

The SNS Vacuum Control System Upgrade for the Superconducting Linac

Abstract

The superconducting Linac of the Spallation Neutron Source (SNS) has 23 cryomodules whose vacuum system was monitored and controlled by custom built hardware. The original control hardware was provided by Thomas Jefferson National Accelerator Facility (JLab) and contained a variety of custom boards utilizing integrated circuits to perform logic. The need for control logic changes, a desire to increase maintainability, and a desire to increase flexibility to adapt for the future has led to a Programmable Logic Controller (PLC) based upgrade. This presentation provides an overview of the commercial off-the-shelf (COTS) hardware being used in the superconducting vacuum control system. Details of the design and challenges to convert a control system during small windows of maintenance periods without disrupting beam operation will be covered in the presentation.