ODA_KILLA UV PUMP STATION ODOR CONTROL SYSTEM
EQUIPMENT SPECIFICATIONS

PART 1 - GENERAL

1.1 SCOPE

A. The work specified herein shall include furnishing all equipment necessary to provide a completely operational Odor Control System. The supplier shall be responsible for providing a complete Odor Control System that shall include, but not be limited to air separation vessel, injection nozzles, oxidant supply system, process controller, induced draft ventilation fan, ducting, dampers, and all necessary accessories.

B. The specifications herein state the minimum requirements of the odor control system. Unauthorized conditions, limitations, or provisions may be cause for rejection. The project engineer may consider as “irregular” or “non-responsive” and reject any bid not prepared and submitted in accordance with the specifications, or any bid lacking sufficient technical literature to enable a reasonable determination of compliance to the specifications. In comparing proposals, consideration will not be confined to price only. The successful bidder will be the one whose product is judged to best serve the interests of the end user when price, operating costs, maintenance costs, product, safety, and delivery are considered. The engineer reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities.

C. In order to be fair to all bidders, any request for interpretation of the specifications shall be made in writing to the engineer. Based upon such inquiry, the engineer may choose to issue an addendum to the specifications.

1.2 DESCRIPTION

A. Odor Control System: The Supplier shall furnish and install a complete "once-through", wired, and packaged odor control system including air separation chamber, oxidant generator, induced draft ventilation fan, fittings, ductwork, and all other equipment and accessories as specified to provide a complete and functioning system. An induced draft fan will be used to ventilate the pump stations wet well air space. This induced draft fan will also control the flow rate, oxidant mixing, and contact time. The oxidant will be produced in the reaction chamber and mixed with the ventilation air stream to destroy the odorous compounds.

B. Specified Manufacturer: Sun Coast Hydraulic Electric Manufacturing
4130 N. Canal St
Jacksonville, FL 32209
(904)693-3318

or pre-approved equal.

C. Design Basis: The mechanical, structural, process, and electrical design has been based on the Oda-Killa UV odor control system manufactured by Sun Coast Hydraulic Electric Manufacturing. Bids will be accepted for consideration on any pre-approved make or model that is equal or superior to the unit specified. In order to be pre-approved, manufacturers must submit documentation in accordance with section 1.4 C of this specification 10 working days prior to the established bid date.

1.3 QUALITY ASSURANCE

A. Manufacturer: The products furnished under this section shall be by a manufacturer who has been regularly engaged in the design and manufacture of the equipment and who has a minimum of 10 years experience in design, fabrication, and testing of water / waste water control systems. Demonstrate to the satisfaction of the engineer that the quality is equal to equipment made by those manufacturers specifically named herein.

B. Inspection and Testing Requirements: The engineer reserves the right to reject delivery of any or all pieces of equipment found, upon inspection, to have any or all of the following: blisters, chips, cracks, burned areas, pits, foreign matter, surface porosity, sharp discontinuity, or entrapped air at the surface of the contact chamber.

C. The engineer reserves the right to be present at the fabricator's facility for visual inspection of equipment to be supplied.

D. Upon completion of the installation, each piece of equipment and each system shall be tested for satisfactory operation without excessive noise, vibration, overheating, etc. Compliance shall be based on the equipment manufacturer's specifications and all applicable standards.

E. The manufacturer shall be on site and responsible for the successful startup and testing of each odor control system.

1.4 SUBMITTALS

A. The Supplier shall submit complete Shop Drawings for the System, together with all piping, ductwork, valves, and control for review by the engineer.

B. Shop Drawings: The Supplier shall submit the following information for approval before equipment is fabricated:
   1. Drawings of system showing assemblies, arrangements, piping, electrical, mounting details, equipment outline dimensions, operating weights of all equipment and sufficient information to allow the engineer to check clearances, connections, and conformance with the specifications.
   2. Materials of construction of all equipment.

3. Manufacturer's catalog data, operating literature, specifications, and performance data.
4. Complete instrumentation, control, logic, and power wiring diagrams in sufficient detail to allow installation of the instrumentation, controls, and electrical components.
5. Furnish manufacturer's installation, operation and maintenance manuals and spare parts lists.

C. Each supplier submitting an alternate to the equipment defined herein shall provide the following submittals 10 working days prior to the established bid date. Failure to provide a complete and thorough bid submittal package shall render their pre-approval request non-responsive and will not be considered. Approval of manufacturers will be at the sole interpretation of the engineer. If requested, the bidder must be prepared to demonstrate a unit similar to the one proposed. The following information is required:
   1. A complete set of drawings as described in Section 1.4.B. Provide a minimum of one drawing per system clearly showing how the proposed system will fit on each pump station site.
   2. A reference list of installations of the type and size of system proposed. The list shall include the accurate contact information, placed in service date, and design conditions including air flow rate and H2S loading. Provide performance data showing the inlet and outlet levels of hydrogen sulfide. Failure to submit references for non-standard units may deem the proposal "non-responsive" and will be rejected without further review.
   3. A complete summary of operating cost shall be provided.
   4. A copy of the performance guarantee and the warranty.
   5. It shall be the bidder's responsibility to carefully examine each item of the specifications. Failure to offer a completed bid or failure to respond to each section of the technical specifications will cause the proposal to be rejected without further review as "non-responsive." All exceptions and/or deviations shall be fully described in the appropriate section. The bidder must include a separate sheet listing any and all deviations to the specifications. Each deviation must reference the listed specification and explain in full detail how the proposed system is different.
   6. In comparing proposals, consideration will not be confined to price only. The successful bidder will be the one whose product is judged to best serve the interests of the end user when price, operating costs, maintenance costs, product, safety, and delivery are considered. The engineer reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities.

