

Wolf Creek Nuclear Operating Corporation Burlington, KS

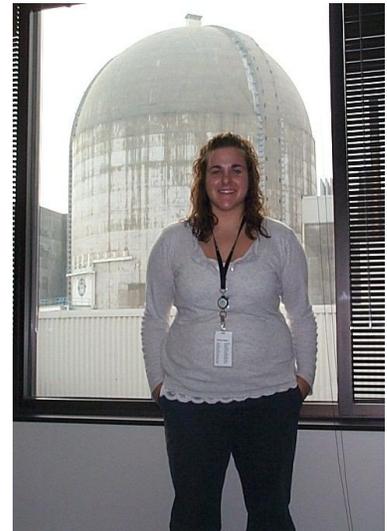
Intern: Brenna Zimmer

Major: Biochemistry

School: Emporia State University

The Company

Wolf Creek Generating Station (WCGS), near Burlington, KS, is owned by Westar Energy, Kansas City Power and Light, and Kansas Electric Power Cooperative, Inc., and is operated by Wolf Creek Nuclear Operating Corporation. WCGS is a pressurized water reactor that generates more than 1.2 million kW of electricity, which is enough power for 800,000 homes. The facility employs approximately 940 employees.



Project Background

The project at Wolf Creek generation station was to reduce or eliminate the amount of solid and hazardous waste produced. The four main areas to be studied were parts washer solvent, sodium analyzers, paint, and silver reclamation.

Incentives for Change

Wolf Creek Nuclear Operating Corporation is constantly striving to reduce or eliminate their production of solid and hazardous waste. The company is a Kansas Generator of hazardous waste and is seeking to become a Small Quantity Generator of hazardous waste. That means they seek to generate less than 55 lbs of hazardous waste per month. Achieving this goal will allow the company to reduce their regulatory requirements, employee exposure, and disposal fees.

Projects Reviewed for P2 Potential

1. Parts Washers/Solvent

Brenna Zimmer looked into changing their current type of parts washers to either water-based washers or a continuous use program. Zimmer recommend a continuous use program with Safety Kleen, where Safety Kleen will use Wolf Creek's old solvent for its own equipment. If Wolf Creek can contract with Safety Kleen to manage their used solvent in this manner, they would eliminate the \$320 per year hazardous waste disposal fees for Wolf Creek and also allow for the reuse of 2,133 pounds of solvent per year.

2. Sodium Analyzers

Wolf Creek currently uses a flammable and noxious chemical to measure the quality of their circulating water. This chemical must be disposed as hazardous waste when it is expired. Zimmer found an alternative chemical that completely exhausts itself, thus eliminating the chemical waste and saving Wolf Creek \$270 a year in disposal fees.

3. Paint

Zimmer researched the possibility of a paint-thinner recycler, but the high cost of implementation does not make it economically feasible for Wolf Creek.

4. Silver Reclamation

Wolf Creek generates 480 pounds of waste film fixer a year. Zimmer researched a Metal Recovery

Cartridge method that would put the waste film through an ion exchange to recover the silver. This silver can then be sent off for silver recovery, and the non-hazardous waste solution can be disposed of. This will save the company \$320 per year in disposal costs and eliminate 480 pounds of the hazardous waste per year.

5. Ammonium Hydroxide

When Zimmer arrived at Wolf Creek, they had 1,500 gallons of 14-year-old ammonium hydroxide sitting in a chemical storage warehouse facility on site. Zimmer researched companies who may have a need for this material and found one that could use it. By researching this waste exchange, Zimmer removed the potential hazardous waste from Wolf Creek and saved \$2,333 in disposal fees.

Summary of 2007 P2 intern recommendations for Wolf Creek Nuclear Operating Corporation			
Project Description	Environmental Impact	Annual Cost Savings	Status
Parts Washer Solvent	Reduce 2,133 lbs/year of hazardous waste	\$320.00	Recommended
Sodium Analyzers using monoethylamine	Reduce 57 lbs/year of hazardous waste	\$270.00	Recommended
Silver Reclamation from Film Fixer	Reduce 480 lbs/year of hazardous waste	\$320.00	Recommended
Ammonium Hydroxide	Reduce 10,310 lbs (one time only)	\$2,333.00	Implemented

