

SECTION -SWIMMING POOL WATER CHEMISTRY CONTROL

1.01 SUMMARY

- A. A **CHEMICAL AUTOMATION SYSTEM** shall be supplied for continuous monitoring of water chemistry and for automatic control of the active sanitizer and pH levels in the swimming pool or spa.
- B. The system shall be a **CHEMTROL® 250 DIGITAL CONTROLLER** of current design and production model manufactured by **SANTA BARBARA CONTROL SYSTEMS** of Santa Barbara, California or a technically equal system certified by the specifying agent as capable of providing equal performance for all operating functions.
- C. Exceptions to the specifications shall be described in detail together with a list of ten (10) similar operating systems of same model and manufacture, with the name, address and telephone number of operating personnel.

1.02 SPECIFICATIONS

A. CHEMISTRY CONTROLLER

- 1. The controller shall be microprocessor based and shall feature separate digital readouts for ORP and pH. All instrumentation shall be enclosed in a watertight non-metallic cabinet with a clear window cover. All operating controls, calibration adjustments and safety alarm settings shall be accessible from the front panel.
- 2. The control system shall automatically activate the appropriate chemical feeders in order to maintain the Oxidation-Reduction Potential (ORP) of the Free Active Sanitizer level within +/- 10 millivolts (mV) and the pH within +/- 0.1 of the setpoints selected by the operator. Setpoint selection shall be by direct dialing on scales calibrated in mV of ORP and in pH units.
- 3. The control system shall include the following feed modes: off, manual, automatic and proportional. The feed rate in the proportional zone shall be adjustable by the changing the bandwidth of the zone from 1% to 100% of the setpoint value.
- 4. The face panel shall feature two LED digital readouts for mV of ORP and for pH units. Calibration of the pH display shall be adjustable from the front panel, using a standard chemical test kit for pH. ORP requires no calibration.
- 5. Audible, visual and remote alarms shall be activated by high/ low pH or sanitizer conditions and by the overfeed safety timers. All alarm settings shall be adjustable from the front panel. An interlock jumper shall prevent sanitizer feeding if the pH is below 7.0 or above 8.0.
- 6. All electronics shall be mounted on a single enclosed, plug-in PC board and shall be coated with a corrosion-proof coating. The sanitizer and pH sensors shall be potentiometric. The sanitizer sensor shall be a sealed combination oxidation-reduction potential (ORP) electrode with a platinum ring having a minimum area of 0.5 cm². The pH sensor shall be a sealed combination glass electrode.

B. OPTIONS

- 1. OPTION FCA: The ORP and pH sensors shall be mounted in a see-through flow cell with a clear cover, pre-assembled with a water spigot and two (2) ball valves.

C. WARRANTY

- 1. The controller electronics shall be covered by a standard manufacturer warranty of five (5) years. Special extensions of more limited warranties shall not be considered acceptable. All sensors will be covered by a standard one (1) year warranty. Other parts shall be covered by their own manufacturer's warranty.
- 2. The manufacturer shall supply a complete instruction, operating and maintenance manual.