



— WATER RESOURCE RECOVERY FACILITY —

**Request for Proposal (RFP)**

**For**

**“New Standby Generator for Quail Meadows 3 Lift Station”**

**Issued by:  
City of Indianola  
11870 Hoover St  
Indianola, IA 50125**

**Mailing Address:  
City of Indianola  
P.O. Box 299  
Indianola, IA 50125**

**Proposals must be submitted  
No later than 11:00 AM  
June 27, 2022**

**LATE PROPOSALS WILL BE REJECTED**

**BID OPENING WILL TAKE PLACE AT:  
CITY HALL  
110 N 1<sup>ST</sup> STREET  
INDIANOLA, IA 50125**

**For further information regarding this RFP  
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**Issued: June 3, 2022**

**SECTION 26 3213  
ENGINE GENERATORS**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. Equipment provided under this Specification Section shall be by a single supplier.
- B. Provide one (1) engine generator set for the Quail Meadows lift station.

**1.02 SECTION INCLUDES**

- A. Packaged engine generator system and associated components and accessories:
  - 1. Engine and engine accessory equipment.
  - 2. Alternator (generator).
  - 3. Generator set control system.
  - 4. Generator set enclosure.
- B. Packaged engine generator set.
- C. Exhaust silencer and fittings.
- D. Fuel tank.
- E. Battery and charger.

**1.03 REFERENCE STANDARDS**

- A. ASTM D975 - Standard Specification for Diesel Fuel Oils.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- C. NECA/EGSA 404 - Standard for Installing Generator Sets.
- D. NEMA MG 1 - Motors and Generators.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association.
- F. NFPA 30 - Flammable and Combustible Liquids Code.
- G. NFPA 37 - Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines.
- H. NFPA 70 - National Electrical Code.
- I. NFPA 110 - Standard for Emergency and Standby Power Systems.
- J. UL 1236 - Battery Chargers for Charging Engine-Starter Batteries.
- K. UL 2200 - Stationary Engine Generator Assemblies.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate compatibility of generator set to be installed with work provided under other sections or by others.
  - 2. Coordinate arrangement of equipment with the dimensions and clearance requirements of the actual equipment to be installed.
  - 3. Coordinate the work to provide electrical circuits suitable for the power requirements of the actual auxiliary equipment and accessories to be installed.
  - 4. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Preinstallation Meeting: Convene one week before starting work of this section; require attendance of all affected installers.

## 1.05 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product, including ratings, configurations, dimensions, finishes, weights, service condition requirements, and installed features. Include alternator starting capabilities, engine fuel consumption rates, and cooling, combustion air, and exhaust requirements.
  - 1. Include generator set sound level test data.
- B. Shop Drawings: Include dimensioned plan views and sections indicating locations of system components, required clearances, and field connection locations. Include system interconnection schematic diagrams showing all factory and field connections.
- C. Fuel Storage Tank Calculations: Indicate maximum running time for generator set configuration provided.
- D. Specimen Warranty: Submit sample of manufacturer's warranty.
- E. Manufacturer's factory emissions certification.
- F. Manufacturer's certification that products meet or exceed specified requirements.
- G. Provide NFPA 110 required documentation from manufacturer where requested by authorities having jurisdiction, including but not limited to:
  - 1. Certified prototype tests.
  - 2. Torsional vibration compatibility certification.
  - 3. NFPA 110 compliance certification.
  - 4. Certified rated load test at rated power factor.
- H. Manufacturer's detailed field testing procedures.
- I. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
- J. Executed Warranty: Submit documentation of final executed warranty completed in Owner's name and registered with manufacturer.
- K. Maintenance contracts.
- L. Project Record Documents: Record actual locations of system components, installed circuiting arrangements and routing, and final equipment settings.
- M. Loading Performance Report: Provide a report listing the selected generator's calculated response to the loading sequence described in these Specifications. The report shall include statements indicating the generator and site conditions used, and the generator's response to each load step indicating starting and running real power and apparent power, running amps, individual step and maximum voltage and frequency dips. Include the electrical characteristics of each load modeled and any other pertinent data to demonstrate that the selected generator will perform satisfactorily and meet the Specifications.
- N. Manufacturer's Field Reports: Indicate procedures and findings.

