CITY OF FORT WAYNE MASTER UPDATED: 12/8/2014

SECTION 40 61 63

PROCESS CONTROL SYSTEM - TRAINING

1. – GENERAL
	1. SUMMARY
		1. Section Includes:
			1. Training at Supplier’s Facility
			2. Training on-site.
	2. SEQUENCING AND SCHEDULING

NTS: Engineer shall develop Specification for the training of operation and maintenance staff and coordinate name and number of specification with reference below.

* + 1. In accordance with requirements in Section 01 79 23 – Instruction of Operations and Maintenance Personnel.
		2. See Section 40 61 13 – Process Control Systems (PCS) General Provisions for training related to field instrumentation.
		3. Maintenance Training: 30 to 60 days prior to Substantial Completion.
	1. REQUIREMENTS AND RESPONSIBILITIES
		1. 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.
		2. CONTRACTOR shall retain the services of the Supplier to provide operation and maintenance training for all plant monitoring equipment, control system equipment, and computer equipment as specified herein.
		3. For equipment items not manufactured by the 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.

NTS: Insert at (--1--) the required number of people.

* + 1. 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 suppliers facilities, and shall provide all required materials, texts and required supplies. A total of (--1--) will be attending training courses at the Supplier's facility.
		2. 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.

NTS: Delete article "1.4" if not required.

* 1. TRAINING AT THE SUPPLIER'S FACILITY
		1. General:
			1. CONTRACTOR shall provide a Supplier who shall perform standard¬ized, structured training courses at an established training facility staffed with regular full time training instructors covering both operation and maintenance of the system equipment furnished by the Supplier.
			2. All training shall be scheduled so that it has been completed prior to the start of the factory testing of the system.

NTS: Insert at (--1--) and (--2--) the required number of people.

* + - 1. OWNER will send the following personnel to attend training courses at the Suppliers facilities.
				1. Operations Training: (--1--) persons.
				2. Maintenance Training: (--2--) persons.

NTS: Insert at (--1--) number of days. Insert at (--2--) the equipment covered in the training.

* + 1. Operator Training Course:
			1. Provide a (--1--) days, eight hours per day, entertaining course covering the structure and the functions of the (--2--) and other system components and devices. The course shall familiarize the student with the procedures for applying the system to process control problems.
			2. As a minimum, the course shall cover the following topics:
				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 and interface.
				5. System backup and restoration.

NTS: Insert at (--1--) number of days.

* + 1. Maintenance Training Course:
			1. Provide a (--1--) days, eight hours per day, course covering preventive and troubleshooting maintenance for the system components. The course shall familiarize the student with diagnostic capabilities of the system, both software and hardware, and also the routine maintenance procedures on the system and the common peripheral devices.
			2. As a minimum the course shall cover the following topics:
				1. System overview description including the power subsystems and logic components of the processor bus.
				2. Description of the maintenance and troubleshooting aids of the system including software diagnostic programs.
				3. Description of all bus operations.
				4. Description of peripheral and process interface devices.
				5. Development of programs and control schemes.
				6. Development and use of system displays.
				7. Programming concepts and techniques.

NTS: Edit as required.

* 1. ON SITE TRAINING
		1. Primary Sensors/Transducers and Field Instruments:
			1. Provide on site operation and independent 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. The services of equipment manufacturer's representatives shall be provided for a minimum of one hour for each type of instrument provided.
			2. Training shall accomplish the following:
				1. Provide instruction covering use and operation of the equipment to perform the intended functions.
				2. Provide instruction covering procedures for routine, preventive and troubleshooting maintenance.
				3. Provide instruction covering procedures for equipment calibration.
				4. 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.

NTS: Insert at (--1--) required days.

* + 1. Training covering the control equipment:
			1. The Supplier shall provide (--1--) days of operations training covering all system components.
			2. Training course shall accomplish the following:
				1. Provide all instructions necessary to operate and utilize all system components.
				2. Provide all instruction necessary to monitor and control the system processes from the designated control panel.
				3. Explain procedures for control of the system during scheduled or rescheduled shutdown and the subsequent start-up.
				4. Provide instructions for regular caretaking operations.
		2. (--1--) Training:
			1. The Contractor shall provide training that covers PLC as follows:
				1. Provide an overview of system hardware and software.
				2. It shall train people in configuration, operation and programming processors.
				3. The emphasis shall be placed on how to perform set point changes, minor programming changes, range changes, diagnostics and upkeep of documentation.
				4. Instruction for hardware and software maintenance, trouble shooting and maintenance planning.
		3. Computer Hardware and Software:
			1. Training prior to Systems Demonstration:

NTS: Insert at (--1--) number of days (depending on size and scope of project).

* + - * 1. Provide (--1--) days of operations training covering all system components prior to the start of the Systems Demonstration.
				2. Training course shall accomplish the following:

Overview of systems functional capabilities.

Equipment overview including system component functions, operating principals and proper use.

Loading and start up of the digital system hardware components.

Use of system commands.

Use of storage device for system backup.

Description of the maintenance and troubleshooting aids of the system, including software diagnostic programs.

Description of peripheral and other connected devices.

* + - * 1. Personnel attending the training shall be capable of assuming the position of system operator during the Systems Demonstration.

NTS: Insert at (--1--) number of days (depending on size and scope of project).

* + 1. Training following two months of regular system operations:
			1. The Supplier shall provide operation and maintenance covering all system equipment provided.
			2. Provide (--1--) days of operations training covering all system components.
			3. Training shall be question and answer format.
1. – PRODUCTS (NOT USED)
2. – EXECUTION (NOT USED)

.

END OF SECTION