



Agenda Commentary

Item Title/ Subject: Agreements with PEC for Engineering at Clinton Lake Treatment Facility

Staff Source: City Manager, Steve Hewitt

Date: Feb 28, 2014

Background/Subject Information:

As you know, we settled the litigation regarding the chemical leak at Clinton Lake Water Facility. ODEQ now requires an Engineering Report and Plan to be submitted under Code for repairs to the Chemical Room.

See information and contract from PEC.

Recommendation:

Staff recommends.

Severn Trent has informed us that we can make treated water in an emergency situation only; this Report and Plan by an engineer is required from ODEQ.

Price/Cost: \$30,929.00 (paid by Insurance Settlement Proceeds)

February 27, 2013

City of Clinton
415 Gary Blvd.
Clinton, OK 73601



Attention: Mr. Steve Hewitt, City Manager

Reference: Clinton Water Treatment Plant Chlorine Gas Room Improvements

Dear Mr. Hewitt,

The Clinton Water Treatment Plant chlorine gas room experienced a recent chlorine gas leak, which caused major damage to the facility. Therefore, it is required that the chlorine gas room be improved to meet current Oklahoma Department of Environmental Quality (ODEQ), regulations. Due to the persistent drought, and lack of water in Clinton Lake, the water treatment plant has yet to be brought online since the leak.

Professional Engineering Consultants, P.A. (PEC) visited the water treatment plant and toured the chlorine gas room on January 27, 2014. PEC met with Stephen Jones, City of Clinton Public Works Director. From visual inspection, the room does not meet the majority of the regulations as stated in OAC 252:626. The following is a discussion outlining the deficiencies of the chlorine gas room, per regulation.

252:626-11-4 (a) (1): Housing: Enclose chlorine gas feed and storage and separate them from other operating areas. The chlorine room must:

- (A) Have a shatter resistant, clear glass inspection window installed in an exterior door or interior wall to permit the chlorinator to be viewed without entering the room. **The existing doors do have clear glass inspection windows; however, these windows do not allow for viewing of the chlorinator without entering the room. Some of these viewing windows are in doors that are not supposed to be there.**
- (B) Be constructed so that all openings between the chlorine room and the remainder of the plant are sealed. **The chlorine room is not sealed off from the rest of the plant. There are wall penetrations for piping between the chlorine gas room and other areas of the plant. The doors are not fully sealed. There should not be any interior doors.**
- (C) Be provided with doors equipped with panic hardware and opening only to the building exterior. **There are doors opening to the interior of the building.**
- (D) Be on ground floor with easy access for handling cylinders from a ramp or dock at floor level. **The room is on the ground floor.**
- (E) Provide a gas-tight room to separate gas chlorination equipment, chlorine cylinders and ozone generation equipment from other parts of the building, if the building is used for other purposes. Do not connect floor drains from the chlorine room to floor drains from other rooms. Doors to this room shall only open to the outside of the building, with panic hardware, at ground level and allow easy access to all equipment. One (1) ton chlorine cylinders shall have separate storage and feed areas. All doors and emergency equipment shall be compatible with chlorine. **The gas chlorination equipment and chlorine cylinders are not held in a gas-tight room. It is unknown whether the floor drains connect to drains from other rooms. Exterior doors are not at ground level, and there are doors which open to the interior of the building. One (1) ton chlorine cylinders do not have separate storage and feed areas.**

252:626-11-4 (a) (2): Ventilation

- (A) Provide each room with a ventilating fan with the capacity to provide 1 complete air exchange per minute. **The current air handling system does not appear to provide one complete air exchange per minute, based on conversations with plant operations.**
- (B) Locate air inlets near the ceiling and point of discharge near the floor. Locate the point of discharge to avoid contaminating air inlets to any rooms or structures. **The air inlets and discharge are not located properly.**
- (C) Locate light switches for fans and lights outside of each room, at the entrance. Provide a labeled signal light indicating fan operation at each entrance where the fan can be controlled from more than one point. **The light switches are located within the room. There is no labeled signal light indicating fan operation.**

252:626-11-4 (a) (3): Heat

- (A) Provide the ability to heat the room to 60 degrees F and protect from excessive heat. Keep cylinders at room temperature. **The room does not have operational climate control capabilities, and cannot heat the room to 60 degrees F.**

252:626-11-4 (a) (4): Storage of chlorine cylinders: Full and empty cylinders of chlorine gas must be:

- (A) Isolated from operating areas. **Storage is not isolated from operating areas.**
- (B) Restrained in position to prevent upset. The cylinders are
- (C) Stored in rooms separate from ammonia storage. **The cylinders are stored separate from ammonia.**
- (D) Stored in areas not in direct sunlight or exposed to excessive heat. **The cylinders are not stored in direct sunlight or exposed to excessive heat.**
- (E) A minimum of one (1) ton chlorine container, if more than one hundred fifty pounds of chlorine per day is needed

252:626-11-4 (a) (5): Scales:

- (A) Provide corrosion-resistant accurate scales for weighing chlorine cylinders. Provide at least a platform scale. Indicating and recording scales are required. **The room requires new scales, as the existing ones are corroded.**

252:626-11-4 (a) (6): Chlorine gas line:

- (A) Do not allow chlorinator feed lines to carry chlorine gas beyond the chlorinator room, unless gas is fed under vacuum. Lines must be extra heavy weight pipes, be resistant to corrosion, and slope upward from the cylinder to the chlorinator. **The existing lines operate under vacuum. The pipe material and slope is currently unknown.**

252:626-11-4 (a) (7): Water supply

- (A) Provide an ample supply of water to operate the chlorinator. Back-up any booster pumps, according to back-up power requirements.