## 1.06 QUALITY ASSURANCE

- A. Comply with the following:
  - 1. NFPA 70 (National Electrical Code).
  - 2. NFPA 110 (Standard for Emergency and Standby Power Systems); meet requirements for Level 1 system.
  - 3. NFPA 37 (Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines).
  - 4. NFPA 30 (Flammable and Combustible Liquids Code).
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

- C. Conform to requirements of NFPA 70 and NFPA 110.
- D. Products: Furnish products listed and classified by Underwriters Laboratories.

### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store generator sets in accordance with manufacturer's instructions and NECA/EGSA 404.
- B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- C. Handle carefully in accordance with manufacturer's instructions to avoid damage to generator set components, enclosure, and finish.
- D. Accept unit on site on skids. Inspect for damage.
- E. Protect equipment from dirt and moisture by securely wrapping in heavy plastic.

### **1.08 FIELD CONDITIONS**

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

### **1.09 MAINTENANCE MATERIALS**

- A. Furnish one set of tools required for preventative maintenance of the engine generator system. Package tools in adequately sized metal tool box.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Packaged Engine Generator Set - Acceptable Manufacturers:
  - 1. Caterpillar, Inc.: [www.cat.com](http://www.cat.com)
  - 2. Cummins Power Generation Inc: [www.cumminspower.com/#sle](http://www.cumminspower.com/#sle).
  - 3. MTU Onsite Energy: [www.mtu-solutions.com](http://www.mtu-solutions.com).
- B. Source Limitations: Furnish engine generator sets and associated components and accessories produced by a single manufacturer and obtained from a single supplier.
- C. Substitutions: Not Permitted.

### **2.02 PACKAGED ENGINE GENERATOR SYSTEM**

- A. Provide new engine generator system consisting of all required equipment, sensors, conduit, boxes, wiring, piping, supports, accessories, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. System Description:
  - 1. Application: Emergency/standby.
  - 2. Configuration: Single packaged engine generator set operated independently (not in parallel).
- D. Packaged Engine Generator Set:
  - 1. Type: Diesel (compression ignition).
  - 2. Power Rating:
    - a. As required by the manufacturer to power (1) 20 HP, 208V, three phase, VFD-controlled sewage pump with a base load of 5 kW of miscellaneous resistive load, within the specified voltage and frequency tolerances, but not less than 30 kW/37.5 kVA at 0.8 power factor, standby.
  - 3. Voltage:
    - a. 208Y/120 V, 3 phase, 60 Hz. The neutral shall not be bonded to ground at the generator.
  - 4. Main Line Circuit Breaker:
    - a. Type: Thermal magnetic.

