



## Event# 32914-13195 TCIX Generator Maintenance

### LOCATIONS

Turney Center Industrial Complex (Main)  
1499 R.W. Moore Memorial Highway  
Only, TN 37140

Contact: David Myatt - Facility Manager 3  
[David.L.Myatt@tn.gov](mailto:David.L.Myatt@tn.gov)  
931-729-7977

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Turney Center Industrial Complex (Annex)  
245 Carroll Road  
Clifton, TN 38425

Contact: Terry Dickey – Facilities Manager 2  
[Terry.W.Dickey@tn.gov](mailto:Terry.W.Dickey@tn.gov)  
931-676-2985

### GENERAL SCOPE OF CONTRACT

This solicitation is for TN Dept of Correction to establish a 5 Year Agency Term Contract for generator inspection, maintenance and repair for Turney Center Industrial Complex (TCIX). Contractor shall provide preventive maintenance, service, repairs, and emergency service to equipment listed herein. The omission of detailed specifications does not limit the quality of service rendered and only the best commercial practices are acceptable. All repairs, maintenance testing and inspections must be performed in accordance with recommended procedures of the manufacturer. Respondents are strongly encouraged to make a site visit. The State of Tennessee is not responsible for errors and/or omissions in Respondents' pricing due to not having made a site visit.

### DEFINITIONS

"**Regular time**"- refers to those hours from 7:00 am to 3:30 pm Central Time, Monday through Friday and does not include any day declared to be a holiday by the State of Tennessee.

"**Premium time**"- refers to those on-site hours after 3:30 pm Central Time and prior to 7:00 am Central Time Monday through Friday and all Saturday, Sunday, and holidays as declared by the State of Tennessee.

"**Facility Manager(s)**" – refers to either the Facility Manager or their designee.

## **CONTRACTOR QUALIFICATIONS**

Contractors shall have at least five (5) years' experience in servicing equipment as listed.

## **INSTRUCTIONS FOR BID PREPARATION**

### **1. Trip Charges**

Trip charges shall be limited to service calls outside the scope of annual and quarterly inspections and shall include all travel costs and associated expenses per round trip. Return trips due to incomplete work shall not be subject to a trip charge. A trip charge is not allowable for annual or quarterly inspections.

### **2. Service Charges**

Annual and quarterly inspections shall be paid per contracted costs. Preapproved and emergency repairs shall be paid per contracted costs for time, material, and trip charges. Services performed during Regular Time shall be charged at regular hourly rates. Services performed during Premium Time shall be charged at premium hourly rates.

## **SERVICES AND EQUIPMENT**

1. The Contractor shall continuously monitor and act on service call requests including dispatching service technicians, seven (7) days a week and twenty-four (24) hours a day. An unattended answering machine or voice mail system shall not be acceptable.
2. The Contractor shall provide all materials, equipment, and tools to test, maintain, repair, and modify all the equipment and systems listed in the specifications to ensure that they are always in operating condition. All parts, materials, supplies and equipment may be billed at Contractor's cost, minus any applicable sales or use tax pursuant to Tennessee Code Annotated, Section 67-6-209, plus fifteen percent (+15%)
3. All parts shall be OEM (Original Equipment Manufacturer) parts unless approved by the Facility Manager. Contractor shall attach a copy of the parts invoice to the service invoice. If requested, Contractor shall provide additional copies.

## **REPORTING REQUIREMENTS**

1. All work shall be approved in writing by the Facility Manager prior to starting any repair, test, or modification.
2. Contractor shall furnish a written report to the Facility Manager upon conclusion of each visit.
3. All visits by service technicians shall be logged on site as to date and time (in/out) by Facility Manager, facility security personnel, and/or authorized representative. Service technicians shall personally sign-in and sign-out to verify their presence and length of stay at the facility.

## **HANDLING OF MATERIALS**

The removal of all material, including waste and excess, used within the scope of the contract is the total responsibility of the Contractor. All use, removal and disposal must be in accordance with all Environmental Protection Agency Regulations.

## **SERVICE REQUEST PROCEDURE**

1. The Contractor shall not perform any repair service without a written request from the Facility Manager.
2. Based on hourly rates, parts and trip charges, the Contractor shall submit a maximum not-to-exceed cost to the Facility Manager. No work shall begin until written approval from the Facility Manager is received. No increases to the maximum not-to-exceed cost shall be allowed unless approved in writing by the Facility Manager.
3. The Facility Manager shall submit to the Contractor, a written approval for work to be performed. Transmittal shall be by mail, fax, or email.

## **RESPONSE TIME**

1. The Contractor shall provide emergency service 24 hours/day, 7 days/week. An emergency response time of 4 hour(s) is required during and after normal working hours.
2. Non-Emergency services shall be required within one business day (I.E., 24 Hours upon Notification).

## **INVOICE REQUIREMENTS**

1. A service ticket/invoice shall be left with the Facility Manager after each service visit. The service ticket shall show man hours (time in – time out) and a list of all parts used. This service ticket shall be required backup documentation for all payments.
2. The regular invoice shall be submitted to the Facility Manager, listing work performed, labor costs, trip costs and costs for parts.
3. Payment is dependent upon verification of time for the service rendered plus trip costs plus the cost of parts. All required approvals from the Facility Manager must be attached to each invoice.

