



Metropolitan Council Environment Committee

Process Efficiency Program

October 2011

“Energy conservation is our first line of defense in protecting the environment. But it's more than that: programs that help customers save energy provide value to all customers, because it is the least expense resource available to us.”

Ben Fowke

Chairman, President and CEO

Xcel Energy

Xcel Energy – Process Efficiency Program

- **Process Efficiency – Collaborative Goals**
- **Gold Award – MCES Recognized in C&I Group**
- **Project Overview**
- **New Memorandum of Understanding**
- **Case Study – MCES Recognized in Wastewater Industry**

Xcel Energy – Process Efficiency Program

Overview

- Launched in Jan. 2007
- Part of the Xcel Energy's Conservation Improvement Program (CIP)
- Targets large industrial processes
- MCES – 1st government customer to participate in program



Process Efficiency Program - Overview

- **Long term partnership delivers integrated approach versus project-by-project support**
- **Results in sustainable energy-efficiency strategy on an ongoing basis from year-to-year**
- **All projects under one umbrella designed to simplify administration, increase project scope and overall energy efficiencies**

Process Efficiency – Overview

MCES Commitment to Energy Efficiency

- **1ST Memorandum of Understanding with Xcel Energy Process Efficiency program in January 2007**
 - **Initial Goal → 15% energy reduction by 2010 (3yrs)**
 - **Met Goal by designated timeline**
 - **MCES received ~\$650,000 in study funding and rebates**

- **2nd Memorandum of Understanding with Xcel Energy Process Efficiency program in July 2011**
 - **Current Goal → 25% energy reduction by 2015 (4yrs)**
 - **Set 22 Million kWh in Conservation (8 Million kWh to date)**

Xcel Energy's 2011 Gold Award

- **MCES - Highest electrical savings of all the Xcel Energy's large commercial and industrial MN customers over past 18 months**
- **Electrical reduction of 11,200,000 kWh**
 - **Equivalent to unplugging 1,200 homes**
- **Savings over \$750,000 per year in electric costs**

Projects Contributing to Gold Award

- **Loop Tuning (flow efficiency) – St. Croix & Eagle’s Point WWTPs Sanitaire Model**
 - **Savings – 609,666 kWh**
- **Tunnel Lighting – Metro Plant - Lighting Redesign Pre/Post Photometric Design**
 - **Savings - 1,949,000 kWh**



Projects Contributing to Gold Award



- **Dissolved Oxygen (DO) Controls – Seneca WWTP Sanitaire Model**
 - Savings – 2,932,813 kWh

- **Aeration Basin Cleaning – Advanced Preventative Maintenance (PM) Phase II – Metroplant Sanitaire Model**
 - Savings – 4,872,147 kWh

Process Efficiency uses Sanitaire Model

- **Model used to forecast energy efficiency improvements - modified by MCES for wastewater**
- **Model allows for nearly 50 different input values**
- **Xcel Energy adopted model to measure pre and post performance of loop tuning (optimum flow), DO controls, and aeration basin advanced PM performance**
- **A model for other wastewater treatment plants**



MCES & Xcel Energy NEW Memorandum of Understanding

- **PROCESS EFFICIENCY PROGRAM – Highlights**
 - **MOU energy goal matches MCES general manager's energy goal**
 - **100% extensive study funding to identify energy saving opportunities**
 - **In 2011 MCES has already achieved 8 Million kWh annual goal to trigger enhanced rebates**

MCES & Xcel Energy NEW Memorandum of Understanding

- **PROCESS EFFICIENCY PROGRAM – Highlights – continued**
 - **Financial bonus for electric and natural gas conservation**
 - **15% annual electric and gas bonus on rebates issued for exceeding conservation goal for each by 20%**
 - **30% annual electric and gas bonus on rebates issued for exceeding conservation goal for each by 30%**
 - **10% plan optimization bonus on rebates issued for achieving cumulative 2015 energy goal**

Moving Forward

- **Mutual commitment**

- **Continue to share ideas, develop studies, implement projects**
- **Regular meetings with engineers and consultants**

- **Case Study**

- **Xcel Energy developing a case study on MCES success to share with wastewater treatment plants in the 8 state service territory**



Thank you

Wastewater to Resource Recovery