- b. Trip Rating: 150 amps (to match the existing output conductor size).
- E. Generator Set General Requirements:
  - 1. Prototype tested in accordance with NFPA 110 for Level 1 systems.
  - 2. Factory-assembled, with components mounted on suitable base.
  - 3. List and label engine generator assembly as complying with UL 2200.
  - 4. Power Factor: Unless otherwise indicated, specified power ratings are at 0.8 power factor for three phase voltages and 1.0 power factor for single phase voltages.
  - 5. Provide suitable guards to protect personnel from accidental contact with rotating parts, hot piping, and other potential sources of injury.
  - 6. Main Line Circuit Breaker: Provide factory-installed line side connections with suitable lugs for load side connections.
- F. Service Conditions: Provide engine generator system and associated components suitable for operation under the service conditions at the installed location.
  - 1. Altitude: 1100 feet.
  - 2. Ambient Temperature: Between -20 and 104 degrees F.
- G. Starting and Load Acceptance Requirements:
  - 1. Cranking Method: Cycle cranking complying with NFPA 110 (15 second crank period, followed by 15 second rest period, with cranking limiter time-out after 3 cycles), unless otherwise required.
  - 2. Cranking Limiter Time-Out: If generator set fails to start after specified cranking period, indicate overcrank alarm condition and lock-out generator set from further cranking until manually reset.
  - 3. Start Time: Capable of starting and achieving conditions necessary for load acceptance within 10 seconds (NFPA 110, Type 10).
  - 4. Maximum Load Step: Supports 100 percent of rated load in one step.
- H. Exhaust Emissions Requirements:
  - 1. Comply with federal (EPA), state, and local regulations applicable at the time of commissioning; include factory emissions certification with submittals.
  - 2. Do not make modifications affecting generator set factory emissions certification without approval of manufacturer and Engineer. Where such modifications are made, provide field emissions testing as necessary for certification.
  - 3. The crank case shall not be vented within the generator enclosure.

### **2.03 LOADING SEQUENCE**

- A. Upon failure of normal utility power, the generator shall be required to pick up the electrical load of the system in one step.
- B. Maximum Allowable Voltage Dip: 20%.
- C. Maximum Allowable Frequency Dip: 5%.

### **2.04 ENGINE AND ENGINE ACCESSORY EQUIPMENT**

- A. Provide engine with adequate horsepower to achieve specified power output at rated speed, accounting for alternator efficiency and parasitic loads.
- B. Engine Fuel System - Diesel (Compression Ignition):
  - 1. Fuel Source: Diesel, ASTM D975 No. 2-D or approved cold weather diesel blends.
  - 2. Fuel Storage: Sub-base fuel tank.
  - 3. Engine Fuel Supply: Provide engine-driven, positive displacement fuel pump with replaceable fuel filter(s), water separator, check valve to secure prime, manual fuel priming pump, and relief-bypass valve. Provide fuel cooler where recommended by manufacturer.
  - 4. Engine Fuel Connections: Provide suitable, approved flexible fuel lines for coupling engine to fuel source.
  - 5. Sub-Base Fuel Tank:

- a. Provide sub-base mounted, double-wall fuel tank with secondary containment; UL listed and labeled as complying with NFPA 30 and UL 142.
  - b. Custom design for engine-generator set mounting and to match engine-generator set mounting rails.
  - c. General: all steel construction and MIG welded with a wire that meets or exceeds AWS ER70S-6 specification requirements; steel to conform to ASTM A1011 or A36; as a minimum, rails of 7-gauge formed steel with 7-gauge top, bottom and baffles; install minimum of 2 baffles.
  - d. Engine-generator set mounting: include support pads designed to receive vibration isolators.
  - e. Tank Capacity: Size for minimum of 24 hours of continuous engine generator operation at 100 percent rated load, but not larger than permissible by applicable codes.
  - f. Provide vertical channel supports at all generator load points.
  - g. Elevate bottom of tank to avoid trapping moisture between the tank and the concrete pad.
  - h. Paint: metal prep, prime with two coats of epoxy primer and finish with two coats of acrylic urethane enamel paint.
  - i. Rupture basin: double-wall construction for the purpose of leak detection and containment; double wall construction to include, but not limited to, all sides, conduit stub-up area and bottom; provide a space between the walls for a set of dry contacts for leak detection alarm.
  - j. Conduit stub-up area: build a conduit stub-up area into the tank to route electrical conduits to the generator connection area from below the tank when required.
  - k. Provide a 2" (50mm) exterior accessible fuel fill and 10-gallon (38 liter) spill containment with locking door integral to the enclosure, 75% full light, 95% full light, tank vent, rupture basin vent, emergency relief vent, mechanical gauge, drain, low level fuel alarm dry contacts, leak detection dry contacts and ports for supply fuel, return fuel and one spare connection.
    - 1) Install fuel supply and return piping connections to engine.
  - l. Accessories
    - 1) Normal vent cap: size to tank requirements
    - 2) Emergency vent cap: size to tank requirements
    - 3) Install normal vent cap and emergency vent cap per NFPA requirements.
    - 4) All venting concealed within the enclosure and extended through roof with weathertight roof thimble.
  - m. Fuel oil piping
    - 1) Materials: Black steel, standard weight, ASTM A53, Grade B, Schedule 40 with cast threaded fittings or Type L copper with brass fittings and 50/50 solder.
    - 2) Flexible connectors: Buna-N rubber with steel wire reinforcement compatible with Fuel Oil use.
- C. Engine Starting System:
- 1. System Type: Electric, with DC solenoid-activated starting motor(s).
  - 2. Battery(s):
    - a. Battery Type: Lead-acid.
    - b. Battery Capacity: Size according to manufacturer's recommendations for achieving starting and load acceptance requirements under worst case ambient temperature; capable of providing cranking through two complete periods of cranking limiter time-outs without recharging.
    - c. Provide battery rack, cables, and connectors suitable for the supplied battery(s); size battery cables according to manufacturer's recommendations for cable length to be installed.
  - 3. Battery-Charging Alternator: Engine-driven, with integral solid-state voltage regulation.
  - 4. Battery Charger:

