

Applicants' Witness Stephen J. Gosoroski

Project Manager
Burns & McDonnell

Summary
Applicants' Exhibit 24

Personal Background

- Stephen J. Gosoroski
 - 29 years experience in Power Industry
 - Approximately 6,000 MW of generation experience
 - Project Manager since 1992

Phase I Study

- Objective

- Evaluate feasibility of new unit at Big Stone
- Generation increments evaluated, not a resource planning study
- Nine alternatives considered
- IGCC eliminated
 - Not commercially proven
 - PRB fuel experience
 - Higher capital cost
- Wind eliminated
- Not baseload generation

Phase I Conclusions

- Pulverized Coal (PC) Units had Economic Advantage over CFB Units
- 600 MW Unit had Economic Advantage over Smaller Unit Sizes Due to Economy of Scale
- 600 MW PC Unit had a Significant Economic Advantage over 500 MW Gas-Fired CCGT for Baseload Generation

Phase I Study

- Selected Emission Controls
 - NOx – LNB, OFA, SCR
 - Particulate - Baghouse
 - Sulfur Dioxide – Dry Scrubber
 - Mercury – Carbon Injection
 - Carbon Monoxide, VOC – Best Operating Practices

Analysis of Baseload Generation Alternatives

- Done in support of Minnesota CON for transmission line

- ▣ Not limited to Big Stone site
- ▣ Six technologies considered
- ▣ Baseload generation required
- ▣ Peaking generation not considered as stand-alone
- ▣ Smaller units/CFB units eliminated in Phase I Study
- ▣ Carbon tax considered

Baseload Generation Conclusions

- Confirmed that 600 MW PC Unit Represents Low Cost Baseload Generation Alternative
 - Conclusion Did Not Change with Inclusion of High End Minnesota PUC Carbon Value
 - Conclusion Did Not Change with or without Extension of the Production Tax Credit for Wind
- Supercritical and Subcritical Units had Similar Economic Costs
 - Applicants Selected Supercritical to Minimize Emissions