Transmission Adequacy Standards
Planning for the Future

Executive Summary

One of the challenges facing the electric utility industry today is how to balance reliability, economic, environmental and the other public purpose objectives to optimize transmission and resources to meet the needs of the region. These critical issues must be addressed to move the Northwest electrical system into the 21st century.

Resource and transmission adequacy are necessary components of a reliable and economic power supply. Achieving resource adequacy in today's restructured industry, where market economics and local concerns often dictate the siting of new generation facilities remote from major load centers, has made transmission planning extremely difficult. Equally difficult is planning for an adequate transmission system when the location of new generation facilities is uncertain and the lead time for transmission construction could exceed the time to build new generation by several years. Although reliability and market economics are driven by different policies and incentives, they cannot be separated.

The transmission system in the Northwest is pushing its limit. How does the region address an aging transmission network facing increasing demands? And how does the region factor in the risk and cost of outages such as the 1996 West Coast blackout (estimated cost: $2 billion) and the 2003 East Coast blackout (estimated cost: $10 billion.)

To address these needs, the Bonneville Power Administration launched a transmission infrastructure program in 2001. Six key projects will be completed by 2006 at a cost of more than $500 million. While this will add reliability and margin back into the system, it comes at a price. The added depreciation and interest expense related to these projects could push transmission rates up 14 to 20 percent. In addition, BPA has limited borrowing authority to finance capital replacements and expansion.

It is more important than ever for utilities to find a better way to determine how much transmission is needed, the solutions to be deployed and what criteria should be applied to guide prudent investment decisions. Key areas that need to be discussed include:

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

Towards that goal, BPA is initiating a public process to help develop the components of transmission adequacy and the standards to be used for decision making with the goal of testing these proposed standards by June 2005. For the full discussion paper go to *http://www.transmission.bpa.gov/PlanProj/default.cfm.* Any comments on the paper should be sent via e-mail to *tblfeedback@bpa.gov* or phone toll free 1.888.276.7790.

Questions for Feedback

- Regarding Bonneville's efforts to develop transmission adequacy standards:
  - Are the issues listed in the discussion paper the right ones? Has BPA missed any?
  - Are there issues that should rise to the top in terms of priority?
  - How should BPA best engage the region throughout the process – what's the appropriate forum?
  - Are there ideas or suggested answers to the questions posed in the discussion paper?
- Any other issues or suggestions?

Transmission Adequacy Issues

1. What are the standards by which adequacy should be determined? Is it physical adequacy (keeping the lights on) or economic adequacy (minimizing power cost and reducing price volatility caused by congestion)? Or, is it a combination of both?
2. Are the current planning criteria and assumptions appropriate or should they be strengthened in the aftermath of the 2003 East Coast blackout? How robust should the system be? Should the region plan deeper for reliability than it does today, for example, planning for maintenance outages?
3. What metrics should be used to measure actual transmission performance so that we know if the grid is working as desired and when fixes are needed?
4. Should controlled load shedding be used to meet transmission adequacy standards? If so, what should be the acceptable loss of load for deeper contingencies?
5. What measures are considered in finding least-cost solutions to transmission limitations and who bears the responsibility for implementing non-wires approaches when these approaches are chosen?
6. Who is responsible for ensuring an adequate system and who bears the cost? Should planning be done to meet load forecasts or only contractual obligations or should it be a combination of both?
7. How should transmission adequacy be linked to resource adequacy? Since resource location is fundamental to meeting transmission needs, how should this be addressed?
8. How should market mechanisms be incorporated to address congestion and guide future resource siting and transmission investment decisions?
9. Is the lack of symmetry in transmission financing policies, such as generators funding network upgrades and BPA funding construction for load service, a problem? If transmission providers finance transmission, who should assume the risk of generator shutdown and the lack of wheeling payments to cover costs?

Key Milestones:

Sept. 28-29, 2004 – Discussed concepts at *Energizing the NW, Today and Tomorrow*
Nov. 15 – Comment period on discussion paper concludes
Mid-November to May 2005 – Develop proposed standards through BPA sponsored technical panel
June 2005 – BPA and key stakeholders begin to test proposed draft standards with public involvement
September 2005 – Comment period closes for draft proposed standards
December 2005 – BPA decision on standards
January 2006 – Transition to meet standards