The Decommissioning and Repurposing of the DØ Cryogenic PLC System

Eric Meyers (Harper College, Palatine, IL 60067), Dan Markley and Karen Kephart (Fermi National Accelerator Laboratory, Batavia, IL 60510).

Abstract

The DØ Collider Cryogenic Programmable Logic Controller (PLC) System was partially decommissioned in order to harvest parts for future experiments within Fermilab. Altogether 4 out of 12 bases located throughout the DØ Assembly Building (DAB) were deprogrammed and removed from the main Siemens PLC System. Approximately 2,000 addresses/tags were re- moved from the database/historical record along with their associated logic being removed from the "FasTrak PLC 505 WorkShop Suite" Programming Tool (FWPT). These tags and logic correlate to a total of approximately 13,000 words (rv832 kB or 50% of the entire PLC System) of data. The 4 bases that were removed control the Silicon Management System, the cryogenic controls in the Superconducting Solenoid and Visible Light Photon Counter, and the Insulating Vacuum Controls. The equipment will be primarily utilized within the cryogenic controls in the LArIAT, LBNE, LAPD, and MicroBooNE experiments. Altogether, Fermilab has saved an estimated $100,000+ by reusing this equipment.