## **PREVENTATIVE MAINTENANCE SCHEDULE**

The services in this section shall be performed for all generator units beginning upon award of this contract.

## **EMERGENCY AND NON-EMERGENCY SERVICES**

1. The Contractor shall provide for Non-Emergency and Emergency service twenty-four (24) hours per day, seven (7) days per week. The Contractor's response time shall commence upon notification and as follows: non-Emergency services shall be required within one business day (I.E., 24 Hours upon Notification). Emergency service shall be required within a four (4) hour response time (I.E., 4 Hours upon Notification).
2. Trip charges are limited to a single charge per round trip and per given work order. Return trips due to incomplete work and/or services are limited to a single trip charge. A trip charge is not allowed for the annual inspection which should be considered in the bid price for same. Hourly rate for technician shall not begin until the technician has signed-in at the agency.

## **EQUIPMENT LIST**

### A. TCIX Main

1. Main: Caterpillar model 3516
2. Wastewater Treatment Plant: Kohler model 300RE0ZV
3. Radio Room: Cummins model C20N6HC-A065D231

### B. TCIX Annex

1. Gen 1: Kohler model 80R02J71
2. Gen 2: Generac model 15050410200
3. Gen 3: Generac model 0058871
4. Gen 4: Caterpillar model SR4

## **Annual Services: (This shall serve as the fall quarterly inspection)**

The Contractor shall provide the following services annually:

### **Before starting the engine**

- A. Visual inspection - check the engine, radiator and generator for debris, foreign objects, loose or broken fittings, guards, and components.
- B. Cooling System – check for leaks, add coolant conditioner if required.
- C. Fuel System – Drain water and sediment from tank, Change fuel filters.
- D. Air Cleaner Element – Inspect; clean or replace.
- E. Governor- Check and maintain oil level.
- F. Engine Crankcase- Check oil level, maintain oil level between the add and full marks on the engine stopped side of the dipstick.
- G. Engine Crankcase Breather – Clean

- H. Valve lash- Check and adjust according to service manual.
- I. Linkages – Check and adjust all linkages if necessary. Lubricate all linkage fittings.
- J. Alarms and shutdown devices – check; test for proper operation.
- K. Batteries – Check electrolyte level, clean terminals, and connections.
- L. Engine – Wipe down; clean as needed.
- M. Generator – Lubricate bearings, vacuum clean and check wiring of the regulator, exciter, and stator. Check generator windings with me megohmmeter and record readings for reference.
- N. Check operation of space heaters.

**Note:** Refer to the generator service manual for information relating to use of the megohmmeter and low resistance readings.

#### **With Engine Running**

- A. Start the engine and check all gauges, oil pressure, fuel pressure, RPM (Frequency), generated voltage and engine jacket water temperature, for correct readings.
- B. Engine Crankcase – Check the oil level, maintain the oil level between the add and full marks on the engine running side of the dipstick.
- C. Radiator louvers – Check for proper operation.
- D. Leaks and noises – Check for leaks and unusual noises.
- E. Load Test – Load the engine to minimum of 30% of rated load. Operate at this level for minimum of 1.5 hours run time.
- F. Gauge Readings – After one hour of running record the readings of all gauges: oil pressure, fuel pressure, oil level, RPM (Frequency), generated voltage, service meters, engine jacket water temperature, exhaust temperature and manifold vacuum.

#### **After Stopping Engine**

- A. Adjust – Make any adjustments to the engine and generator set as necessary.
- B. Engine Crankcase – Change oil; take sample for analysis, change filters, cut old filter open and inspect for foreign material.
- C. Fuel level – Record the fuel tank level.
- D. Battery charge – Record the voltage.
- E. Automatic switches – Check that all switches are in proper position for automatic start.

#### **1. Fuel System**

- A. Change fuel filters.
- B. General Inspection of all components
- C. Check fuel pressure at cylinder head.
- D. Check fuel level in main day tanks
- E. Pump off water and sediment from main fuel tank.
- F. Drain water and sediment from day tank.
- G. Check operation of day tank.

- H. Conduct fuel flashpoint test and add fuel sufficient stabilizers, biocides and polish fuel based on test results.
- I. Add sufficient fuel additives to inhibit bacterial growth and to absorb condensate water in main.
- J. Perform tank and line tightness tests.

## **2. Lubricating System**

- A. Change oil in engine.
- B. Check and record engine oil pressure.
- C. Check engine for oil leaks.
- D. Change oil filter/filter elements.
- E. Leave customer make-up oil.

## **3. Cooling System**

- A. Check all cooling system hoses.
- B. Check coolant level (add or change as needed).
- C. Check freeze protection (add, if needed.)
- D. Check belts (change, if needed).
- E. Check operation of water jacket heater.
- F. Check engine water pump.
- G. Check and clean all louvers
- H. Clean external core of radiator.
- I. Add rust inhibitor to cooling system.
- J. Check for adequate fresh air to engine.
- K. Check condition of fan hub.
- L. Check and record operating temperature, verifying that.
- M. Operating temperature is in the correct range.

