

THE DIII-D NEUTRAL BEAM SCADA WORKSTATION UPGRADE*

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Some years ago, the DIII-D Neutral Beam Supervisory Control and Data Acquisition (NB SCADA) system was operated and controlled on a 486 computer running Windows 3.1 and FIXDMACS software (16-bit product) to interface and communicate with Siemens programmable logic controllers (PLCs). The NB SCADA workstation primarily receives and transmits data from and to the remote system devices in order to obtain current device status or to command status changes. This system became antiquated, and failed to adequately support new process conditions and meet the NB operational demands.

A new Pentium PC, equipped with Windows NT and 32-bit iFIX software, was acquired to upgrade the old SCADA system. This solution was a cost effective and efficient approach toward achieving these goals: maximize system performance; improve efficiency and reliability; and provide better control of the neutral beam operational processes.

In order to readily support neutral beam system operations, old FIXDMACS data was converted using Microsoft Visual Basic to conform and adapt to the new iFIX structures and formats. Besides delivering an excellent solution to monitoring the neutral beam system operations, this new software accepts Visual Basic scripts and/or programs to automate routine or repetitive tasks, allowing system administrators to execute these tasks and controls quickly. This added feature provides flexibility and simplicity for maintaining and troubleshooting purposes.

Today, the upgraded DIII-D Neutral Beam SCADA system is fully operational. The upgrade has produced faster and smoother data transmission. It promptly delivers information that enables supervisors, lead operators and managers in making decisions that would prevent or reduce system downtime. Furthermore, the system reliability has been greatly improved and consequently increasing the availability of neutral beam operations in supporting the plasma operations.

*Work supported by U.S. Department of Energy Contracts DE-AC03-99ER54463.

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