

NUMAC PRNM System Interface Project

C3-ilex, LLC has been awarded a contract from a New York State Electric Utility for a General Electric (GE) NUMAC Power Range Neutron Monitor (PRNM) Interface System at their Nuclear Generating Station (an 1100 MWe BWR). The supplied system will replace the existing GE MVD interface between the NUMAC PRNM and the 3DMonicores (3DM) and Plant Process Computer (PPC) Systems with a C3-ilex system based on C3-ilex's DASie and C3-TREK platforms. The C3-ilex replacement system will provide the station with a more reliable and functionally enhanced system.

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 this project, the DASie will consist of a multi-port I/O card designed to interface with PRNM Rod Block Monitor devices via fiber-optic cables for data acquisition, ANDS protocol translation, and provision of PRNM data to the C3-TREK host computer for subsequent processing by the PRNM 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 this project, the C3-TREK platform will provide for the following:

- An improved PRNM Services HMI Function to replace the PRNM user interface functions currently resident on the existing plant computer systems.
- Event Monitor and Immediate Change Report Functions that provide enhanced PRNM Sentinel and Sequence of Events capability. Event data can be made available to the plant OSIsoft PI server for data display and analysis using Pi tools like ProcessBook and DataLink..
- Support data interface(s) to the , Honeywell PPC and OSIsoft Plant Historian computer systems.

Project Background

The Nuclear Station's existing NUMAC PRNM system interfaces with the stations CMS and PPCS via a GE supplied Multi-Vendor-DAS (MVD) device. This MVD device was developed by General Electric in the 1990's and has seen extended operational use. Over time, the current MVD components have become obsolete, unreliable and a maintenance problem. Hence the need for replacement with current technology components to support extended plant operation. In 2006 the NRC granted the station a twenty year license extension until 2046.

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.