

SECTION 230520 - PIPING SYSTEMS: FLUSHING AND CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

1.2 SCOPE

- A. Completely flush and clean the new piping systems for chilled water prior to making final connections to the existing central system. Provide all plant, materials, equipment and labor required to flush and clean the new piping systems prior to operation.

1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division-23 and to all other applicable portions of the Drawings and Specifications.

1.4 SHOP DRAWINGS

- A. Include specific data on: all chemicals, feeders, blow down valves and like items; as well as complete piping diagrams. Include complete description of methods.

1.5 PRESSURE AND TEMPERATURE RATINGS

- A. Unless otherwise specified in this section, components specified by this section shall be recommended and rated for same (or greater) maximum working pressure and temperature conditions which are applicable to the fluid system at the location(s) at which the equipment and systems of this section are installed. Refer to specification section(s) describing the related fluid systems(s) for pressure and temperature ratings applicable to the components of this section.

1.6 MANUFACTURER'S QUALIFICATIONS

- A. The water treatment chemical supplier shall be a recognized specialist, active in the field of industrial water treatment for at least ten years.

PART 2 - PRODUCTS

2.1 SHOT FEEDER

- A. Provide a temporary shot feeder installed across the pumping system suction and discharge sides to allow injection of cleaning chemicals into the system.

- B. Shot feeders shall be Mogul, Mitco, Garrett Callahan, Culligan, Nalco or equivalent.

2.2 WATER TREATMENT CHEMICALS

- A. Formulation shall not contain any ingredients which are harmful to system materials.
- B. Chemicals shall be supplied same manufacturer that is currently supplying chemicals to the owner.

PART 3 - EXECUTION

3.1 GENERAL

- A. Install chemical feeding systems as indicated, in accordance with manufacturer's installation instructions, to comply with requirements and intended purposes.

3.2 SHOT FEEDER

- A. Install shot feeder with adequate pressure differential to permit flow through the chemical feeder body. Connect feed piping to inlet and outlet connections with shutoff valves. Pipe drain valve discharge to drain.
- B. Provide all hardware and chemicals for start-up of system and full operation of initial system fill.
- C. Connect water treatment piping system to mechanical systems and comply with equipment manufacturer's instructions where not otherwise indicated. Install shutoff valve and union or flanges on supply and return, drain valve on drain connection.

3.3 CLEANING AND FLUSHING

- A. All piping lines and related equipment shall be thoroughly flushed out with precleaning chemicals designed to remove deposition such as pipe dope, oils, loose rust and mill scale and other extraneous materials. Add recommended dosages of precleaner chemical products and circulate throughout the water system. Feed chemicals at the proper feed rates, check that the cleaning solution is actually in each system, flush the system and shall check each system following flushing to insure all cleaning chemicals have been removed from each system. Open all modulating valves, zone valves and all other system restrictions. Drain, fill and flush system until no foreign matter is observed.
- B. Chemical used for cleaning of systems shall comply with the recommendations of the manufacturers of the major components in the system.
- C. A certificate of cleaning shall be provided by the cleaning chemical supplier to the Owner.

3.4 PIPING

- A. Installation of piping shall be made in a manner which provides for all drains and temporary connections necessary to clean and flush the new piping systems.

3.5 OTHER REQUIREMENTS

- A. Provide all necessary pipe, valves, fittings, unions and other items necessary for proper installation and removal of all components needed to clean and flush the system.
- B. Locate temporary shot type feeder in valved bypass from pump discharge to pump suction. Provide gate valve in bypass on each side of feeder.

END OF SECTION 230520