

# 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