WBS Number: 51	Title: NCSX TCP/IP Network Infrastructure

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Description

General Description of Work to be Performed:
The TCP/IP network infrastructure will provide the common backbone for all data acquisition, and I&C communications. The network will consist of an extension of the NSTX Engineering network. The Engineering network is behind a secure firewall. All cable and switch infrastructure will minimally support 10/100Mbps Ethernet and all uplinks will use the existing 1 Gigabit Ethernet infrastructure already in place for NSTX.
The Test Cell Ethernet infrastructure will be implemented with fiber optic cable. 12 network drops in the test cell and control room will be deployed for Day One operations. The cost basis will assume current prices for 10 Mbps and 100Mbps Ethernet equipment. New switch port modules will be deployed in five locations:

1. D-Site FCPC
2. D-Site MG
3. C-Site S1 area
4. C-Site NCSX Control Room
5. PPLCC

Two fiber optic distribution panels will be located in the Test Cell on each side of the machine. A fiber optic infrastructure consisting of 144 fibers between D-Site and C-Site RF building will be deployed for facility timing and synchronization, and real time data acquisition. 120 fiber optic cables for diagnostic and I&C requirements will be deployed between the control room and the test cell. A wireless Ethernet transceiver will be deployed in the test cell to aid in troubleshooting, and for use by collaborators.

Description of Existing Equipment/Facilities to be Reused:
This network infrastructure will interface to the existing PPLnet infrastructure, and will use existing components as much as possible in the design.

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Description of Major Modifications Required to Existing Equipment/Facilities:
No major modifications to the existing PPLnet will be required for this implementation.

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