

**SECTION 23 08 11
DEMONSTRATIONS AND TESTS FOR BOILER PLANT**

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Procedures for on-site demonstration and testing of equipment and systems, including temporary facilities.
- B. Instruction of Government operating personnel.
- C. All demonstrations, instructions and testing must be completed prior to Government acceptance for beneficial use.
- D. Plumbing and emergency power systems are not included.

1.2 DEFINITIONS

- A. Start-Up: Initial inspection, cleaning, lubrication, adjustment, and operation of equipment and systems by the contractor with the assistance of the representatives of the equipment manufacturers.
- B. Pre-Tests: The final stage of the start-up procedure. This occurs after all adjustments have been made except for minor fine-tuning that can be done during the pre-test. Serves as verification that the systems are ready for the final test. Witnessing of pre-test by the Contracting Officer Technical Representative (COTR) is not required.
- C. Final Tests: Tests, witnessed by the COTR or their representative, which demonstrate that all equipment and systems are in compliance with requirements. At VA expense, VA may utilize the services of an independent testing organization or consultant to witness the tests.

1.3 RELATED REQUIREMENTS

- A. Sound and vibration levels; sound tests and vibration testing of rotating equipment: Section 23 05 51, NOISE AND VIBRATION CONTROL FOR BOILER PLANT.
- B. Demonstration and testing of feedwater deaerator: Section 23 50 11, BOILER PLANT MECHANICAL EQUIPMENT.
- C. Demonstration and testing of boiler plant instrumentation, controls and computer work station: Section 23 09 11, INSTRUMENTATION AND CONTROL FOR BOILER PLANT.

1.4 QUALITY ASSURANCE

- A. Experienced, trained technical service personnel who are representatives of the equipment manufacturers and system designers shall demonstrate, provide instructions, pre-test and final test, as specified, the following equipment:

VA New England Healthcare System, Manchester Campus
Building #7, Boiler Plant Safety Improvements
VA Project #608-11-110
vZHS Project #2007190.88

1. Control systems.
 2. Instrumentation.
 3. Deaerating feedwater heater
 4. Condensate Receiver
 5. Boiler Blowdown
- B. Experienced technicians shall demonstrate and provide instructions on the following equipment:
1. Pumps and piping systems
 2. Control and safety valves
- C. The person responsible for programming the computer workstation shall demonstrate and provide instructions on hardware, software and programming.
- D. The COTR, upon request, will provide a list of personnel to receive instructions and will coordinate their attendance at agreed-upon times.

1.5 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Names and qualifications of personnel performing demonstrations, instructions and tests.
- C. Certification that pre-testing is complete. Copies of feedwater deaerator pre-test data as specified.
- D. Preliminary schedule of all demonstrations, instructions and final tests two weeks prior to proposed dates.
- E. Provide reports within three weeks after satisfactory completion of demonstrations, instructions, and tests. List date, type of work, persons participating, amount of time, test results, calculations of test results, test data.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION FOR FINAL TESTS, DEMONSTRATIONS, AND INSTRUCTIONS

- A. Verify that equipment and systems are fully operational. Complete all start-up and pre-test activities for all equipment and systems. Complete all construction and finish work.
- B. Arrange for all test personnel for all equipment to be continuously present during one period of time so that all equipment and systems can be tested in their interrelated functions.

- C. Deliver maintenance and operating manuals four weeks prior to instruction period.
- D. Furnish all special tools.

3.2 FINAL TESTS

- A. Demonstrate proper operation of each equipment and system.
- B. Provide tests on equipment as specified in the individual specification sections.

3.3 DEMONSTRATIONS AND INSTRUCTION

- A. Demonstrate operation and maintenance of equipment and systems to Government personnel no more than four weeks prior to scheduled Government operation of the plant.
- B. Use operation and maintenance manuals as basis of instruction. Review contents of manuals with personnel in detail to explain all aspects of operation and maintenance.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shut-down of each item of equipment. Allow Government personnel to practice operating the equipment under supervision of instructors.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instructions.

3.4 TIME ALLOCATED FOR DEMONSTRATIONS AND INSTRUCTIONS

- A. At least 4 total instructor hours to include computer workstation, programs and instrumentation.
- B. At least eight total instructor hours to include pumps, feedwater deaerator, and other equipment.
- C. Do not exceed three trainees per session, one-four hour session, per day, per trainee.

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