## **4. Exhaust System**

- A. Check condition of exhaust system
- B. Check for exhaust leaks
- C. Check condition of turbocharger

## **5. Air intake system**

- A. Check air inlet piping.
- B. Check condition of air filter element or Oil bath.
- C. Check air box pressure.
- D. Check crankcase pressure.
- E. Check exhausts restriction.
- F. Clean crankcase breather pads.
- G. Check all air system piping.

## **6. Control System**

- A. Check operation of all gauges and meters
- B. Check operation of all controls
- C. Check shutdown systems.
- D. Clean control cabinets.

## **7. Engine electrical starting system.**

- A. Clean batteries and cables
- B. Add distilled water to maintain proper electrolyte level.
- C. Check operation of float charger.
- D. Check and record battery voltage.
- E. Check condition of batteries

## **8. Generator**

- A. Check main, intermediate, line (source), and generator side circuit breakers for operation.
- B. Check transfer switch for proper condition and operation.
- C. Blow out with low pressure air.
- D. Check cables from generator to transfer switch.
- E. Clean interior of transfer switch enclosure.
- F. Check condition of bearing.

## **9. General**

- A. Check for any unusual condition of vibration, deterioration leakage, high surface temperature or noise.
- B. Run generator under emergency condition, if possible, if not, run generator under test conditions.
- C. Record all readings and present to Facility Manager, or designee.
- D. Leave control panel in automatic mode.
- E. Notify owner of additional service/repair work required.

## **Quarterly Services (Three per year)**

The Contractor shall provide the following services quarterly:

### **Before starting the engine**

- A. Visual inspection - check the engine, radiator and generator for debris, foreign objects, loose or broken fittings, guards, and components.
- B. Cooling System – check for leaks, add coolant conditioner if required.
- C. Fuel System – Drain water and sediment from tank, Change fuel filters.
- D. Air Cleaner Element – Inspect; clean or replace.
- E. Governor- Check and maintain oil level.

- F. Engine Crankcase- Check oil level, maintain oil level between the add and full marks on the engine stopped side of the dipstick.
- G. Engine Crankcase Breather – Clean
- H. Linkages – Check and adjust all linkages if necessary. Lubricate all linkage fittings.
- I. Alarms and shutdown devices – check; test for proper operation.
- J. Batteries – Check electrolyte level, clean terminals, and connections.

**Note:** Refer to the generator service manual for information relating to use of the megohmmeter and low resistance readings.

### **With Engine Running**

- A. Start the engine and check all gauges, oil pressure, fuel pressure, RPM (Frequency), generated voltage and engine jacket water temperature, for correct readings.
- B. Engine Crankcase – Check the oil level, maintain the oil level between the add and full marks on the engine running side of the dipstick. .
- C. Radiator louvers – Check for proper operation.
- D. Leaks and noises – Check for leaks and unusual noises.
- E. Gauge Readings – After one hour of running record the readings of all gauges: Oil Pressure, Fuel Pressure, Oil level, RPM (Frequency), Generated voltage, service meters, engine jacket water temperature, exhaust temperature and manifold vacuum.
- F. Perform 1.5-hour load test.

### **After Stopping Engine**

- A. Adjust – Make any adjustments to the engine and generator set as necessary.
- B. Fuel level – Record the fuel tank level.
- C. Battery charge – Record the voltage.
- D. Automatic switches – Check that all switches are in proper position for automatic start.

### **1. Fuel System**

- A. General inspection of all components.
- B. Check fuel pressure at cylinder head.
- C. Check fuel level in main day tanks.
- D. Drain water and sediment from day tank.

### **2. Lubricating System**

- A. Check oil level-Fill to proper level.
- B. Check and record engine oil pressure.
- C. Check engine for oil leaks.

### **3. Cooling System**

- A. Check all cooling system hoses.
- B. Check coolant level.
- C. Check freeze protection (Add, if needed)
- D. Check condition of belts.
- E. Check operation of water jacket heater.

#### **4. Exhaust System**

- A. Check condition of exhaust system.
- B. Check for exhaust leaks.

#### **5. Air intake system**

- A. Check air inlet piping.
- B. Check condition of air filter element or Oil bath.

#### **6. Control System**

- A. Check operation of all gauges and meters.
- B. Check operation of all controls.
- C. Check shutdown systems.

#### **7. Engine electrical starting system.**

- A. Clean batteries and cables.
- B. Add distilled water to maintain proper electrolyte level.
- C. Check operation of float charger.
- D. Check and record battery voltage.
- E. Check condition of batteries.

#### **8. Generator**

- A. Check main circuit breaker for operation.
- B. Check transfer switch for proper condition and operation.

#### **9. General**

- A. Check for any unusual condition of vibration, deterioration leakage, high surface temperature or noise.
- B. Run generator under emergency conditions, if possible, if not, run generator under test conditions.
- C. Record all readings and present to Facility Manager, or designee.
- D. Leave control panel in automatic mode.
- E. Notify owner of additional service/repair work required.