Transmission Adequacy Standards: Planning for the Future -- Comments of ICNU

December 6, 2004

The Industrial Customers of Northwest Utilities ("ICNU") is pleased to offer these comments regarding BPA's draft discussion paper Transmission Adequacy Standards: Planning for the future. The paper raises a number of important issues for BPA and the region—from engineering to economics. ICNU is able to touch upon only a few of them in the time we have had to examine them. However, we would appreciate keeping abreast of any further discussions and results and having the opportunity to comment further on issues as they are raised.

Summary

These comments are organized as follows: First, we provide some background information on industry's interests. Second, we raise the major concerns we have with concepts raised in the paper. Finally, we provide answers to some of the more detailed questions raised in the paper.

Background

These comments will look at the three basic issues raised in the paper: ndards – Planning for the Future.

- The geographic scope of transmission planning and decision-making—BPA only or regional.
- The costs and risks that utilities and customers are willing to assume for system reliability.
- The relationship between physical adequacy of the transmission system and economic adequacy. (How much congestion is acceptable?)

The issues selected raise a number of questions for ICNU, particularly as representatives of industrial customers, who may have different interests and needs and assets than do utilities.

At the outset, we identify the primary interests that underlie our comments on this paper:

1. Industrial customers are concerned with the delivered cost of power, that is the cost of generation supply and transmission, if any, needed to bring it to load.

2. Industrial customers seek reliable delivery of generation supply, with delivery coming, in most instances, at higher voltage levels. That is, industry is most concerned about transmission- rather than distribution-system delivery quality.
3. Industry is likely to be more diverse in its tolerance for price variability than the usual utility. Some industries may have a low tolerance for volatility the price of delivered power; others may be willing to tolerate more volatility in exchange for lower long-run power costs.
4. Industry is likely to participate in both local power markets and in the potential offer of reserves through sale of interruption rights or sales of on-site generation, so bias against workable market operation may preclude these opportunities.

With these interests in mind, ICNU is pleased to make the following preliminary comments before turning to BPA's three identified topics and to the more detailed list of issues.

Despite the best efforts of every transmission or generation owner, a transmission system will never be perfectly reliable, and there are significant trade-offs between reliability and the cost of providing that reliability. Increases of investment for reliability always will face "gold plating" charges—sometimes justifiably.

Major Concerns

Likely overemphasis on transmission projects vs generation or demand-response solutions to problems

The time component makes the logistics of traditional utility planning extremely problematic and likely will cause an overemphasis on transmission projects at the expense of generation and load-interruption alternatives. For example, a reliability investment for upgraded transmission in 2013 may require a transmission line decision, say, in 2005, but the same reliability could be provided by a generation decision in 2011 or a demand-response alterative in 2012—all three of which theoretically can serve the same need. Moreover, the generation and demand-response decisions are not normally under the control of the transmission planners.

The planning dilemma is this: Do the planners today assume that a transmission line is needed and make the decision in 2005 to go ahead with a new line or do they assume, today, a market response of load-center generation and/or demand response measures will fill the planning need? In the latter case, no transmission line decision is necessary, and the 2005 deadline can lapse.

The dilemma comes between the planners, who want to see provisions for transmission, and the market-oriented people, who say the market will respond and no planning is possible or even necessary.

The problem is further complicated by the strong possibility that a decision to plan transmission may make uneconomic any generation or demand-interruption response. That is, a decision in 2005 to go ahead with a transmission line likely makes a generation or demand-response solution uneconomic in those later years.

The combination of a planning-only perspective and the normal uncertainty of markets is likely to bias any planning effort towards transmission solutions.

Generation adequacy issues should not be mixed into a transmission adequacy analysis

While the BPA paper does not address generation adequacy, generation resources cannot be separated from the transmission necessary to get them to intended load centers. It is the responsibility of the generation developer to provide sufficient transmission to bring the resource to market or to an end-use contract buyer.

There is a danger that the failure to provide transmission to load will become, in a planning arena, a transmission adequacy problem. It is not. It is generation's problem that must be solved (or assumed solved) before the transmission adequacy analysis is done, and it must be assumed that generation provides for transmission access to load centers—through upgrades or new transmission lines. Otherwise, the study becomes much more complex: a societal benefit study involving trade-offs between fuel types, gas transportation, rail-haul of coal, etc.

