SECTION 13 11 14 - MAINTENANCE AND OPERATIONS TRAINING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Training of the Owner's personnel in Pool operations procedures.
B. Sequence of operations basis if design.

1.2 RELATED DOCUMENTS

A. Drawings and Contracting Requirements, including General and Supplementary Conditions and Division 01 - General Requirements, apply to this Section.

1.3 DESCRIPTION OF WORK

A. Operations and maintenance instruction and manuals.

B. Water Treatment and Balancing.

1.4 SUBMITTALS

A. Operations and Maintenance (O&M) Manual
   1. Pool Contractor shall deliver to the Architect/Engineer, bound together in a three ring binder a complete manual, three (3) complete sets of operating and maintenance instructions for the swimming pool structure(s), finishes, and all component equipment. O&M Manual shall include, but is not limited to, the following:
      a. Table of contents.
      b. All equipment cut sheets.
      c. Accurate parts lists.
      d. Pool start-up and emptying instructions specific to project.
      e. Pool cleaning instructions.
      f. Pool maintenance requirements, divided into the following:
         1) Daily
         2) Weekly
         3) Monthly
         4) Seasonally
         5) Annually
      g. Narrative on the pool operation through all sequences.
      h. A DVD of complete start-up and shut-down procedures and training session.
      i. Trouble shooting information and procedures.
      j. A schematic of piping as installed.
      k. Valve charts for each piping system, consisting of isometric drawings or piping layouts showing and identifying each valve and describing its function.
      l. Record Drawings
      m. Warranties

PART 2 MATERIALS

A. Not used.

PART 3 EXECUTION

3.1 OPERATIONS & MAINTENANCE INSTRUCTION

A. Provide an experienced swimming pool operator-instructor (NSPI certified pool operator) for a period of not less than one (1) days full day's operations and start-up, and one (1) full day shut-down assistance after the pool has been filled and initially placed into operation.
   1. During this period the Owner's designated representative(s) shall be thoroughly instructed in all phases of the pool's operation, including start-up and emptying procedures.
   2. Prior to this instructor leaving the Site, instructor shall obtain written certification from the Owner's designated representative acknowledging that the instruction period has been completed and all necessary operating information provided.

B. Include the cost of one (1) additional day of instruction and operational checkout/verification by an experienced swimming pool operator-instructor during the first year's operation.

C. Provide a DVD documenting training and operational requirements, including start-up, and emptying procedures.

3.2 WATER FEATURE BALANCING

1. The "Basis of Design" for the base bid design is based on a lower flow that cannot operate all the features @ 100% capacity. Various spray features will need to be throttled down or closed. The contractor shall coordinate with the owner on field adjustments required to accommodate desired affects.

3.3 WATER TREATMENT AND BALANCING

A. Obtain a chemical analysis of the source/pool make-up water supply and submit to Architect/Engineer prior to ordering water treatment chemicals. Include the following:
   1. Total Alkalinity/PPM
   2. Calcium Hardness/PPM
   3. Chlorine/PPM
   4. pH
   5. Iron
   6. Copper

B. Provide a list of required chemicals and an estimate of quantities required to the Owner in sufficient time to allow the Owner to purchase chemicals.

C. Treat and balance pool water prior to turnover of pool to the Owner (using water and chemicals provided by the Owner).

D. Pool water: balance to establish a total alkalinity level of 60-125 PPM and calcium hardness level of 180-375 PPM (3 times alkalinity level).

Sequence of Operations
SPRAY PAD WITH MANUAL BACKWASH SAND FILTER SYSTEM

- *Filtration Pump:*
  - The normal operating position of the filtration pump VFD HOA switch is the “Auto” position. In the “Auto” position the filtration pump shall run at design flow (frequency).
  - The filtration pump shall run when the “Off-Backwash-Filtration” selector switch is in the Backwash or Filtration positions.

- *Activity Pumps (Alternate)*:
  - The Activity Pumps shall be interlocked when the UV unit fails to produce the required UV dosage, the Activity pumps will shut down.

- *“Off-Backwash-Filtration” selector switch:*
  - Normal operation is in filtration mode.
  - The filter backwash cycle is activated when the selector switch is in the backwash position.

- *Chemical Controller(& Chemical Feed Outlets:*
  - The chemical controller CPU shall be powered at all times.
  - The chemical feed outlets shall be fed by the chemical controller terminal panel and interlocked such that if the filtration pump selector switch is in the Off or Backwash positions; the feed outlets are inactive.
  - Chemical controller energizes / de-energizes chemical feed outlets based upon pool water chemistry.

- *Chemical Feed Pumps*
  - The Chemical Feed Pumps are energized by the Chemical Feed Outlets that are directly fed from the chemical controller.

- *CO2 Feed Solenoid*
  - The CO2 Feed Solenoid is activated by the Chemical Feed Outlets that are directly fed from the chemical controller.

- *Pulsar Chlorine Feeder:*
  - The chemical feed method for a pulsar unit is a solenoid valve.
  - The solenoid valve is activated by the chemical controller chlorine feed outlet.
  - The chlorine booster pump is normally ON.
  - The chlorine booster pump shall be interlocked such that if the filtration pump selector switch is in the Off or Backwash positions the pulsar booster pump is inactive.

- *Ultraviolet (UV) Disinfection Unit:*
  - The UV system shall be interlocked that when the UV unit fails to produce the required UV dosage the Activity Pumps will shut down.

- When *flow meter* power supply is energized flow meter sensor / transmitter provide flow readout in gpm.

FILTRATION

Mode	Filtration Pump	Chemical Booster Pump	Chemical Controller
Off			
Filtration	X	X	X
Backwash	X		

ACTIVITY PUMP

Mode	Activity Pump	UV SYSTEM
Off		
ON	X	X

END OF SECTION