REQUEST FOR PROPOSALS No. 24-017

Wellington Pump Station Upgrade – Generator Procurement

Addendum 1
11 pages
Issued: February 29, 2024

Closing Date & Time: on or before 3:00 PM Pacific Time on March 14, 2024

This addendum shall be read in conjunction with and considered as an integral part of the Request for Proposal. Revisions supersede the information contained in the original Proposal or previously issued Addendum. No consideration will be allowed for any extras due to any Proponent not being familiar with the contents of this Addendum. All other terms and conditions remain the same.

Request for Proposals Addendum

Item 1:

Delete: **4. SCOPE OF SERVICES**
The scope shall include, but not necessarily be limited to the supply, delivery, and installation of one (1) diesel generator set for supplying electrical power during interruptions in the normal Utility supply. The set shall be provided complete with all control panels, battery charger, block heater and associated appurtenances and accessories as outlined in Appendix A.

Add: **4. SCOPE OF SERVICES**
The scope shall include, but not necessarily be limited to the supply, delivery, and **unloading** of one (1) diesel generator set for supplying electrical power during interruptions in the normal Utility supply. The set shall be provided complete with all control panels, battery charger, block heater and associated appurtenances and accessories as outlined in Appendix A.

Item 2:

Delete: Appendix A – Kerr Wood Leidal's Division 16 Electrical Section 16200 Standby Generator Rev. 0 in its entirety.

Add: Appendix A - Kerr Wood Leidal's Division 16 Electrical Section 16200 Standby Generator **Rev. 1**, enclosed herein.

Questions & Answers

Q1: In reviewing the RFP 24-017, Section 4 indicates supply, delivery, and installation of one diesel generator set; and installation is again referenced in Part 1 General 1.1 Summary Section 1, but there are no associated drawings or specs for the installation. Is installation part of this RFP?

A1: Installation, other than the requested support for commissioning that is outlined in the specifications in Appendix A is not included as part of this RFP. The wording for RFP 24-017 Section 4 has been modified as per the Request for Proposals Addendum, Item 1, above.

End of Addendum 1

Appendix A

Table of Contents

Part 1 General

1.1 Summary

.1 This section covers the supply, delivery, and unloading of one (1) diesel generator set for supplying electrical power during interruptions in the normal Utility supply. The set shall be provided complete with all control panels, battery charger, block heater and associated appurtenances.

.2 The Regional District of Nanaimo's electrical trade shall start and test the generator set under the direction of the Supplier's representative.

1.2 Installation Location

.1 The generator set shall be installed outdoors at the Wellington Pump Station which is located within the Regional District of Nanaimo by others. It will be installed within 50 m of the shoreline and could be exposed to sea spray, and driven rain/snow.

1.3 Generator Set Ratings

.1 The diesel generator set minimum continuous standby rating shall be approximately 600 kW, 750 kVA at 0.8 power factor or as dictated by the Motor Starting Requirements below.

.2 Ratings of unit supplied shall be supported by engine manufacturer's published power curves and output shall be net electrical kW after deductions for engine driven radiator fan and accessories.

.3 Ratings shall be for the above-mentioned installation location.

1.4 Generator Design Parameters

.1 Voltage: 3Ø, 4 wire, 600 Volts.

.2 Frequency: 60 Hz

.3 Altitude: <100 m metres above sea level

1.5 Design Verification

.1 The generator set manufacturer shall provide calculations showing that the equipment offered meets all requirements.

1.6 Motor Starting Requirements

.1 The generator shall be capable of sequentially starting four 130HP induction motors, each operated by a variable frequency drive, including harmonic filtering.

.2 Additional loads include a single 10hp induction motor, also operated by a variable frequency drive.

.3 The engine shall have sufficient torque and the set sufficient inertia to start the motor(s) as described above. Minimum generator frequency during motor starting shall be 56 Hz.

Part 2 Products

2.1 Reference Standards

.1 All standards referenced in this section shall be the most recent edition.

