

### **NUMAC PRNM, RWM and ATIP System Interface Project**

As part of an ongoing project to migrate the Monticello Nuclear Generating Station Plant Process Computer System (PPCS), C3-ilex has recently implemented data interfaces between GE NUMAC systems for PRNM, RWM and ATIP and the new C3-ilex supplied C3-TREK Plant Process Computer. These interfaces accomplish the following:

- Transfer the current RWM and ATIP data interfaces from obsolete plant data acquisition devices to the recently installed C3-TREK DASie I/O devices
- Transfer execution of the NUMAC RWM and ATIP data processing functions from the existing plant process computer to the C3-TREK Server.
- Interface newly procured NUMAC PRNM devices to the C3-TREK DASie I/O devices and implement execution of the PRNM data processing functions on the C3-TREK Server

The DASie is a 19 inch rack mountable chassis consisting of a power supply module and Input/Output (I/O) cards that can communicate with a variety of data acquisition system sources and translate the incoming data streams to ones that can be accessed by network addressable computers. For the Monticello application, an existing DASie was expanded with the addition of multi-port I/O cards designed to interface with the NUMAC PRNM, RWM and ATIP devices via fiber-optic cables for data acquisition, ANDS protocol translation, and provision of data to the C3-TREK host computer for subsequent processing by the PRNM, RWM and ATIP Service applications.

C3-TREK is a high performance Transient Recording and Event Knowledge system running on a Windows operating system. C3-TREK interfaces with high speed data acquisition systems and uses OSIsoft Corporation's powerful ECHO Historian to process large amounts of high speed data. For the Monticello application, the existing C3-TREK platform was expanded to provide for the following:

- Improved RWM and ATIP Services Functions to replace the user interface functions currently resident on the existing Monticello plant process computer system.
- A PRNM Services and Graphical User Interface Function to support the collection, processing and display of PRNM data (e.g., LPRM, APRM, OPRM, GAFTs and %CTP).
- A data interface to Monticello's GARDELL Core Monitoring System.
- Improved diagnostic messaging

### **About Monticello and C3-TREK**

The Monticello Nuclear Generating Plant is owned by Xcel Energy and located near Monticello, Minnesota along the Mississippi River. Monticello is a GE Boiling Water Reactor (BWR-3) in operation since 1971 and has a rated capacity of 600 MWe (a Power Uprate program is underway to increase capacity to approximately 670 MWe). In 2006 The NRC granted Monticello a twenty year license extension is now licensed to operate until 2030. In Monticello's ongoing charter to improve operational performance and sustain long-term safety and reliability, it has embarked on a program to replace and enhance outdated plant process computer system components. The procurement and installation of C3-ilex's C3-TREK and DASie platform components is an integral part of this program.

### **About C3-ilex**

C3-ilex specializes in the delivery of high quality products and services for the power generation, power transmission and distribution, and process industries. C3-ilex develops, manufactures, and markets state-of-the-art, real-time monitoring and control products and systems for industrial, commercial and government applications. C3-ilex also provides a wide range of complementary engineering and consulting services.