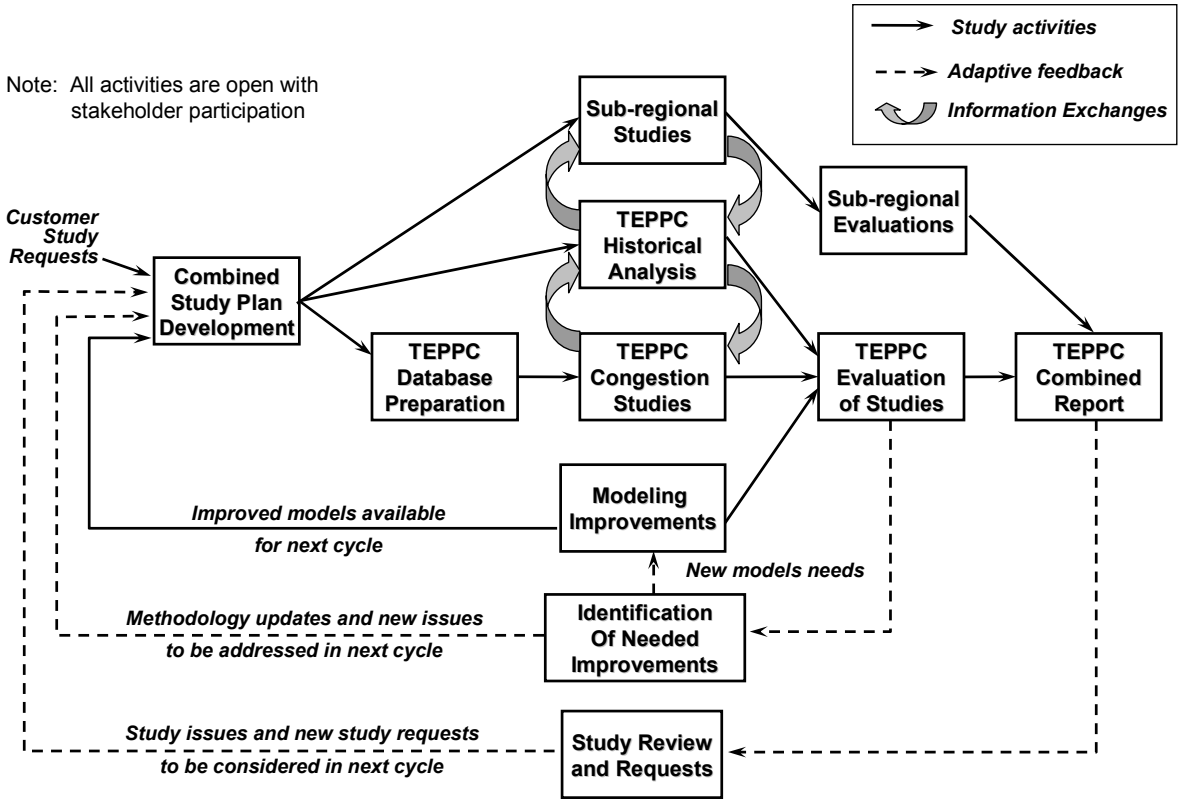


Figure 1 also shows two evaluation activities flowing out of the study evaluation and report. The first is a TEPPC review of technical and process issues to identify needed improvements in the conduct of congestion studies and historical analysis. This produces changes in methodology to be implemented in the next cycle and additional model improvement needs. The second evaluation process is made by stakeholders to determine issues to be considered for study in the next cycle and for producing new study requests. The outcome of these two evaluations and any new models available for the next cycle of studies is fed into the development of the next study plan, completing the annual process.

This TEPPC process can be adapted quite simply, as shown in Figure 2, to implement a synchronized study cycle for implementing the congestion study principle of Order No. 890. Instead of developing a TEPPC Study Plan, a Combined Study Plan is developed with assignments for study leads. The inputs to the combined plan

development would include customer study request required under Order No. 890. The combined plan would include a clustering and evaluation of all requests received by TEPPC, sub-regional groups and transmission providers. TEPPC would still be responsible for data base preparation and would be the lead for its study assignments and historical analysis.

Figure 2
An Annual Synchronized Study Cycle



At the same time the sub-regional groups would perform their study work. Information exchanges among the study activities would occur at TEPPC meetings, subcommittee meetings and monthly coordination calls. Both TEPPC and the subregional groups would evaluate their study results. Those results could then be merged into a single combined report.[13] The same feed back activities would occur, except that they would include broader participation than a TEPPC-only study cycle might entail.

[13] The TEPPC report will provide full details for TEPPC studies. The results of sub-regional studies may be reported in full or reported as summaries depending upon the level of interest for each of the sub-regionally led studies. Where summaries were provided, links would be provided for access to the full sub-regional reports.

This approach, open to all stakeholders, would gather and disperse information to stakeholders in all layers of the planning process – WECC/TEPPC, the subregional groups, transmission providers, state IRP processes, etc.. While each organization may have specific study responsibilities, the information transfer between them is designed to produce an integrated, cohesive study result.