2.2 Engine

.1 The Engine shall conform to the following minimum requirements:

a. Heavy duty 4 cycle industrial diesel.

b. Standby power rating consistent with the minimum ratings of this specification.

c. Turbocharged or naturally aspirated.

d. Rated speed of 1,800 RPM.

2.3 Lubricating Oil System

.1 Lubricating oil system shall include an oil/water heat exchanger to maintain recommended oil temperatures.

.2 Full flow/pressure replaceable element oil filters shall be fitted according to engine manufacturer's standard practice.

.3 Operating personnel shall be able to check the level of the lubricating oil without stopping the engine. Level indicator shall be separate from oil level switch.

.4 Provide crankcase breather system, complete with piping and condensate trap. Breather shall be installed according to manufacturer's standard practice.

2.4 Engine Cooling

.1 The engine shall be fluid cooled with unit mounted radiator and fan.

.2 Engine cooling fluid shall be circulated by an engine driven centrifugal pump.

.3 Cooling system shall be sized to operate in ambient temperature of 35 °C to +40 °C.

.4 Following factory test and prior to shipment, the cooling system shall be filled with premixed anti-freeze and water to protect to -35 °C and the radiator shall be prominently tagged to indicate same.

2.5 Alarm and Shutdowns

.1 The protective devices shall be designed to give an alarm and shut down the generator set when this must be done to prevent damage.

.2 Provide the following minimum protection:

a. Low oil pressure – shutdown and alarm;

b. High coolant temperature – shutdown and alarm;

c. Over crank – shutdown and alarm;

d. Overspeed – shutdown and alarm;

e. Low battery voltage, complete with time delay – alarm only; and

f. Low fuel level – alarm only.

.3 The manufacturer recommended settings for all alarms and shutdowns shall be clearly shown on the schematic drawings and shall be factory set where practical.

2.6 Governor

.1 Speed governor shall be mechanical, electronic, or hydraulic type, adjustable from 0 to 7% droop.

2.7 Air Cleaner

.1 A large generous-dimensioned air cleaner for normal duty operation shall be mounted and supported on the genset.

2.8 Generator

.1 The Generator shall have a 2/3 winding pitch stator and shall be 4 pole, brushless, self-ventilated, horizontal drip proof, synchronous, single or two bearing unit, and wye connected. The neutral shall be accessible and grounded. The Generator shall be capable of 10% overload on the continuous rating following 24 hours of continuous operation, without exceeding the temperature ratings for the insulation. Allowable Temperature Rise at full load shall be 125°C rise over 40°C ambient.

.2 Provide manufacturer's data sheets or curves, with bid, showing voltage dip with various kVA inrush and initial loads.

.3 Provide Generator designed to withstand sustained short circuit current of up to 300% of the rated current for up to 10 seconds.

.4 The Generator shall be the product of an established manufacturer and shall conform to the latest standards of NEMA MG1, ANSI and IEEE.

.5 Acceptable manufacturers are:

a. Kohler;

b. Cummins;

c. Simpower; or

d. Approved alternate.

2.9 Excitation

.1 Excitation shall provide +/- 0.5% to 1.0% steady state voltage regulation.

.2 Voltage adjustment means shall be indicated in the shop drawings.

2.10 Genset Controller

.1 Provide a controller that is suitably isolated from engine vibration and is complete with the following minimum features:

a. Battery monitoring and testing features;

b. Temperature operating range: -40 °C to 70 °C;

c. LCD Operator display panel;

d. AC protection functions;

e. Engine protection functions;

f. Control functions;

g. Current transformers, potential transformers and control transformers as required;

h. Generator/Engine/Other data display via LCD display;

i. Configurable inputs and output relays; and

j. Open transition automatic transfer switch control.

2.11 Generator Breaker

.1 Provide 600 Volt, 700 Amp, 3 pole thermal magnetic breaker, mounted on generator for generator overload and overcurrent protection. Breaker minimum instantaneous trip shall be 12 times breaker rating.

