

Xcel Energy Metro Plants

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Company

Xcel Energy generates and maintains many different sources of energy used for power generation; coal, gas, nuclear, wind, solar, hydro.

Intern Project

Reduce water usage, improve monitoring capabilities, and optimize procedures on steam generating equipment and boiler water make up systems.

Incentives to Change

Reducing water usage lowers demand on treatment systems, decreasing operating costs and increasing unit lifetimes.



Solutions

Reduce Cycle Water Loss:

- Repair identified internally leaking valves
- Isolate systems not in operation, such as building heating in the summer
- Optimize rotor air cooler blowdown using new sampling information

Optimize Makeup Water System:

- Install vacuum break to prevent drainage of permeate tanks
- Improve pH control to improve water quality
- Add real time heat rate calculations to control system to improve efficiency monitoring capabilities



Reduce Water Softener Regenerations:

- Increase throughput between regenerations to reduce brine waste
- Add hardness monitor to outlet stream
- Repair leaking drain valve