- a. Provide dual rate battery charger with automatic float and equalize charging modes and minimum rating of 10 amps; suitable for maintaining the supplied battery(s) at full charge without manual intervention.
  - b. Capable of returning supplied battery(s) from fully discharged to fully charged condition within 24 hours, as required by NFPA 110 for Level 1 applications while carrying normal loads.
  - c. Recognized as complying with UL 1236.
  - d. Furnished with integral overcurrent protection; current limited to protect charger during engine cranking; reverse polarity protection.
  - e. Provide integral DC output ammeter and voltmeter with five percent accuracy.
  - f. Provide alarm output contacts as necessary for alarm indications.
5. Battery Heater: Provide thermostatically controlled battery heater to improve starting under cold ambient conditions.
- D. Engine Speed Control System (Governor):
- 1. Single Engine Generator Sets (Not Operated in Parallel): Provide electronic isochronous governor for controlling engine speed/alternator frequency.
  - 2. Frequency Regulation, Electronic Isochronous Governors: No change in frequency from no load to full load; plus/minus 0.25 percent at steady state.
- E. Engine Lubrication System:
- 1. System Type: Full pressure, with engine-driven, positive displacement lubrication oil pump, replaceable full-flow oil filter(s), and dip-stick for oil level indication. Provide oil cooler where recommended by manufacturer.
- F. Engine Cooling System:
- 1. System Type: Closed-loop, liquid-cooled, with unit-mounted radiator/fan and engine-driven coolant pump; suitable for providing adequate cooling while operating at full load under worst case ambient temperature.
  - 2. Fan Guard: Provide suitable guard to protect personnel from accidental contact with fan.
- G. Engine Air Intake and Exhaust System:
- 1. Air Intake Filtration: Provide engine-mounted, replaceable, dry element filter.
  - 2. Engine Exhaust Connection: Provide suitable, approved flexible connector for coupling engine to exhaust system.
  - 3. Exhaust Silencer: Provide critical grade or better exhaust silencer; select according to manufacturer's recommendations to meet sound performance requirements, where specified.
- H. Safety Devices: Engine shutdown on high water temperature, low oil pressure, overspeed, and engine overcrank. Limits as selected by manufacturer.
- I. Coolant Heater: Provide a heavy-duty, industrial engine-mounted, and thermostatically controlled heater. The heater shall operate between 100 degrees F and 120 degrees F. The heater shall be disconnected by an oil pressure switch or engine running contact whenever the engine starts.
- J. Radiator: Engine-mounted unit using glycol coolant, with blower type fan, sized to maintain safe engine temperature in ambient temperature of 110 degrees F. Radiator air flow restriction 0.5 inches of water maximum.
- K. Mounting: Provide unit with suitable vibration isolators and mount on structural steel base.