.2 Provide breaker trip curve with shop drawings.

2.12 Fuel System

.1 Provide a sub-base dual-walled fuel tank with sufficient capacity to operate the generator at 80% load for a minimum of 24 hours.

.2 Tank shall include leak detection, and low fuel level detection.

.3 Provide fuel filters, water separator, and fuel lines.

2.13 Generator Set Accessories

.1 The generator set shall be supplied with the following accessories and auxiliary equipment:

a. Spring Vibration Isolators.

b. Exhaust Silencer and Piping.

c. Starting System – Starting shall be by means of an electric starter. A battery set shall be provided complete with a box and cover. Battery cables complete with suitable connectors shall be provided.

d. Battery Charger – Provide a battery charger complete with On-Off switch and pilot light mounted in control panel.

e. Coolant Heater – An engine coolant heater shall be provided, sized to maintain engine temperature 12˚C above ambient temperature.

f. Drip Pan – A drip pan shall be provided.

g. Sound Attenuated Enclosure – Provide weather protective aluminum (with powder coat paint) enclosure with Sound Level 2 rating. Access doors and panels shall be lockable. See clause 1.2 for installation location details.

2.14 Manuals

.1 One (1) hardcopy and 1 PDF file of the operation and maintenance manuals shall be provided. Hardcopy manual shall be bound in a three ring hard cover binder labelled with the Generator Set manufacturer's name, set description and reference project name and number or serial number. Manuals shall contain a minimum of the following items individually sectioned and referenced with an index:

a. Title page showing pertinent details of the subject generator set;

b. Table of Contents;

c. Factory test report;

d. Engine record card (showing serial number and pertinent build configuration);

e. Engine operator's manual;

f. Voltage regulation equipment operations manual (if not included with generator);

g. Engine accessory equipment descriptive brochures;

h. Complete set of data sheets;

i. Exhaust emission and compliance statement certifying compliance with applicable regulations;

j. Miscellaneous accessory equipment descriptive brochures;

k. Control panel equipment brochures;

l. Mechanical drawings and complete bills of material for all components supplied; and

m. Electrical drawings and schematics, and complete bills of materials for all components supplied.

2.15 Manufacturer's Drawings

.1 An electronic copy of the electrical schematics and general arrangement drawings of the generator set shall be supplied to the Engineer for approval prior to assembly and testing of the generator set.

.2 The generator Data Sheets in Part 3 Execution of this section shall be provided with the above manufacturer's drawings.

2.16 Spare Parts

.1 Provide two (2) of each of the following as spare parts for the generator:

a. Fuel filter;

b. Oil filter;

c. Air filter; and

d. Fuses (if any) for the Genset Controller.

Part 3 Execution

3.1 Spare Parts

.1 Spare parts shall be packaged in a sealed cardboard box(es) and shall be labeled “GENERATOR SPARE PARTS” and shall also be labeled with the Owner’s name and shipping destination address.

.2 Spare parts shall be shipped with the genset.

3.2 Factory Tests

.1 The generator set manufacturer shall conduct in-factory tests of the completed assembly and all accessories. Tests shall include the following minimum requirements:

a. Four-hour test at standby rating with available power factor;

b. Demonstration of:

- maximum step load capability (minimum acceptable standby rating);
- maximum transient voltage and frequency at step load (maximum frequency transient to be 5% below settled load speed);
- low oil pressure shutdown;
- high coolant temperature shutdown;
- overspeed shutdown;

- over crank shutdown;
- low battery voltage alarm;
- low fuel level alarm;
- remote alarm output;
- block heater and thermostat operation; and
- voltage adjust range (plus or minus 5% of nominal required).

.2 All load tests shall include reading at 1/2 hour intervals. Demonstrations shall be to the satisfaction of the Engineer and the results of the demonstrations shall be noted on the approved test records.

