



HERNANDO COUNTY UTILITIES DEPARTMENT

Certification for Electrical Generator

Pumping Station Project Name

Location of Pumping Station

Generator Specified

Pumps Specified

This form shall be required during the initial design submittal and again at the shop drawing review phase if any changes are made to the specified generator or pumps. The Electrical Generator (Generator) shall meet the following criteria of the "Hernando County Utilities Department (HCUD) Water, Reclaimed Water and Wastewater Constructions Specifications Manual" (January 2013 Edition) and authorized revision.

6.1.3.1 The Generator shall be supplied by Blue Star, Caterpillar, Onan, or MTU Onsite Energy.

6.1.3.2 To be classified as a manufacturer, the builder of the Generator shall be identified as a "one source of supply and warranty" responsibility.

6.2.1.1 The engine shall be a liquid cooled, diesel fueled, turbocharged after-cooled engine of 4-stroke cycle design.

6.2.1.5 Engine speed shall be controlled by an isochronous governor.

6.2.1.10.1 The engine shall have a stainless steel (SS), flexible connector to couple the engine exhaust manifold to the exhaust system.

6.2.1.10.2.1 The Generator shall have a factory installed, double walled, base mounted fuel tank with sufficient capacity to operate the engine for a minimum period of 48 continuous hours operation rated load. The design engineer shall consider the engine size and fuel efficiency when recommending the fuel tank capacity. The capacity of the fuel tanks shall NOT exceed 500 gallons unless approved by HCUD.

6.2.2.2 (Under revision at this time.)

One step load acceptance shall be 15% of Generator nameplate rating and meet the requirements of NFPA 110 paragraph 5-13.2.6. The Generator set and regulator must sustain at least 85% of rated voltage for 10 seconds with 250% of rated load at near zero power factor connected to its terminals when equipped with direct or brushless excitation. Units equipped with permanent magnet exciters shall have a selectable 300% short circuit current. Recovery time not to exceed one (1) second is required for voltage drops greater than 15% but less than or equal to 18%. Pump station Generators shall be sized for across the line starting, staging in pumps.

6.3.1.1.1 The enclosure shall be aluminum, wind rated to 150 mph, weather protective, and sound attenuating. The Generator shall be factory enclosed with corner posts, uprights and headers. The roof shall aid in the runoff of water and include a drip edge. The enclosure shall be coated with electrostatically applied power paint, baked and finished to manufacturer's specifications. The enclosure shall be completely lined with sound-deadening material of self-extinguishing design. The enclosure shall

have large, hinged removable doors to allow access to the engine, alternator and control panel. Hinges and all exposed fasteners shall be SS. Each door shall have lockable hardware with identical locks all keyed to CH751. Padlocks do not meet this specification. When Generator is installed on the site, the combined sound level for the exhaust, engine, fan, and all components of the Generator must not exceed 75 DBA peak measured at 23 feet for all Generators 1000 KW or smaller. HCUD will have the option to measure and record sound levels once the generator is installed. At the minimum, enclosure shall have a level II (2) sound attenuation or approved equal. Enclosure shall be completely lined with 1-inch thick, UL 94, Heat Factor (HF) 1 listed acoustic insulation. Exhaust discharge should be directed to minimize exhaust noise toward nearest residential or commercial property. HCUD shall have the option of requiring vertical exhaust discharge. For generators larger than 1000 KW shop drawings must be submitted for HCUD approval. The shop drawings must detail enclosure materials of construction, overall dimensions, layout, sound attenuation capabilities, and highest sound level measured at 7 meters from Generator.

6.3.1.1.2 The exhaust silencer(s) shall be provided of the size as recommended by the manufacturer to achieve required exhaust sound level maximum of 75 DBA measured at 23 feet for all generators 1000 KW or smaller. For larger Generators, proposed exhaust silencer(s) shall be submitted to HCUD for approval prior to start of construction. The silencer(s) shall be mounted within the weather protective enclosure for reduced exhaust noise and shall be connected to the engine with a flexible, seamless, stainless steel exhaust connection. A rain cap shall be attached to and terminate the exhaust pipe. All components shall be properly sized to assure operation without excessive back-pressure during operation.

6.4.1 GENERAL: The automatic transfer switch (ATS) shall be furnished by Asco, Onan or the manufacturer of the Generator so as to maintain system compatibility and local service responsibility for the complete emergency power system.

6.5.5 WARRANTY SPECIFICATIONS: (Warranty documentation shall be submitted to HCUD.)

6.5.5.1 The standby Generator system components, engine generator, instrumentation panel and transfer switch shall be warranted by the manufacturer against defective materials and factory workmanship for a period of 5 years. Such defective parts shall be repaired or replaced at the manufacturer's option, free of charge for parts, labor and travel for the first 2 years. Parts shall be replaced free for the remaining 3 years of the warranty period.

6.5.5.2 The warranty period shall commence when the Generator shall be placed into service. Multiple warranties for individual components (engine, alternator, controls, etc.) shall not be acceptable. Satisfactory warranty documents shall be provided.

6.5.6.2 4-Hour Load Bank Test: The contractor shall perform a 4-hour electric load bank test, at 100% load, upon the completion of the installation of a Generator. The contractor shall schedule such tests to coincide with key HCUD Technical Personnel being on site during the test.

List alternative design options which meet or exceed HCUD criteria.

This form shall be completed by a Florida Professional licensed engineer or a Florida Certified electrical contractor. No other signatures will be accepted.

I hereby certify that the Generator complies with the HCUD criteria specified on this form and in the "Hernando County Utilities Department (HCUD) Water, Reclaimed Water and Wastewater Constructions Specifications Manual" (January 2013 Edition), with the exception of the alternative design options described above. I also certify that the Generator, including any alternative design options, meets or exceeds the requirements of the applicable HCUD criteria. I further certify that the Generator is capable of providing adequate backup power for the Pumping Station and is able to provide the electrical requirements of the Pumping Station when installed correctly.

This Certification is issued to and for the benefit of Hernando County, Florida, the Hernando County Water and Sewer District and the Hernando County Utilities Department (collectively "the County") for the purpose of ensuring that the Generator meets or exceeds the criteria for electric power required in the "Hernando County Utilities Department (HCUD) Water, Reclaimed Water and Wastewater Constructions Specifications Manual" (January 2013 Edition). The County shall be entitled to use and rely upon this Certification in reviewing the Generator for the Pumping Station.

ENGINEER

Name

Signature

Date

SEAL

Professional Engineer License Number

CONTRACTOR

Contractor Name or Company

Qualifier/License Holder

Signature

Date

SEAL (optional)

State License Number