Industry generally has a different perspective on generation adequacy from other end users

Though generation adequacy is not the prime concern, underlying many of the issues in BPA's paper is the question of generation adequacy. Insofar as transmission measures are undertaken in response to questions of generation adequacy, industry's take on the issue is important.

At the outset, it should be made clear that generation adequacy as used in the BPA paper and these comments does not mean the necessary reserves and forced-outage allowance that must be maintained in any well-designed utility system. What it does mean is an amount of generation capacity required by some regulator or legislation to be held in reserve for future loads or load excursions, primarily to avoid California-crisis types of price excursions.

The nature of the generation-adequacy issue for large industry (and their portion of their serving utility's load) is significantly different from the generation-adequacy needs of most other customers—for two reasons.

First, a large industry's load is constrained by the industrial capacity that is in place at full operation. A company that consumes, for example, 50 MW per hour at full industrial operation cannot, in the short run, significantly exceed that level. Nor will there be load excursions due to weather or other temperature-sensitive needs. In short, generation capacity held in excess of existing full-operation industrial load is unnecessary electrically, costly to industry and therefore harmful economically.

Second, the need for generation capacity, interconnection requirements and new plant facilities is normally determined in discrete intervals, and requires extensive planning. A company wanting to expand by installation of new equipment will determine its need for power, likely secure a power contract for the necessary generation and arrange for or build any interconnection facilities necessary to deliver that power—all as part of a single expansion decision taken months or even years in advance of the need for power to be delivered. Using the above example, a company installing a new industrial machine may require 10 MW of energy capacity for a total of 60 MW. The securing of 10 MW of power supply is not an adequacy issue in the sense used in this paper; it is a discrete need in which the company obtains (or its serving utility) what it needs to serve that load; it does not need something more to provide for generation adequacy.

As a consequence of large industry's unique position toward generation adequacy, measures taken in a transmission environment to provide facilities for generation adequacy rules simply are unnecessary costs to industry.

Reliability/Regulatory versus Market/Economics

There is, of course, no bright line between transmission investments made for transmission reliability and for market purposes. Because of the nature of an AC power system, an investment made for reliability purposes likely will improve the ability to market power, and an investment made for market purposes likely will improve transmission reliability.

While it may be a difficult line to define, the RTO West Planning Committee decided that the burden of proof of reliability versus market purposes must lie on the side of reliability. That is, the committee concluded that the reliability proponent must show that service to load cannot be maintained without construction of transmission, construction of generation within the load area or demand-response measures. As long as such service can be maintained, transmission upgrades are market-driven and must be paid for by market participants.

This conclusion, in essence, accepts potential price volatility if no action is taken to increase transmission capacity.

Responses to Specific BPA Questions

Scope of Transmission Planning

While BPA operates about 75 percent of the high-voltage transmission system in its service area, BPA is only part of a region-wide transmission system that extends beyond its boundaries. As a consequence it is important for planning to take into account other utilities beyond BPA and other entities in the region, including generation sources and loads that might be able to bid into markets operated by a transmission operator.

In order to facilitate a region-wide perspective, ICNU encourages BPA to continue to work with the Northwest Transmission Assessment Committee.

Costs and Risks that Utilities and Customers Are Willing to Assume for System Reliability

As discussed above, ICNU will accept cost responsibility for reliability, provided that alternatives other than transmission are considered. Because generation and demand-response alternatives are likely market-based, there is a risk in reliance on such alternatives, but some risk to provide market alternatives is acceptable. Reliance on markets has an additional benefit in that the forecasts that drive the planning process may not materialize—witness many of the projects in the G-20 list.

The relationship between the physical adequacy of the transmission system and economic adequacy. (How much congestion is acceptable?)

As discussed above, industry is a strong proponent of market-based solutions, in which it may actively participate. Congestion costs are a price signal to encourage market responses to transmission limitations, and non-transmission responses may eliminate the transmission limitation. Accordingly, industry is willing to tolerate congestion-cost volatility as long as electrical reliability below standards is not impaired.

As a corollary, generation resource suppliers must accept the responsibility of transmission sufficient to deliver power to loads. [An RTO, by the way, simply may change the financial means by which the generation obligation is met.] ICNU recognizes that "[A]ggregating sufficient new contracts, primarily from new generators, to cover the incremental cost of new transmission is very difficult to do in the current market environment," (page 8)

but difficulty is not an excuse for half-finished projects—because their output cannot be delivered to load.

These conclusions contradict Part V of the paper in which “lower wholesale power cost” is identified as a component of an “adequate transmission system.”