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C3Po1B-05: Upgradation of the SCADA-Based Control Systems for the SST-1 Cryogenics Facility

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This paper details upgrading the SCADA (Supervisory Control and Data Acquisition) system for the SST-1 cryogenic subsystems from Wonderware InTouch version 9.5 to the latest release, Wonderware InTouch 2017 R2. The upgrade was necessitated by the obsolescence of the earlier software, which lacked compatibility with modern Microsoft operating systems. Critical subsystems, including the Integrated Flow Distribution Control System (IFDCS), Current Feeder System (CFS), LN2 Management System, and the 80 K Booster System, have successfully transitioned to the updated SCADA system. Each subsystem operates with dedicated control stations that incorporate in-house developed applications using Programmable Logic Controller (PLC) and SCADA. The updated SCADA platform offers enhanced functionalities, such as real-time data acquisition, storage, and historical data retrieval for in-depth analysis. The upgrade process involved migrating existing applications to the Wonderware InTouch 2017 R2 platform, alongside developing new applications to utilize the advanced capabilities of the updated software. This paper explores the additional features integrated into the upgraded SCADA system and addresses the technical challenges encountered during the development and optimization of system performance. The successful activation of licenses and deployment of the new SCADA applications represents a significant enhancement in the automation and monitoring capabilities of the SST-1 cryogenic subsystems. The paper concludes by sharing insights gained during the upgrade process and provides recommendations for the future maintenance and enhancement of the SCADA system.

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