Part 2
Planning Protocol:
Transmission Expansion Planning Policy Committee

Note: This is a proposed form provided for discussion purposes to illustrate the concept of a TEPPC planning protocol and to obtain feedback from FERC staff on the proposed structure for regional transmission planning in the Western Interconnection. Expansion of the outline and writing of the actual protocol will occur after the FERC Technical Conference to be held in June 2007.

1 Purpose and Objectives

This Protocol shall govern the process by which WECC/TEPPC shall support preparation of data, transmission studies and collaborative efforts among sub-regional planning groups to facilitate expansion planning in the Western Interconnection

2 Conformity with NERC and Other Applicable Criteria

a) Affirmative statement of compliance with various criteria

b) Requirement to publish all criteria in a convenient place

3 Organization

3.1 Governance

a) WECC Board

b) WECC Membership

3.2 Transmission Expansion Planning Policy Committee (TEPPC)

a) TEPPC Charter
b) Organization
    (1) Balanced Committee composition
    (2) WECC Staff support
    (3) Facilitator

c) Open meetings
    (1) Public calendars
    (2) Meeting notice
    (3) Document posting procedures, etc.

d) TEPPC's functional roles:
    (1) Data management

i. Single database for interconnection using publicly available expansion and economic data for a data test case and network data drawn from WECC the reliability database.
ii. Distribution of the database in a portable format to facilitate broad usage

(2) Planning Process Management
i. Fostering sub-regional collaboration
ii. Report on congestion, expansion projects
(3) Guide Analysis and Modeling
i. Study program coordination
1. Cluster requests from customers and stakeholders in the scoping of the combined study program
2. Conduct TEPPC studies and make diagnosis of system congestion and potential congestion
3. Evaluate generic approaches to resolve congestion
ii. Historical analysis to provide perspective to study program
iii. Modeling improvements to improve results for successive study cycles.

e) Limitations on TEPPC activities
(1) Charter restrictions
(2) A support to transmission providers
(3) Cost allocation outside WECC/TEPPC activity scope

f) Adaptive nature of planning process with annual review procedures

g) Reporting relationship to Board

3.3 Technical Advisory Subcommittee (TAS)

a) What it does (conducts studies and writes reports)

b) Reports to TEPPC

c) Subcommittee membership is open to all stakeholders

d) WECC Staff and TEPPC Facilitator provide support

e) Open meetings
a. Public calendars
b. Meeting notice
c. Document posting procedures, etc.

4 TEPPC Study Plan

a) Specific provisions for plan development
    a. Annual activity cycle
        i. Data collection
        ii. Study programs
        iii. Model improvement
        iv. Process evaluations
    b. Scope of studies
        i. Issues addressed by TEPPC
        ii. Disclosure of assumptions, criteria, etc.
    c. Data management
        i. Obligations to supply data
        ii. Access to data – transparency and CEII provisions
    d. Development of Study Plan with sub-regional groups
        i. Requests from participants (customers) for desired studies
        ii. Clustering of study request to address common questions
            1. Which studies best performed by TEPPC
            2. Which studies best directed by an sub-regional group
            3. Which studies responsibility of transmission provider
            4. Posting and comments on results
    e. Annual report on congestion and expansion case studies
        i. Study program
        ii. Historical analysis
        iii. Projects reported and discussion of current and future concerns addressed
        iv. Recommendations for next cycle

4.1 Data

a) Region-wide database maintained by TEPPC

4.1.1 Collection of data

a) Who supplies:
b) Loads
c) Generators
d) Network
e) Production costs

4.1.2 Data assumptions

a) Types:
    - Basis underlying the load forecasts
    - New resources and transmission deemed committed

- Etc…

b) Sources:
   - WECC
   - State IRP
   - Sub-regional organizations
   - Transmission providers
   - Etc…

4.1.3 Data access

a) Confidentiality and disclosure agreements will be addressed through WECC Board approved disclosure policies.

b) To be used by sub-regional groups and others

c) Supplied in a public data format

5 Communication and Collaboration

a) Information portal for major projects

b) Workshops, webinar

c) Coordination of study cycles

6 Annual Transmission Planning Process

a) Annual study cycle with biennial transmission project reporting.

b) Purpose is to serve as a project incubator

c) Relationship of plan to WECC reliability process, e.g, path rating, etc.

d) Begins with assembly of committed sub-regional and transmission provider plans

e) Economic studies used to identify potential congestion problems

f) Determination of the potential problems addressed by planned or announced projects

g) Identification of congestion not addressed by planned projects of sub-regional groups, transmission providers or transmission developers

h) Economic evaluation of conceptual solutions to potential problems – demand side, local generation, transmission expansion, etc.

7 Cost allocation

a) Allocation of project costs is not covered by WECC/TEPPC. The sub-regional planning groups agreements and transmission providers will address project cost allocation.

8 Relationship to Transmission Provider Open Access Transmission Tariff

a) Support to transmission providers obligations under Attachment K

Part 3
Planning Protocol for
A Sub-regional Planning Group

Note: This is a possible form for a sub-regional planning group protocol. It is provided for discussion purposes only to illustrated the concept of a transmission planning protocol for a sub-regional planning group. The specific committee structure, areas of responsibility, agreements, etc. would depend upon the actual structure, foundational documents and policies of a given organization.