252:626-11-4 (a) (8): Handling equipment: For cylinders up to one hundred fifty pounds, provide securing restraints and a hand truck designed for the cylinders. For one (1) ton cylinders, provide:

- (A) A hoist with 4,000 lbs capacity. **The existing hoist has a capacity of 2 tons.**
- (B) Cylinder lifting bar

- (C) Monorail or hoist with sufficient lifting height to pass one cylinder over another. **The system has a bent beam, and needs to be rehabilitated or replaced.**
- (D) Cylinder trunnions to allow exchanging the cylinders for proper connection

252:626-11-4 (a) (9): Manifolds

- (A) Gaseous chlorine cylinders may be connected to a manifold, if all cylinders are maintained at the same temperature or the system is designed for gas transfer from a warm container to a cool container. Do not connect liquid chlorine cylinders to a manifold.

252:626-11-4 (a) (10): Leak detection

- (A) Provide an emergency response plan for chlorine leaks. Provide a bottle of 56% ammonium hydroxide solution for detecting chlorine leaks. Where one ton containers are used, provide a leak repair kit approved by the Chlorine Institute and include caustic soda solution reaction tanks to absorb leaks. At large chlorination installations, provide automatic gas detection and related alarm equipment. Air pollution control regulations may require additional air scrubbing equipment be installed. **It is unknown whether the current room has leak detection in place.**

These deficiencies will have to be resolved prior to operating the water treatment plant. Please feel free to call me at 918-664-5400 if you have any questions or concerns.

Sincerely,



Ethan J. L. Edwards, P.E.
Principal



February 27, 2014

City of Clinton
415 Gary Blvd
Clinton, OK 73601

Attention: Mr. Steve Hewitt, City Manager

Reference: Clinton Water Treatment Plant Chlorine Gas Rehabilitation
PEC Project No. 434-13K17-002-6994

Dear Mr. Hewitt:

Professional Engineering Consultants, P.A. (PEC), hereafter called the ENGINEER, will assist the Clinton Public Works Authority (CPWA), hereafter called the OWNER, in improvements to the Clinton Water Treatment Plant chlorine gas room, hereinafter called the PROJECT. The PROJECT will consist of an evaluation of two (2) chlorine gas room improvement options and the development of an approvable Engineering Report.

A. PROJECT SCOPE:

The following is a description of the individual tasks to be completed for this PROJECT:

ENGINEERING REPORT

- One (1) kickoff meeting with OWNER and ENGINEER.
- Develop recommendations regarding improvements to the Water Treatment Plant's chlorine gas storage.
- Compare a new chlorine gas storage facility versus rehabilitation of the existing chlorine gas storage and feed rooms, and prepare cost opinions for each option.
- Development of a chlorine gas storage facility layout for inclusion in the Engineering Report.
- Development and submittal of an approvable Oklahoma Department of Environmental Quality Engineering Report in accordance with OAC 252:626-3-6 dated 07/01/2012, sealed and signed by a Professional Engineer registered in the State of Oklahoma.
- Attend a maximum of one (1) onsite City of Clinton Council Meetings, as necessary.
- Attend a maximum of one (1) onsite meetings at the Department of Environmental Quality to discuss the Engineering Report submittal.

EXCLUSIONS

- Employee notification, personnel protective equipment, hazard assessment, training program, and respiratory protection program as described under Occupational Safety and Health Administration 29 CFR Part 1910.

- Notification requirements as described under Environmental Protection Agency CFR Part 370.
- Documentation and reporting requirements as described under Environmental Protection Agency 40 CFR Part 302, 355 and Part 372.
- Notification requirements to the State Emergency Response Commission and Local Emergency Response Commission as described under Environmental Protection Agency 40 CFR Part 355.
- Coordinating design with City of Clinton First Responders.
- Review and design of facilities security measures.
- Vulnerability assessment as required under the Bioterrorism Act of 2002.
- Surveying services
- Geotechnical services
- Preliminary and final design, plans, specifications
- Bidding and construction services

B. PAYMENT PROVISIONS

PEC proposes to perform the Scope of Services described above on the basis of a lump sum amount of \$30,929.00.

C. Responsibility of CLIENT

1. To furnish to PEC for their use all prior pertinent data developed including applications, reports, design calculations, drawings and correspondence with State and Federal agencies.
2. To promptly review all preliminary submittals from PEC and to transmit any suggested revisions, modifications or changes to be made.
3. To pay PEC for services in accordance with the requirements of this Agreement.

D. TIME OF PERFORMANCE

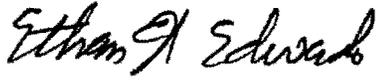
PEC proposes to begin work on the PROJECT within five (5) business days following receipt of an executed copy of this agreement and shall complete the PROJECT within forty-five (45) business days, exclusive of ODEQ approval of the Engineering Report.

This letter and the "Standard Conditions" attached hereto comprise the entire agreement between the CLIENT and PEC. They may be altered only by written supplemental agreement agreed to by both parties. Furthermore, this agreement may be canceled by CLIENT, for any reason, by providing PEC with thirty (30) day prior written notice.

Thank you for contacting us to provide professional services on the subject PROJECT. Should you have questions or need additional information, please do not hesitate to call. Return receipt of an executed copy of this letter will serve as our contract and notice to proceed with the work.

Very truly yours,

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.



Ethan J.L. Edwards, P.E.
Tulsa Office Manager/Principal

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

By: Ethan J.L. Edwards
Ethan J.L. Edwards, P.E.

Date: 2/27/14

City of Clinton, Oklahoma

By: _____

Title: _____

Date: _____

ATTEST:

By: _____