

Applicants' Witness Hoa Nguyen

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Summary

Applicants' Exhibits 11 and 48

Overview

- Integrated Resource Planning Process
- Need for Big Stone Unit II
- Demand-Side Management Programs and Renewables

Integrated Resource Planning

- Montana-Dakota's IRP process:
 - Load forecasting
 - Demand-side analysis
 - Supply-side analysis
 - Integration analysis
- Input from the IRP Public Advisory Group
- Load Forecast
 - End-use model develops long-range load forecast for integrated system (Montana, North Dakota, and South Dakota)
 - Energy projected to grow 1.3 percent annually for ten years
 - Peak demand projected to increase 1.0 percent annually for ten years

Need for Big Stone II

- MDU projected capacity deficits: 101 MW in 2011, 134 MW in 2016, and 164 MW in 2021
 - Expiration of 66.4 MW baseload power purchase agreement in 2006
 - Projected increasing demand
- **Big Stone II share (116 MW) is the best-cost resource option:**
 - Baseload coal has lower and less volatile prices, and more stable fuel supply than natural gas; provides a better long term value for our customers
 - Big Stone II is a timely opportunity to participate in a baseload plant with significant economies of scale

Demand-Side Management and Renewables

- DSM programs
 - 2.5 MW of current peak-shaving programs
 - 6.5 MW of DSM and conservation planned for 2006-2010
- Renewables
 - Power purchase agreement for 31.5 MW of wind in South Dakota
 - Additional 30 MW of renewable power generation by 2015

Intervenors Wind/Gas Combo

- Assessment of the 800-1200 MW of wind alternatives:
 - Our pro-rata share would be too large for MDU system
 - Would cause reliability and operating stability problems
 - 36% to 51% of total system peak demand
 - Negative Locational Marginal Pricing: \$4 - 6 million/year penalty

Summary

- MDU could justify 126 MW of baseload
 - Compared to our proposed 116 MW share of Big Stone Unit II
 - Two additional years of customer growth
 - Defer next baseload addition
- MDU is pursuing DSM and renewables and Big Stone Unit II