Northwest Power and Conservation Council

June 30, 2005

MEMORANDUM

TO: Council Members

FROM: Wally Gibson

SUBJECT: Transmission Issues - Background and Status Report

UPCOMING COUNCIL ACTION

The Northwest will make some major decisions at the end of this summer on whether, and how, to go forward addressing the region's transmission problems. It will decide whether to move ahead with development of Grid West or to continue to address the region's transmission problems along the path proposed by the Transmission Improvements Group (TIG), or possibly some other approach.

The attached paper will provide initial background on the issues, and will be followed by presentations at the next few Council meetings addressing the issues in more depth, leading up to a request for the Council to take a position on the issues at the September Council meeting. The decision will be reported at the Regional Representatives Group (RRG) meeting at the end of September, at which the RRG will recommend to the Grid West filing utilities whether they should go forward with funding the next step of Grid West development or whether an alternative approach should be chosen.

OVERVIEW

There are two parallel tracks addressing the Northwest's transmission problems. One, the Grid West track, is developing an independent organization to manage the regional transmission grid ("regional" in this case refers to the footprint of the Northwest Power Pool, which includes Utah, Wyoming, Nevada, British Columbia and Alberta, in addition to the four states of the Northwest defined by the Northwest Power Act). Grid West would be a FERC-jurisdictional entity, but would not, however, be a Regional Transmission Organization (RTO), as FERC has defined it, nor would it follow the FERC-proposed Standard Market Design (SMD).

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The second track is the one proposed by TIG, and focuses on addressing the problems without creating a new FERC-jurisdictional entity, and without expanding FERC jurisdiction over existing entities. The footprint is intended to be the same as that of Grid West, but the participants are exclusively from the smaller Power Act-defined Northwest and only include Bonneville, among the major transmission owners.

FERC jurisdiction is a central issue for a number of the region's utilities and state regulators. Publicly owned utilities and federal power marketing administrations, including Bonneville, are not currently FERC-jurisdictional, except for relatively limited circumstances. Investor-owned utilities (IOUs) are FERC-jurisdictional for all wholesale energy transactions and all interstate transmission (which has been clarified by the courts to mean all interconnected transmission that extends beyond the boundaries of a single state). The publicly owned utilities want to avoid any of Bonneville's transmission activities becoming jurisdictional, and state regulators are concerned about the potential for expansion of FERC jurisdiction into currently non-jurisdictional activities, primarily retail rate regulation by the states.

The defining problems for the two approaches will be the complements of their strengths. For Grid West, the problem will be to ensure that the organization is cost-effective and regionally accountable. For TIG, the problem will be to ensure that the mechanisms will actually address the problems facing the regional transmission system.

COUNCIL PRESENTATION

The presentation to the Council will address the following issues:

- A brief overview of the problem posed by the physics of electrical networks;
- An overview the of problems faced by the region's transmission system;
- A description of the time line for decision making;
- An description of why there are two approaches;
- A review of the issue relating to FERC jurisdiction; and
- An overview of the approaches to the problems.

The presentation will generally be less detailed than the attached paper.

The packet contains the slides that will be used and a copy of the Bonneville newsletter "Keeping Current" from March of this year, describing Bonneville's perspective on the problems facing the region.

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BACKGROUND

WHAT ARE THE TRANSMISSION PROBLEMS FACING THE REGION?

The following is a list of problems that face the region's transmission system, as identified by the RRG and/or in the Council's Fifth Power Plan:

1. Difficulty in managing unscheduled flows, leading to increased risks to electric system reliability;
2. Difficulty in reconciling available physical transmission capacity with that available on a contractual basis, leading to inefficient utilization of existing transmission and generation capacity (both this and the first item are related to the mismatch between the commercial model and the physical system on which it is overlaid);
3. Lack of clear responsibility and incentives for planning and implementing system expansion resulting in inadequate transmission capacity;
4. Inability to effectively monitor wholesale electricity markets, identify market power abuse, or provide mitigation and accountability;
5. Transactions and rate pancaking i.e., contracting and paying for the fixed costs of multiple transmission segments on a volumetric basis to complete a power sale, leading to inefficient utilization of generation; and
6. Control area competitive advantage over competing generation owners leading to inefficient use of generation and potential proliferation of control areas with greater operational complexity (this is addressed indirectly).

Problems 1, 2 and 6 are generally addressed under the rubric of market design. Problems 3, 4 and 5 are addressed under planning, market monitoring and pricing respectively.

The market design problems are raised by the fundamental mismatch between the underlying physical characteristics and behavior of the grid on the one hand and the commercial model which is overlaid upon it, on the other. While there are good reasons historically for the way in which the commercial model evolved, it is becoming more and more problematic to continue using it while operating the system economically and reliably as the industry evolves.

The fundamental mismatch is between a physical system in which electric power flows over the entire network, including the entire western interconnection, and has to be controlled on a close to instantaneous basis, and a commercial system that assumes that transactions can be isolated to particular parts of the system.

