

SECTION 40 61 26

PROCESS CONTROL SYSTEM TRAINING

PART 1 - GENERAL

1.1 REQUIREMENTS AND RESPONSIBILITIES

- A. CONTRACTOR shall provide all labor, materials, equipment and incidentals as shown, specified and required to perform and coordinate all required training at times acceptable to OWNER and ENGINEER.
- B. CONTRACTOR shall retain the services of the I&C System Supplier (hereinafter referred to as Supplier) to provide operation and maintenance training for all PCS equipment as specified herein.
- C. For equipment items not manufactured by Supplier, the Supplier shall provide for on-site training by an authorized representative of the equipment manufacturer as part of the Supplier's services. The manufacturer's representative shall be fully knowledgeable in the operation and maintenance of the equipment.
- D. CONTRACTOR shall be responsible for all costs, including cost of travel, meals and lodging, if required, associated with training, both on-site and at the Supplier's facilities, and shall provide all required materials, texts and required supplies. A total of 10 will be attending training courses on-site.
- E. All training shall be conducted in the normal eight-hour working days until conclusion of the training course. For training at the Supplier's facility, the course instructor shall be assigned full time and shall not perform other duties throughout the period of the course.

1.2 SUBMITTALS

- A. Within 30 days of the effective date of the Notice to Proceed, CONTRACTOR shall submit his plan for training conforming to the requirements of Section 01 79 23, Instruction of Operations and Maintenance Personnel. Included in the plan shall be course outlines and schedules for training to be provided at the Supplier's facilities.

1.3 ON-SITE TRAINING

- A. Primary Sensors/Transducers and Field Instruments, Panel Mounted Instruments and Devices, Process Control Computers and Network Hardware:
 - 1. Provide on-site operation and maintenance training by Supplier and the equipment manufacturer representatives prior to placing the equipment in

continuous operation, conforming to the requirements of Section 01 79 23, Instruction of Operations and Maintenance Personnel. Provide 24 hours of operations training for Primary Sensors and Field Instruments, 8 hours of training for Panel Mounted Instruments and Devices, and 8 hours of training for Process Control Computers and Network Hardware.

2. Training shall accomplish the following:
 - a. Provide instruction covering use and operation of the equipment to perform the intended functions.
 - b. Provide instruction covering procedures for routine, preventive and troubleshooting maintenance including equipment calibration.
 - c. Explain procedures for placing the equipment in and out of operation and explain necessary actions and precautions to be taken regarding the overall plant monitoring and control system.
- B. Training covering the control equipment:
1. The Supplier shall provide 16 hours of operations training covering all system components.
 2. Training course shall accomplish the following:
 - a. Provide all instructions necessary to operate and utilize all system components.
 - b. Provide all instruction necessary to monitor and control the system processes from the designated control panel.
 - c. Explain procedures for control of the system during scheduled or rescheduled shutdown and the subsequent start-up.
 - d. Provide instructions for regular caretaking operations.
- C. PLC and HMI Training:
1. The PCS Supplier shall provide 16 hours of training (8 hours of PLCs and 8 hours of HMIs) that covers PLCs and HMI systems as follows:
 - a. Provide an overview of system hardware and software.
 - b. It shall train people in configuration, operation and programming processors.
 - c. The emphasis shall be placed on how to perform set point changes, minor programming changes, range changes, diagnostics and upkeep of documentation.
 - d. Instruction for hardware and software maintenance, trouble shooting and maintenance planning.
- D. PCS Operational Training:
1. Training prior to Operation Availability Demonstration (OAD):
 - a. Provide 24 hours of operations training covering all system components prior to the start of the OAD.
 - b. Training course shall accomplish the following:
 - 1) Overview of systems functional capabilities.
 - 2) Equipment overview including system component functions, operating principals and proper use.
 - 3) Loading and start-up of the digital system hardware components.

- 4) Use of system commands.
 - 5) Use of storage device for system backup.
 - 6) Description of the maintenance and troubleshooting aids of the system, including software diagnostic programs.
 - 7) Description of peripheral and other connected devices.
- c. Personnel attending the training shall be capable of assuming the position of system operator during the OAD.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++