SECTION 263213.13 - DIESEL-ENGINE-DRIVEN GENERATOR SETS

1.1 WARRANTY

A. Materials and Workmanship: Five years.

1.2 MAINTENANCE SERVICE

A. Full-Maintenance Service: 12 months.

1.3 PERFORMANCE REQUIREMENTS

A. NFPA Compliance:

1. Comply with NFPA 37.
2. Comply with NFPA 70.
3. Comply with NFPA 99.
4. Comply with NFPA 110 requirements for Level 2 EPSS.

B. UL Compliance: Comply with UL 2200.

C. Engine Exhaust Emissions: Comply with EPA Tier 3 requirements and applicable state and local government requirements.

D. Environmental Conditions:
1. Ambient Temperature: -25 to 104 deg F.
2. Relative Humidity: Zero to 100 percent.
3. Altitude: Sea level to 1000 feet.

1.4 ASSEMBLY DESCRIPTION

A. Power Rating: 300 kW Standby.

B. Overload Capacity: 110 percent of service load for 1 hour in 12 consecutive hours.

C. EPSS Class: Engine generator shall be classified as a Class 36 according to NFPA 110.

D. Service Load: 375 kVA.

E. Power Factor: 0.8 lagging.

F. Frequency: 60 Hz.

G. Voltage: 480-V ac.

H. Phase: Three-phase, four wire, wye.

I. Induction Method: Turbocharged.

J. Performance: Suitable for loads involving sensitive electronic equipment, adjustable frequency drives, or UPS systems.

K. Parallel engine generator with automatic power control and load sharing.

1.5 ENGINE

A. Fuel: ASTM D975, diesel fuel oil, Grade 2-D S15.

B. Engine Cooling System: Integral radiator.

C. Muffler/Silencer: Critical type.

D. Air-Intake Filter: Heavy duty.

E. Starting System: 12-V electric, with negative ground.

1. Cranking Cycle: 60 seconds.
2. Battery: Lead acid; cranking cycle twice without recharging.
3. Battery Charger: Current-limiting, automatic-equalizing and float-charging type.

1.6 DIESEL FUEL-OIL SYSTEM

A. Fuel-Oil Storage:

1. Base-mounted fuel-oil tank.

1.7 CONTROL AND MONITORING

A. Sequence of Operations: Automatic starting; with control devices grouped on panel mounted on engine generator.

1. Minimum run time control set for 30 minutes with emergency-stop switch.
2. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages grouped in a common control and monitoring panel mounted on engine generator.

1.8 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator Circuit Breaker: Molded-case, electronic-trip type.

B. Generator disconnect switch.

C. Microprocessor-based generator protector.

D. Ground-fault indication.

E. Generator: Directly connected to engine shaft, with dripproof enclosure and solid-state voltage regulator.

1.9 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. Drive: Shaft directly connected to engine shaft.

B. Electrical Insulation: Class F.

C. Range: Extended.

D. Enclosure: Dripproof.

E. Instrument Transformers: Mounted within generator enclosure.

F. Voltage Regulator: Solid state.

1. Adjusting Rheostat on Control and Monitoring Panel: Plus or minus 5 percent adjustment of output-voltage operating band.
2. Maintain voltage within 20 percent on one step, full load.
3. Anti-hunt provision to stabilize voltage.
4. Frequency maintained within 5 percent and stabilized at rated frequency within 5 seconds.

G. Strip heater.

H. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

I. Subtransient Reactance: 12 percent, maximum.

1.10 OUTDOOR ENGINE GENERATOR ENCLOSURE

A. Vandal-resistant, sound attenuating, weatherproof steel housing.

1.11 SOURCE QUALITY CONTROL

A. Testing: Prototype at factory.

1.12 FIELD QUALITY CONTROL

A. Testing: By Contractor-engaged agency.

END OF SECTION 263213.13