

Specifications: ITB Event # 32943-40101-11379
Northeast Correctional Complex (NECX), Generator Maintenance

PURPOSE:

This is an Invitation to Bid (ITB) for Tennessee Department of Correction, Northeast Correctional Complex (NECX), Site 1, 5249 Highway 67 West, Mountain City, TN 37683 and Northeast Correctional Complex Carter County Annex (CCX), Site 2, 188 Old Railroad Grade Road, Roan Mountain TN 37687. The purpose of this document is to detail the requirements and specifications associated with the the provision of preventative maintenance, service, and repairs of emergency generators located at the facility. All repairs and preventive maintenance must be performed within manufacturer's specifications.

Location:

Two (2) generators located at Northeast Correctional Complex Site 1, 5249 Hwy 67 West, Mountain City, Tennessee 37683

One (1) generator located at Northeast Correctional Complex Site 2, 188 Old Railroad Grade Road, Roan Mountain, Tennessee, 37687

Equipment List: Site 1

- One each Cummins, Model 1250kta, Serial # l890289292 480 volt, 3 phase 1250 kW, 1800 rpm
- One each Cummins Model #dfce-5628942, Serial # 0#h030535011, 480/277 volt, 3 phase 400 kW 1800 rpm

Equipment List: Site 2

- One each Nixon Electric Plant, Model 7163-7305, 480 volt, 3 phase 565 kW, 1800 rpm Detroit diesel 16v-71t
- Switchgear cabinet and components to include but not limited to indicator lamps, meters, relays, etc.

Semi Annual Services – Diesel

1. Fuel Systems:
 - A. Drain water and sediment from fuel filter canisters and filter elements
 - B. Ensure proper operation of transfer pump
 - C. Ensure proper operation of solenoid valve
 - D. Ensure proper operation of fuel gauge and vent
 - E. Ensure all fuel line fittings are tight
 - F. Check and adjust carburetor choke where applicable
 - G. Drain water separators where applicable
 - H. Perform an overall inspection of all fuel components and ensure no leaks are present.

2. Lubricating System:
 - A. Change oil and filters
 - B. Check and record engine oil pressure
 - C. Check engine for oil leaks.

3. Cooling System:
 - A. Check all cooling system hoses and connectors for proper tightness
 - B. Check and fill coolant to proper level
 - C. Check freeze protection point and ensure it is 0 and below – add antifreeze if required
 - D. Check condition of fan belts – replace as needed when showing signs of wear or dry-rot
 - E. Check and record operating temperatures of the fan shaft and shaft pillow block bearings if applicable

4. Exhaust System:
 - A. Check for exhaust leaks
 - B. Check and repair insulation
 - C. Drain condensate trap if applicable.

5. Air Intake System:
 - A. Check air inlet piping for leaks
 - B. Check condition of air filter element
 - C. Replace air filter as needed.

- D. Drain airbox
6. Engine Electrical Starting System:
- A. Clean battery terminals and cables and ensure no corrosion is present
 - B. Service engine batteries as required by manufacturer add distilled water to maintain proper electrolyte level
 - C. Check and record cold cranking amps of each battery
 - D. Check operation of charger and record charge rate
 - E. Check and record battery specific gravity and charge state
 - F. Check and record battery voltage of each battery
 - G. Check and tighten all dc electrical connections
 - H. Check and tighten all connections between batteries and ignition
 - I. Check and tighten all connections for the alternator
 - J. Perform an indicator lamp test on the control cabinet located in the generator compartment and replace lamps as necessary
7. Engine and Mounting:
- A. Visually inspect, lubricate, and tighten all engine mounts as required in the engine manufacturer's maintenance manual
 - B. Visually inspect, lubricate, and check governor operation
 - C. Check for unusual conditions i.e. Vibration, deterioration, leakage, high surface temperature, and/or excessive noise
8. Control System:
- A. Check operation of all gauges and meters
 - B. Check operation of all controls
 - C. Check shutdown system
 - D. Verify proper operation of remote annunciator panel if applicable
9. Generator:
- A. Check main circuit breaker for operation (if applicable)
 - B. Check transfer switch for proper condition and operation
 - C. Clean and tighten all connections as needed
10. Switchgear Components:

- A. Inspect cables, clean and tighten all connections as needed.

11. AC Electrical System:

- A. Clean and tighten all power cable connections
- B. Circuit breakers, fuses (do not break manufacturer's seals or internally inspect these devices): visually inspect, check, replace as necessary, clean and test
- C. Wire abrasions where subject to motion: visually inspect and check

12. General Requirements:

- A. Perform a facility load test for a minimum of 90 minutes not to include start up and shut down times to ensure generators are fully operational
- B. Ensure control panel is in the automatic mode when test is complete
- C. Provide a full report of the readings to the agency representative upon completion
- D. Notify agency of any additional needed repairs and provide a written quote to the facility manager within 5 business days
- E. Provide a written legible service ticket or electronic version to show all results of all required tasks
- F. Check battery charger operation
- G. Check and test all annunciator switches

Load Bank Test:

- A. In year one of the contract, provide a load bank, transformer, and necessary power cables of sufficient size and perform a resistive load bank test on each generator. Load bank testing shall be performed for a period of four (4) hours at one hundred percent (100%) of the generator's rated capacity.
- B. Provide a full report of the readings to the agency representative upon completion.

Service Guidelines:

- A. Emergency power supply system shall be maintained not less than the preventative maintenance schedule found in n.f.p.a. 110 1996 edition, table aa-6-3. 1(a) level 2 as a minimum guide for service expected.
- B. Service provider shall utilize and adhere to all current manufacturer service manuals and bulletins, the successful vendor must provide copies of all new

service bulletins and manual updates to the facility manager, Mr. Terry Henson.

Parts:

- A. Repair parts are to be OEM or equal and must be pre-approved by the facility manager.
- B. Contract holder must provide a written quote that includes manufacturer, part number, part description, retail price, Contractor price plus fifteen percent (15%) mark-up, and labor to install parts.
- C. Contract holder must provide a written statement as to why parts failed if requested by institution.

Work Times:

- A. Inspections and Routine Maintenance are to be performed between the hours of 7 am and 3 pm EST, Monday thru Friday except on State holidays.
- B. Emergency repairs must be requested by the state and pre-approved by the maintenance supervisor, Mr. Terry Henson. In the event of an emergency call out, contract holder must respond to the institution within four (4) hours.
- C. The Contractor must provide available office, shop, and cell phone numbers of personnel to contact for said services. An outside answering service and/or voice message system i.e. electronic answering devices are not acceptable to the state as a contact for emergency and/or non-emergency situations.
- D. Trip charges are limited to a single charge per round trip or per given purchase order unless given prior approval.
- E. The hourly rate for emergency and non-emergency service starts when the technician signs in at the maintenance building and stops when he/she signs out.
- F. Regular hours are 7am to 3pm EST Monday thru Friday excluding State holidays.
- G. Premium hours are 3:01pm to 6:59am Monday thru Friday EST, weekends, and State holidays.