SCOPE OF WORK

1. INTENT

The intent of this scope of work is to establish a requirements contract to clean, inspect, and certify chlorine storage tanks located at the Pierce Burch Water Treatment Plant (WTP) and the John F. Kubala Water Treatment Plant (WTP). The contract will also include emergency maintenance in the event of a chlorine leak associated with the tank(s) and appurtenances. The Contractor is to furnish all labor, materials, equipment, and incidentals necessary to accomplish the above-mentioned tasks.

The tank cleaning and inspection shall be performed on a schedule whereby one tank is serviced annually each year over a three-year period, keeping each of the tanks on a three-year rotation.

Tanks and Locations:

Pierce Burch Water Treatment Plant (WTP)

- Two (2) 25-Ton Bulk Chlorine Storage Tanks

John F. Kubala Water Treatment Plant (WTP)

- 1 (1) 25-Ton Bulk Chlorine Tanks

Classification: The work performed on a tank shall include but is not limited to cleaning, inspection, hydrostatic testing, thickness measurements, drying, pressurizing, and certifying the tanks compliant with all applicable rules and regulations. All work shall comply with the Chlorine Institute recommendations and guidelines. The inspection and certification services described herein are for use by the Arlington Water Utility.

Applicable Specifications

1. The Chlorine Institute Pamphlet 5; Bulk Storage of Liquid Chlorine, Latest Edition.
2. The Chlorine Institute Pamphlet 66; Recommended Practices for Handling Chlorine Tank Cars, Latest Edition.
3. The Chlorine Institute Pamphlet 95; Gaskets for Chlorine Service.

2. SCOPE OF WORK

1. The contractor is responsible for developing a written job safety plan and a comprehensive work plan prior to performing any work. A vessel entry procedure shall be developed and submitted in writing in accordance with the latest revision of OSHA requirements.
2. The contractor is responsible for providing all necessary safety equipment including but not limited to Self-Contained Breathing Apparatus (SCBA) equipment, tripod, harnesses, and gas monitoring equipment.
3. The contractor is responsible for providing all replacement parts associated with disassembly and reassembly of the manway (as noted below). Substitution of manufacturer is permissible with approval of the City as long as the design criteria is retained.
    a. (4) Angle Valves (Midland Part # A-713-ML)

b. (1) Safety Relief Valve (Midland Part # A-14227-ML)
c. (2) Liquid Excess Flow Check Valves (Midland Part # A-129)
d. (2) Vapor Excess Flow Check Valves (Midland Part # A-128)
e. (5) Lead-Based Valve Gaskets (Midland Part # 17-20-GY)
f. (1) Lead-Based Pressure Plate Man-way Gasket (Midland Part # 9000-01-PB)

4. The subject chlorine tank and associated piping will be emptied and place under vacuum by AWU personnel prior to contractor arrival.
5. Connect a water line to each liquid angle valve. The contractor is responsible for providing all equipment's and chemicals necessary to construct the waste gas absorption system.
6. The contractor shall begin the fill process. Interruption of the fill process will not be permitted as it will encourage localized corrosion of the tank interior. Contractor shall be present during the filling process.
7. When the tank is full of water and gas free, disconnect all water lines from the tank and install pressure test pump. Apply a hydrostatic pressure of 1-1/2 times the working pressure of the tank and hold the pressure for one (1) hour. The pressure drop should be negligible. If significant pressure drop is detected, the contractor shall be responsible for locating the source of the leak.
8. Upon successful completion of the hydrostatic test, remove man-way assembly and dewater the tank. Remove all scale, rust and debris by pressure washing the interior of tank. All of the hydrostatic test water and wash water will be disposed of in accordance with Federal, State, and Local laws.
9. Contractor shall have the tank inspected by a qualified pressure vessel inspector for pits, cracks, or corrosion.
10. The qualified pressure vessel inspector shall utilize a calibrated Ultrasonic Thickness measurement device, measure and record the thickness of the shell at not less than 114 and not more than 200 locations.
11. Remove and replace all angle valves, safety relief valve, and all (gas and liquid) excess flow valves. All education piping shall be thoroughly cleaned and inspected for cracks, pitting, and corrosion. Clean and inspect the pressure plate and the man-way gasket sealing surface for any pits, cuts, or corrosion.
12. Place newly rebuilt man-way assembly onto tank and torque bolts to four hundred (400) foot pounds.
13. The contractor shall conduct a pressure test with nitrogen and pressurize tank to one hundred (100) lbs. psig. and hold pressure for 24 hours.
14. After a successful pressure test, the contractor must achieve a dew point of minus forty (-40) degrees Fahrenheit or lower.
15. After final drying reassemble all removed piping. **Only 100% Teflon tape is approved to be used as a sealant on any chlorine piping system.**
16.

3. OTHER REQUIREMENTS

1. Contractor shall perform all work fully and timely and, in a manner, consistent with generally accepted industry standards and practices. Contractor shall comply with all applicable Federal, State, Local laws, rules, and regulations.
2. Contractor shall provide a full twelve (12) month warranty on all workmanship and materials (excluding parts provided by the City of Arlington). Should any chlorine leaks develop in the manway or piping dismantled while performing this work, Contractor shall immediately fix the leak at no additional cost to the City of Arlington. All cost incidentals to such additional work shall be borne by the Contractor.
3. Emergency Services, when requested, should be initiated within 24 hours of notification by the City. Contractor must provide a 24-hour number in which the emergency services can be requested.

4. OMISSIONS

It is the intent of this scope of work to describe a complete procedure to clean, test; certify a stationary bulk chlorine tank. It is not intended to supersede any industry standards or procedures established by the Chlorine Institute. Any steps that have been omitted from this specification that are clearly necessary for safe completion of these services shall be considered a requirement.

5. CONTRACTOR RESPONSIBILITIES

1. **Supervision:** The Contractor shall, during all periods of contract performance, provide competent supervision of employees to assure complete and satisfactory fulfillment of the work and the terms of this Contract. The Contractor or a capable, fully authorized representative must be immediately available during all work activities to receive any ad all special instructions from the Contract Manager or designee.
2. **Safety:** Industry approved safety standards and equipment shall be used at all times.
3. The Contractor must be thoroughly familiar with all prevailing safety measures pertinent to its operations. This shall include, but not necessarily be limited to Environmental Health Agency (EPA) regulations, Arlington City Ordinances, and Occupational Safety and Health Agency (OSHA) regulations. In addition, the Contractor shall be wholly responsible for instructing its employees in these safety measures and seeing that they are fully complied with in every respect.
4. **Hazards:** The Contractor shall at no time permit placing or use of equipment in such manner as to block traffic lanes or to create safety hazards. Contractor personnel shall provide appropriate warning devices when necessary and cooperate in the fullest in allowing through passage of other vehicles and personnel, even to the point of interrupting their own work, if necessary.
5. **Defective Work and Damages:** The Contractor shall be wholly responsible for and shall promptly correct or restore all defective work or damages to any/all City facilities caused by its activities. Restoration and correction shall be to the complete satisfaction of the City. This shall apply to any part of a building, its appurtenances, the adjacent grounds, or any other tangible damage incurred in the performance of the Contract. Failure by the Contractor to proceed promptly with corrective actions may be cause for cancellation of this Contract with amount(s) necessary to correct defective work and/or damage being withheld from payments due or to become due to the Contractor.