1 Purpose and Objectives

This Protocol shall govern the process by which a sub-regional planning group shall support preparation of a plan for the enhancement and expansion of its members' transmission systems in order to meet the demands for firm transmission service, and to support competition, in the sub-regional group's Region. The sub-regional transmission plan to be developed shall enable the transmission needs in the sub-regional group's area to be met on a reliable, economic and environmentally acceptable basis.

2 Conformity with NERC and Other Applicable Criteria

a) Affirmative statement of compliance with NERC/WECC criteria

b) Inclusion of other criteria and any applicable criteria in state IRP processes

c) Recognition of company specific criteria when used in local transmission planning

d) Requirement to publish all criteria in a convenient place

3 Organization

3.1 Governance

a) Structure – a steering committee, board, or similar group

b) Membership –

c) Open meetings policies –

3.2 Planning Policy Decision Process

a) What it does (policy, criteria, and stuff)

b) Who it reports to

c) What authority it has

d) Committee membership considerations (high level)

e) Public calendars, meeting notice, document posting procedures, etc.

3.3 Technical Study Process

a) What it does (conducts studies and writes reports)

b) Who it reports to (e.g., a planning policy committee)

c) What authority it has

d) Membership

e) Staffing – this committee could have a sub-regional group paid staff and an independent facilitator

f) Public calendars, meeting notice, document posting procedures, etc.

4 Contents of the Sub-Regional Transmission Plan

a) The Plan shall consolidate the transmission needs of the sub-regional group into a single plan which is assessed on the bases of maintaining reliability in an economic and environmentally acceptable manner and in a manner that supports competition in the sub-regional group's area.

b) Horizon – at least 10 years

c) If applicable, designation of the process for decision making regarding joint projects – who will construct, own and/or finance each project and how costs are to be recovered

d) Objectives of plan:
   - avoid unnecessary duplication of facilities;
   - avoid imposition of unreasonable costs;
   - consider the legal and contractual rights and obligations of transmission providers;
   - evaluate and provide, if appropriate, alternative means for meeting transmission needs including demand side alternatives and other non-wire alternatives;
   - maintain or enhance economic and operational efficiency of wholesale markets;
   - encourage development of renewable resources;

- coordination with existing systems and with regional and local plans

5 Procedure for Development of the Sub-Regional Transmission Plan

5.1 Commencement of the Process

a) Coordination of TEPPC and sub-regional planning group planning cycles

b) Initiation of the sub-regional group's study process

c) Study cycle produces informational basis for biennial plans

d) Can do ad-hoc studies or plans on planning policy committee authorization

e) Planning policy committee notifies steering committee (board, etc.) and technical committee when process is initiated

5.2 Development of Scope, Assumptions, Methodology and Procedures

a) Set by a planning policy decision process in consultation with its associated technical groups or committees

5.3 Scope of Studies

This section identifies the type and scope of studies a sub-regional group would be expected to initiate on its own and those it would conduct as part of the synchronized study cycle. *[Note: The purpose of spelling this out is so that utilities can point to it in their OATT Attachment K. The sub-regional group scope should satisfy FERC principle 8 on economic expansion studies in conjunction with the TEPPC studies with the synchronized study cycle.]*

5.4 Data

5.4.1 Obligation to supply data

a) WECC/TEPPC database utilized by the sub-regional group

b) Who has to supply –

c) What data –

d) Loads – with forecast

e) Generators

f) Network

g) Production cost

5.4.2 Data assumptions

Types:
- Basis underlying the load forecasts
- New resources and transmission deemed committed
- Etc…

b) Sources:
- WECC
- State IRP
- Sub-regional organizations
- Transmission providers
- Etc…

5.4.3 Data Access

a) Data will be maintained at WECC

b) Confidentiality and disclosure agreements will be addressed through WECC Board approved disclosure policies

5.5 Development of the Plan

5.5.1 Process

5.5.2 Project proposals

5.5.3 Performance analysis

5.5.4 Cost analysis

5.5.5 Deciding what's in "the plan"

a) Stakeholder inclusion

b) Establish methodologies and processes

c) Relationship of plan to WECC reliability process, e.g, path rating, etc.

5.6 Development of Economic Transmission Enhancements and Expansions

a) Proposing system enhancements stemming from production cost simulation.

6 Approval of the Final Plan

a) Authority of sub-regional group versus transmission provider in Attachment K?

b) If applicable, how does sub-regional group exercise its authority?

c) If a Plan is not approved, or if the transmission service requested by any entity is not included in the approved Plan, allow for pursuing Section 211 of the FPA.

7 Obligation to Build

a) Describe if applicable

8 Cost allocation

a) Describe any procedures under sub-regional group's agreement, charter, etc.

9 Relationship to Transmission Provider Open Access Transmission Tariff

b) Subordinate to transmission provider tariff, etc.

Part 4
XYZ Corp's Transmission Provider
Specific Planning Process

This part of the strawman is a placeholder the portion of Attachment K where the transmission provider will describe the details of those parts of the Western Transmission Planning Process which will remain the responsibility of the transmission provider.