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Automation of upgraded NBI cooling water system

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NBI Cooling Water System is used during beam operation for the removal of received heat load from vessel sub-components. During the process of shifting the NBI Vacuum Vessel to SST-1, it was needed to shift the cooling water plant. Shifting of Cooling Water Plant leads to the dis-mantling of the actual plant and designing, development and installation of a new plant. The cooling water plant is designed for a capacity of 2895 lpm (max.) with a pressure upto 11 bar (for grids loop).

Main goal of realizing this system is the full Automation; which is achieved by using Step 7 programming for Programmable Logic Controller (PLC), Supervisory Control and Data Acquisition System (SCADA) GUI for the Control logic and data logging & TIA Portal for the PLC Touch Panel (HMI) along with necessary hardware. The paper describes the hardware tasks and the software tasks accomplished for the automation of the cooling water system.

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