## **2.05 ALTERNATOR (GENERATOR)**

- A. Alternator: 4-pole, 1800 rpm (60 Hz output) revolving field, synchronous generator complying with NEMA MG 1; connected to engine with flexible coupling; voltage output configuration as indicated, with reconnectable leads for 3 phase alternators.
- B. Exciter:
  - 1. Exciter Type: Brushless; provide permanent magnet generator (PMG) excitation system; self-excited (shunt) systems are not permitted.

- 2. PMG Excitation Short-Circuit Current Support: Capable of sustaining 300 percent of rated output current for 10 seconds.
- 3. Voltage Regulation (with PMG excitation): Plus/minus 0.5 percent for any constant load from no load to full load.
- C. Temperature Rise: Comply with UL 2200.
- D. Insulation System: NEMA MG 1, Class H; suitable for alternator temperature rise.
- E. Enclosure: NEMA MG 1, drip-proof.
- F. Total Harmonic Distortion: Not greater than five percent.

## **2.06 GENERATOR SET CONTROL SYSTEM**

- A. Provide microprocessor-based control system for automatic control, monitoring, and protection of generator set. Include sensors, wiring, and connections necessary for functions/indications specified.
- B. Control Panel:
  - 1. Control Panel Mounting: Unit-mounted unless otherwise indicated; vibration isolated.
  - 2. Generator Set Control Functions:
    - a. Automatic Mode: Initiates generator set start/shutdown upon receiving corresponding signal from remote device (e.g. automatic transfer switch).
    - b. Manual Mode: Initiates generator set start/shutdown upon direction from operator.
    - c. Reset Mode: Clears all faults, allowing generator set restart after a shutdown.
    - d. Emergency Stop: Immediately shuts down generator set (without time delay) and prevents automatic restarting until manually reset.
    - e. Cycle Cranking: Programmable crank time, rest time, and number of cycles.
    - f. Time Delay: Programmable for shutdown (engine cooldown) and start (engine warmup).
    - g. Voltage Adjustment: Adjustable through range of plus/minus 5 percent.
  - 3. Generator Set Status Indications:
    - a. Voltage (Volts AC): Line-to-line, line-to-neutral for each phase.
    - b. Current (Amps): For each phase.
    - c. Frequency (Hz).
    - d. Real power (W/kW).
    - e. Reactive power (VAR/kVAR).
    - f. Apparent power (VA/kVA).
    - g. Power factor.
    - h. Duty Level: Actual load as percentage of rated power.
    - i. Engine speed (RPM).
    - j. Battery voltage (Volts DC).
    - k. Engine oil pressure.
    - l. Engine coolant temperature.
    - m. Engine run time.
    - n. Generator powering load (position signal from transfer switch).
  - 4. Generator Set Protection and Warning/Shutdown Indications:
    - a. Comply with NFPA 110; configurable for NFPA 110 Level 1 or Level 2, or NFPA 99 systems including but not limited to the following protections/indications:
      - 1) Overcrank (shutdown).
      - 2) Low coolant temperature (warning).
      - 3) High coolant temperature (warning).
      - 4) High coolant temperature (shutdown).
      - 5) Low oil pressure (shutdown).
      - 6) Overspeed (shutdown).
      - 7) Low fuel level (warning).
      - 8) Low coolant level (warning/shutdown).



