Fossil Fuel Generation Efficiency

1251(a)(13) EPACT

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Section 1251(a)(13)

- Each electric utility shall develop and implement a 10-year plan to increase the efficiency of its fossil fuel

Fossil Fuel Generation Efficiency

- Efficiently serving customers and market factors drive Montana-Dakota to wring out available efficiencies

Fossil Fuel Generation Efficiency

- Long history of making incremental efficiency improvements
  - Conversion of R.M. Heskett Station Unit #2 to a fluidized bed boiler
  - Installation of Glendive #2 high efficiency GE LM6000 Aeroderivitive combustion turbine.
  - Addition of evaporative cooling (fogging) systems on the Miles City and Glendive #1 combustion turbines

Fossil Fuel Generation Efficiency

- Long history of making incremental efficiency improvements
  - Replacement of process control systems
  - Turbine component modifications and retrofits
  - Generator excitation system replacements

Fossil Fuel Generation Efficiency

- Long history of making incremental efficiency improvements
  - Installation of variable frequency motor drives
  - Coal blending
  - Other projects at co-owned facilities as described by Otter Tail Power Co.
  - Ongoing research projects

Fossil Fuel Generation Efficiency

- Other limitations and regulatory issues
  - Design of the installed generation and the choice of fuels
  - Regulation of air emissions under laws in states where power plant is located
  - Modification to existing generation resources often trigger Environmental Protection Agency's New Source Performance Standards

Summary

- Optimizing efficiencies through economical projects has and continues to be Montana-Dakota's standard practice
- Large efficiency improvements are limited by original equipment and coal designs.
- Environmental regulations preclude some efficiency projects or make them uneconomical.
- Integrated nature of electric systems must be considered
- A Fossil Fuel Generation Efficiency Standard should NOT be adopted