HOW ARE THE TWO GROUPS ADDRESSING THE PROBLEMS?

Grid West, Including Near-Term Services

The Grid West market design is relatively well fleshed out at this point and addresses Bullets 1, 2, and 6 of the problems list. It builds on the notion of maintaining existing rights and contracts, and overlays those with a centralized scheduling mechanism that allows a significantly better view of the planned uses of the grid prior to real-time operation, which in turn, allows the system operators to avoid potential reliability problems on the grid before they actually occur. This is

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coupled with a mechanism that will allow multi-lateral trading of existing rights in the forward markets, which will allow users to get more efficient use out of the system. Finally, it provides for a consolidated control area (currently expected to include Bonneville, PacifiCorp and Idaho Power, at least), which will expand the span of real-time control for problems that do show up in real time. The market design is fundamentally different from that of RTO West or FERC's Standard Market Design.

There is also a proposal from a recently formed group working on near-term services to see whether some of the benefits of a consolidated control area (e.g., less generation required for certain control area functions with consolidation than without it) can be achieved before full Grid West operation, within the limits of the developmental bylaws.

The Grid West pricing work (addressing, among other issues, Bullet 5 above) is not yet complete, so there is little detail to report beyond the basic approach built into the bylaws that maintains a system ("company rates") where customers continue to pay the rates that they have paid before for the embedded costs of the existing system and avoids significant cost shifts among customers.

The planning details (addressing Bullet 3) have not been fleshed out, but they build on the proposals in RTO West, about which there was little significant controversy. These include the concepts of a single regional transmission service request queue, a single regional planning process, a regional backstop for reliability-driven transmission expansion (which would allow Grid West to ensure transmission or appropriate non-transmission alternatives are constructed and allocate the cost to transmission owners), and a contingent backstop for expansion to relieve chronic commercial congestion. The details are partly dependent on the work of the pricing group, which is not yet complete.

The planning approach is also being examined by the work group looking at near-term services, again to see what parts of the planning process can be accomplished within the scope of the developmental bylaws, prior to full Grid West operation. The developmental bylaws already provide for development of a regional transmission plan and a coordination role for existing planning efforts, subject to member approval.

The market monitoring proposal (addressing Bullet 4) has not yet been fleshed out in detail but is expected to follow the RTO West proposal, which called for a market monitor that would report to the independent Board and to the appropriate regulatory agencies. The near-term services group is also addressing this issue and is proposing that Grid West participate in a west-wide market monitoring pilot project, originally developed by the various earlier western RTO participants under the auspices of the Seams Steering Group - Western Interconnection (SSG-WI) in partnership with a number of the western states.

TIG

The TIG efforts are much less further along, though they started later and were initially less ambitious as well.

The efforts are furthest along in dealing with planning and market monitoring. The market monitoring proposal calls for a Market Monitoring Committee made up of stakeholders and

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voluntarily funded by transmission owners to hire an independent Market Monitor on a contract basis.

The planning proposal calls for an independent planning entity that would do regional plans, and operate a regional transmission service request queue, and a stakeholder-based Transmission Expansion Review Committee (TERC), that would review the plans and provide policy guidance to the planners. The TERC would only have authority to advocate for projects in front of the appropriate regulatory agencies. The backstop for ensuring construction under the TIG proposal would be a request to FERC under Section 211 of the Federal Power Act (the same remedy that exists today). This effort has not yet addressed whatever difficulties may arise from developing a governance scheme.

TIG also has work groups focused on developing a common regional OASIS[1] which would have more functions than current OASIS systems, on developing a proposal to calculate available transmission capacity (ATC) and schedule on a power flow rather than contract path basis (addressing the issues in Bullets 1 and 2) and on developing proposals to enhance the reliability of the system. These efforts do not have full proposals developed yet. Some of these efforts, particularly the flow-based ATC and scheduling effort appears likely to draw upon the work done for Grid West, while focusing on a different implementation mechanism that does not involve FERC jurisdiction.

SUMMARY

There appears to be some convergent elements in the technical proposals of Grid West and TIG, which will allow focusing on the institutional issues directly. The Grid West proposals are, or will be, comprehensive approaches to the problems, with near-term implementations leading to the full operational scope. The risk for Grid West is that the solutions will be too expensive or the jurisdictional changes too much of a barrier for the region to accept.

The TIG approaches are likely to be less comprehensive and focused around multiple organizations. The risk for TIG is that the solutions will also be less effective, and potentially not even able to address all of the problems.

There is also the possibility, which is hard to see clearly at this point, that there might be some intermediate package, given the appearance of some convergence on the technical level, that would be both a comprehensive attack on the system problems and sidestep some of the most difficult institutional issues.

[1] Open Access Same-time Information System, a FERC-mandated internet interface for reserving transmission.

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