SkyFoundry

Xcel Energy
District Energy System

Denver, CO

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Applying Analytics in the Denver Colorado Xcel Energy District Energy System

Overview

Xcel Energy owns and operates a district energy system in downtown Denver offering steam heating and chilled water cooling to a variety of large customers. To improve the operation and management of this system, Xcel Energy has deployed analytics software using near real time data from the entire system including steam heat exchangers, chilled water heat exchangers, and five central chilled water plants.

For the customer's heat exchangers, the analytics software has been customized to compile energy data for monthly billing and analysis of operation. Programmed rules help identify anomalies and issues such as communication loss, unexpected readings, steam leaks or excess energy compared to predicted use. Dashboards also help visualize energy consumption and identify trends over time. These automated processes reduce the time required for monthly billing and help to correct system issues quickly.

In addition to the monitoring of customer heat exchangers, analytics and dashboards have been developed to evaluate the operation of multiple chilled water plants in a visual scorecard. Key metrics have been programmed for each plant including supply temperature deviation from setpoint, cooling efficiencies (kWh per ton-hour), and chemical levels. This automated scorecard has helped Xcel Energy improve system performance and manage operational costs.

PROJECT DETAILS

- District chilled water served by (5) distributed chilled water plants
- Advanced chilled water plant features such as ice storage and waterside economizer
- District steam served by main boiler plant
- Steam and chilled water distributed to customers throughout downtown Denver

REFERENCE
Our thanks to:

- Michael O'Malley, Xcel Energy, Operations Manager – Thermal Energy

- Group 14 Engineering, the SkyFoundry partner Supporting the project

SkySpark® – Analytics for a World of Smart Device Data

The past decade has seen dramatic advances in automation systems and smart devices. From IP connected systems using a variety of standard protocols, to support for web services and xml data schemas, it is now possible to get the data produced by the wide range of devices found in today's buildings and equipment systems.

Access to this data opens up new opportunities for the creation of value-added services to help businesses reduce energy consumption and cost and to identify opportunities to enhance operations through improved control, and replacement or repair of capital equipment. Access to the data is just the first step in that journey, however. The new challenge is how to manage and derive value from the exploding amount of data available from these smart and connected devices. SkyFoundry SkySpark directly addresses this challenge.

*The new frontier is to efficiently manage and analyze data to **find what matters™**.*

About SkyFoundry

SkyFoundry's mission is to provide software solutions for the "Internet of Things". Areas of focus include:

- Building automation and facility management
- Energy management, utility data analytics
- Remote device and equipment monitoring
- Asset management

SkyFoundry's software helps customers derive value from their investments in smart systems. Learn more and request a demonstration at www.skyfoundry.com.

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