1.5 MANUFACTURER'S SERVICES

A. The system manufacturer shall be present at the job site for the following time period; travel time excluded:
   1. Sixteen hours for inspection of the installation and training of Owner's staff in operation of the system.
   2. Provide one trip for two days for these tasks.

PART 2 – PRODUCTS

2.1 GENERAL

A. The supplier shall provide an odor control system, which shall treat in a single pass the odorous air from the contaminated areas. The system shall be designed for continuous, automatic operation and also be capable of manual operation. The system shall be designed to withstand a temperature up to 110 Deg. F. The control system and all accessories shall be factory mounted, piped, and wired to the maximum extent possible. The system shall be provided by Sun Coast Hydraulic Electric Manufacturing Jacksonville, Florida or pre-approved equal.

2.2 DESIGN AND PERFORMANCE CRITERIA

A. The system shall be capable of removing foul air from the lift station at a rate that will achieve complete ventilation of the air space above the lift station water level.
B. The system shall be capable of treating foul air removed from the lift station with an average of 25ppm and a peak of 200ppm concentration of hydrogen sulfide (H2S).

2.3 OXIDATION SYSTEM:

A. The odorous gas treatment system shall be a single pass oxidation system designed to remove a minimum of 90.0% of H2S vapor in a single pass. The system shall consist of an oxidant feed system, mixing chamber, contact chamber, ducting, and an induced draft ventilation fan to optimize the oxidation of the foul odors.

B. The mixing chamber and contact chamber will be constructed of HDPE or fiberglass. If fiberglass is used, it will be protected by a UV resistant coating on the inside and outside surfaces.

C. The system ducting will be constructed of materials that will not suffer any corrosion from being in contact with lift station gases or powerful oxidants with out the use of liners, paint, or any covering.

D. The overall system size, including the fan, controls, and contact chamber shall not exceed 48”W x 96”L x 48”H unless shown differently on the contract drawings.

E. The system shall be provided with all piping, valves, internals, and hardware. These items shall be constructed from corrosion proof materials rated for exposure to corrosive gases. Unless otherwise specified, all fasteners, and metal attachments, such as anchors, brackets, etc. shall be ANSI 316SS.

2.4 EXHAUST FAN

A. Induced draft ventilation fan shall be centrifugal radial blade wheel design manufactured using corrosion resistant materials. The fan shall be ETL or UL listed for outdoor use. The wheel shall be statically and dynamically balanced.

B. The fan inlet shall draw in clean air through a corrosion resistant grill. The fan outlet shall pressurize the induced draft chamber crating suction on the reaction chamber and the pipe connected to the lift station air space.

C. The fan shall be direct driven and suitable for use with a variable speed controller.

D. The fan shall be designed for airflow rate of 327CFM at 0 Static Pressure WC and 207CFM at 1.0 Static pressure WC.

2.5 SYSTEM CONTROLS

A. The odor control system electrical control panel shall provide all of the process control functions including control of the ventilation fan, oxidant generation, and system enclosure cooling. A 120 VAC, 1-phase power supply shall be supplied to the panel to power the system.

B. The control panel enclosure shall be of fiberglass construction and rated NEMA 4X. The panel shall be mounted to the system assembly and factory tested to full operation with all other components prior to shipment.

C. The control panel shall have the following components or capabilities:
   1. Power On/Off switch
   2. Electrical surge protection

D. The odor control system shall offer the option of a telemetry system for remote control and monitoring.

PART 3 - EXECUTION

3.1 SITE AND UTILITIES

A. The system shall be located on a foundation as shown on the drawing. 120VAC electrical power shall be provided at the site and located as shown on the drawing. Site preparation, utility service, and installation as defined herein are to be provided by the end user.

3.2 START-UP AND TRAINING

A. The services of a factory representative shall be provided as specified in Section 1.6 to ensure proper installation and start-up of the system. The manufacturer shall make any changes to the system that may be necessary to meet the specified performance under inlet conditions as specified.

B. One digital and three printed copies of the system manual will be provided to the customer during system start-up and training.

3.3 OPERATION AND MAINTENANCE MANUALS

A. Three manuals shall be submitted prior to final acceptance of the equipment.

3.4 WARRANTY

A. Supplier shall warrantee the complete system, both in material and workmanship, for a period of one year from the day of beneficial occupancy. This period shall not extend beyond 18 months after delivery of equipment to job site.

3.5 SERVICE CENTER

A. To be an approved odor control system supplier, the system supplier shall have complete ongoing service capability with factory-trained personnel. The approved supplier shall have a service center located within a 250-mile radius of the job site. The personnel from the service center shall be able to perform the following task: measurement of inlet and outlet hydrogen sulfide concentrations and general maintenance.

B. Each system supplier shall be capable of furnishing system operational analyses consisting of field H2S measurements, airflow measurements, odor sampling and analysis, and operational troubleshooting.