BIG STONE II
PARTNERS IN GENERATION

Applicants' Witness
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Summary
Applicants' Exhibits 10, 32 and 42

Resource Planning

- Otter Tail is required by Minnesota law to file periodic integrated resource plans with the Minnesota Public Utilities Commission
  - 2005 plan now before MPUC for approval
  - Copies have been provided to South Dakota and North Dakota Commissions

Resource Planning (continued)

- Otter Tail is currently providing 9% to 11% of our retail sales using renewables
  - Otter Tail is also subject to Minnesota Renewable Energy Objective (REO) legislation
  - We are on-track to meet the 2015 goal, in *all three* of our states:
    - Minnesota, South Dakota and North Dakota
  - We plan 110 MW of additional wind capacity and 5.7 MW of biomass capacity by 2015.

Resource Planning (continued)

- Capacity needs drive *reliability* considerations, but energy costs drive appropriate mix and *timing* of baseload facilities
- Why Big Stone Unit II?
  - Otter Tail will be capacity deficit without Big Stone Unit II
    - 116 MW in 2010
  - Increasing and volatile natural gas and market prices are driving need for additional, reliable, baseload production capacity with low energy costs
  - Picked by our capacity expansion planning modeling as a cost-effective resource

Resource Planning (continued)

- Like the other Applicants, Otter Tail has performed extensive, system-level planning analyses that resulted in our proposed resource plan
  - Considered possible combinations of resources as alternatives to Big Stone Unit II.
  - Result is optimized levels of DSM, renewables and Big Stone Unit II
  - These studies show Otter Tail could justify 120 MW of coal-fired baseload capacity in 2011
    - More recent developments suggest this number could be even higher.
  - Our proposed share in Big Stone Unit II is 116 MW in 2011.
- Like other Applicants, Otter Tail is proposing DSM *and* renewables *and* peaking *and* Big Stone Unit II.

DSM and Renewables Impacts

- The seven Applicants *in total*:
  - Demand-side management (DSM):
    - Are meeting their Minnesota CIP goals*
    - Have already achieved 560 MW and 370,000 MWh/year of DSM impacts through 2005—equivalent to a large generating plant
    - Plan to achieve an additional 240 MW and 780,000 MWh/year of DSM by 2015
  - Renewables:
    - Are meeting their Minnesota REO goals*
    - Have already achieved 740,000 MWh/year of renewables through 2005
    - Plan to achieve an additional 2,170,000 MWh/year by 2015
    - Total of 2,910,000 MWh/year will come from many sources, but is equivalent to more than *950 MW* of wind machines at 35% annual capacity factor
    - Plan a total of *850* MW of wind energy specifically by 2015

*For those Applicants subject to such goals

Rebuttal Summary

- The Applicants assign monthly capacity values to wind energy in accordance with MAPP procedures
  - Based on actual performance of wind machine in its wind regime, correlated with the timing of the utility's peak demand
  - MAPP in total is summer-peaking
  - Wind values are lower in summer peak season than in winter season

Rebuttal Summary (continued)

- Joint intervenors' 800 MW/1200 MW wind/gas scenarios:
  - When pan-caked *on top of* Applicants' own 850 MW plans for wind:
    - Would call for 1,650 MW to 2,050 MW of wind energy, or 25% to 30% of Applicants' total peak demand in 2015.
      - By itself would likely result in violation of NERC operating standards unless other major and costly steps were taken to compensate
    - Is not cost-effective compared to the Applicants' plans
- Joint intervenors' wind/gas analysis is overly-simplified, inadequate, and uses inappropriately large and unsupported externality values

Rebuttal Summary (continued)

- Capacity surpluses in the Mid-Continent Power Pool (MAPP) are not feasible alternatives to Big Stone Unit II
  - MAPP-US is capacity-deficit by 2011 summer season, without Big Stone Unit II
  - Winter season 2011/2012 surpluses in MAPP-US are fired entirely by costly oil and natural gas
  - Capacity surpluses in MAPP-Canada in 2011
    - Do not provide the same scheduling and operating flexibility as Big Stone Unit II
    - Cost more than Big Stone Unit II, and:
    - Deliverability to the U.S. is severely restricted by transmission limits and existing transmission reservations

Summary

- The Applicants' plans, based on detailed system-level analyses, include a diverse and balanced mix of:
  - Demand-side management (DSM)
  - Renewables
  - Peaking
  - Big Stone Unit II