

## SECTION 16621

### STANDBY POWER GENERATOR

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. WORK described in this section shall consist of furnishing a permanent standby power generator.
- B. DEVELOPER shall furnish all material and labor to perform the work.

##### 1.02 CODES AND STANDARDS

- A. WORK performed under this section shall conform to the latest edition of the National Electrical Code.
- B. Equipment and material furnished under this section shall be new, unused, and shall be manufactured to the following standards:
  - 1. I.E.E.E. - Institute of Electrical and Electronic Engineers
  - 2. A.N.S.I. - American National Standards Institute
  - 3. U.L. - Underwriters Laboratories, Inc.
  - 4. I.C.E.A. - Insulated Conductor Engineers Association

#### PART 2 PRODUCTS

##### 2.01 STANDBY GENERATOR

- A. The standby generator shall be rated for continuous standby service for the station's full load demand. This shall include running one pump and other auxiliary equipment (e.g. – lights, etc.). The second pump must be locked out in generator mode.
- B. The generator shall be housed in a weatherproof enclosure. Quiet site soundproofing shall be provided to reduce noise to 70 db at a distance of 7 meters for diesel powered generators and 68 db at a distance of 7 meters for natural gas powered generators.
- C. The entire standby generator set shall be warranted for a period of five years from the date of commissioning.
- D. Outdoor weather-protective housing with residential grade muffler shall be installed. The housing shall have hinged side access doors and a rear control door. All doors shall be lockable. All sheet metal shall be primed for corrosion protection and finish painted with the manufacturer's standard color. Vibration isolators as recommended by the generator

set manufacturer shall be provided. The generator must be mounted far enough away from obstructions to allow all doors to be opened 90°. All conduits and gas lines shall be installed underground.

- E. The generator shall be supplied with all auxiliary systems necessary for operation (i.e. – batteries, battery charger, block heater, etc.).
- F. The standby generator set shall include an automatic transfer switch rated for 100% of full load. The switch should be provided with indicators for all phases of operation and be equipped with a fully programmable timer for exercising the equipment. The switch must be selectable for load or no load.
- G. The standby generator shall be provided with a manual override feature.
- H. The transfer switch shall be in NEMA-4 enclosure. The switch shall be configured to switch back when power is restored to the station.
- I. Generators shall be diesel powered with 100 gallons minimum fuel storage or 24-hour operating time, which ever is greater. Fuel storage shall be accomplished by the use of a corrosion-resistant double wall sub-base fuel tank only. No underground storage will be allowed. A leak detection device shall be provided in the interstitial space for sensing fuel leakage.
- J. A generator ground grid must be provided.
- K. The generator control panel shall be instrumented to provide the following status information by way of relay contacts:

Parameter	Relay Contacts	
	Open	Closed
Generator Status	Not Running	Running
Fuel Level	Normal	Low
Generator	Failure	Normal

- 1. Note that this table also contains the contact state associated with the associated status information.
- 2. The relay contacts shall be rated for 120VAC operation with a minimum current capacity of 0.1A (100mA).

- L. Generators shall be manufactured by Cummins, Caterpillar, or Kohler.

PART 3 EXECUTION

3.01 TESTING

- A. Services of manufacturer's authorized representative shall be provided for supervision of the installation, check-out and start-up.

- B. The generator set shall be tested under full load for a period of two hours at the pump station. The diesel fuel and other equipment and materials required for the testing shall be provided by the generator set supplier.
- C. Upon completion of the check-out and testing, the manufacturer's representative shall provide written certification that the system has been properly installed, tested and is functioning properly.

### 3.02 INSTRUCTIONS

Provide after the successful testing one "Instructions and Training Session" with the Owner's designated personnel. Give instructions on operation, function and maintenance.

Provide three (3) sets of complete Operation and Maintenance Manuals.

### 3.03 SYSTEM SERVICE CONTRACT

Provide for Owner's consideration a copy of the manufacturer's standard service contract after the successful start-up.

END OF SECTION