- 9) Generator control not in automatic mode (warning).
- 10) High battery voltage (warning).
- 11) Low cranking voltage (warning).
- 12) Low battery voltage (warning).
- 13) Battery charger failure (warning).
- b. In addition to NFPA 110 requirements, provide the following protections/indications:
  - 1) High AC voltage (shutdown).
  - 2) Low AC voltage (shutdown).
  - 3) High frequency (shutdown).
  - 4) Low frequency (shutdown).
  - 5) Overcurrent (shutdown).
  - 6) Fuel tank leak (warning), where applicable.
- c. Provide contacts for local and remote common alarm.
- d. Provide lamp test function that illuminates all indicator lamps.
- 5. Other Control Panel Features:
  - a. Event log.
  - b. Communications Capability: Utilize Modbus TCP/IP communications protocol. Provide all accessories necessary for proper interface.
- C. Emergency Stop: Provide approved red, mushroom style emergency stop button.

## **2.07 GENERATOR SET ENCLOSURE**

- A. Enclosure Type: Sound attenuating, weather protective.
- B. Enclosure Material: Steel or aluminum.
- C. Hardware Material: Stainless steel.
- D. Color: Manufacturer's standard.
- E. Access Doors: Lockable, with all locks keyed alike.
- F. Openings: Designed to prevent bird/rodent entry.
- G. External Drains: Extend oil and coolant drain lines to exterior of enclosure for maintenance service.
- H. Sound Attenuating Enclosures: Line enclosure with non-hydroscopic, self-extinguishing sound-attenuating material.
- I. Exhaust Silencer: Locate inside the enclosure in the main engine compartment. Insulate silencer to minimize heat dissipation as necessary for operation at rated load under worst case ambient temperature.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that the ratings and configurations of generator sets and auxiliary equipment are consistent with the indicated requirements.
- C. Verify that rough-ins for field connections are in the proper locations.
- D. Verify that mounting surfaces are ready to receive equipment.
- E. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 INSTALLATION**

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Install generator sets and associated accessories in accordance with NECA/EGSA 404.

- D. Arrange equipment to provide minimum clearances and required maintenance access.
- E. Use manufacturer's recommended oil and coolant, suitable for the worst case ambient temperatures.

### **3.03 FIELD QUALITY CONTROL**

- A. Provide services of a manufacturer's authorized representative to prepare and start systems and perform inspection and testing. Include manufacturer's detailed testing procedures and field reports with submittals.
- B. Notify Owner and Engineer at least two weeks prior to scheduled inspections and tests.
- C. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.
- D. Provide all equipment, tools, and supplies required to accomplish inspection and testing, including load bank. The Owner will provide the fuel for the test.
- E. Preliminary inspection and testing to include, at a minimum:
  - 1. Inspect each system component for damage and defects.
  - 2. Verify tightness of mechanical and electrical connections are according to manufacturer's recommended torque settings.
  - 3. Check for proper oil and coolant levels.
- F. Prepare and start system in accordance with manufacturer's instructions.
- G. Perform acceptance test in accordance with NFPA 110.
- H. Provide field emissions testing where necessary for certification.
- I. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.
- J. Provide full load test utilizing portable test bank for six (6) hours minimum. Simulate power failure including operation of transfer switch, automatic starting cycle, and automatic shutdown and return to normal.
  - 1. Record in 20 minute intervals during the test:
    - a. Kilowatts.
    - b. Amperes.
    - c. Voltage.
    - d. Coolant temperature.
    - e. Ambient temperature.
    - f. Frequency.
    - g. Oil pressure.
- K. Test alarm and shutdown circuits by simulating conditions.

### **3.04 ADJUSTING**

- A. Adjust generator output voltage and engine speed.

### **3.05 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

### **3.06 CLOSEOUT ACTIVITIES**

- A. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
  - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
  - 2. Provide minimum of four hours of training.
  - 3. Instructor: Manufacturer's authorized representative.
  - 4. Location: At project site.

- B. After successful acceptance test and just prior to Substantial Completion, replace air, oil, and fuel filters. The Owner will refill fuel storage tank.
- C. Describe loads connected to standby system and restrictions for future load additions.
- D. Simulate power outage by interrupting normal source, and demonstrate that system operates to provide standby power.

**3.07 PROTECTION**

- A. Protect installed engine generator system from subsequent construction operations.

**END OF SECTION**