.3 Prior to commencement of factory tests, the supplier shall submit proposed test sheets for approval of format and intended tests.

3.3 Supplier Qualifications

.1 The generator set supplier must have the capabilities to design, manufacture and provide service/warranty coverage. Minimum requirements in this regard will consist of the following points. Approved suppliers must meet the subject items and provide confirmation where necessary.

.2 Service:

a. Complete generator set system service capability must be provided by the generator set manufacturer. This shall include in house stock of all components utilized in the manufacture of the set.

.3 Warranty:

a. Generator set manufacturer shall provide full warranty coverage for all components. Minimum system warranty shall be 12 months after site startup or 18 months after acceptance of factory tests.

.4 Design:

a. Generator set manufacturer shall exhibit that adequate system design capabilities exist within the organization.

.5 Manufacturing:

a. The generator set manufacturer shall exhibit manufacturing capabilities consistent with the requirements of the specification. These shall include as a minimum:

- Regularly assigned area and personnel engaged in the manufacture and service of generator sets and related industrial equipment.
- Regularly assigned area and personnel engaged in the manufacture and service of generator set control panels and switchgear.
- Test facilities specifically adapted for conducting generator set loading.

3.4 Unloading of The Generator Set

.1 The generator set shall be unloaded by the Supplier at a location designated by the Owner either on site or at the nearby Greater Nanaimo Pollution Control Centre, 4600 Hammond Bay Rd, Nanaimo, BC V9T 5A8.

.2 The engine and generator shall be lubricated where required by the Supplier. All crankcase, gear oil and coolants shall be added prior to start-up. All engine controls shall be tested for correct operation and the generator set shall be successfully run under load for a minimum period of six hours as part of the initial start-up period. Under no circumstances shall a new engine be run at idle speed for extended periods.

3.5 Start-up

.1 The Supplier shall provide qualified field personnel from the generator set supplier for start-up services. The Supplier shall allow for a minimum two full days on site for commissioning. All costs for start-up shall be included in the Tender.

.2 The generator set shall be completely tested on site to the satisfaction of the Engineer. All safety shutdowns, alarms and control functions shall be demonstrated.

3.6 Shipment

.1 The Supplier shall notify the RDN not less than 48 hours before planned delivery of equipment and materials. The Supplier shall arrange to have the necessary personnel and equipment on site to accept delivery and off-load the equipment. Delivery shall only be made during normal working hours.

.2 The Supplier shall be responsible for all equipment during transit to site. Arrival of the equipment at the site does not relieve the Supplier of their responsibilities under this contract.

.3 All equipment shall be properly marked and packed for protection against damage and weather during handling and shipping to the site. All exposed surfaces shall be suitably coated to prevent corrosion.

.4 It shall be the responsibility of the Supplier after the award has been made to ensure that the dimensions of all items shipped are such that all tunnels, overpasses other restrictions can be negotiated. They shall ensure that shipping weights of all items can be accommodated on transports.

.5 Adequate lifting lugs shall be provided on all items or crates.

3.7 Delivery Date

.1 The Supplier shall inform the RDN of the time in calendar days required to deliver the equipment as specified. The Supplier shall include this information in their bid documents.

3.8 Data Sheets

.1 Provide a complete set of Data Sheets with bid and with the subsequent shop drawing submission.

.2 Data Sheets shall contain the following information (as a minimum):

a. Engine and Engine Electrical Specifications;

b. Alternator/Generator Specifications;

c. Information on all options as selected and accessories;

d. Controller Specifications;

e. Fuel System Specifications;

f. Lubricating System Specifications;

g. Exhaust System Specifications;

h. Standard Features;

i. Warranty Information;

j. Weights and Dimensions; and

k. Excitation System Specifications.

Revision History

Rev. No.	Date	By	Checked By	Issued For	Comment
0	February, 2024	WM	KBS	Proposal	
1	February, 2024	SMH	KBS	Addendum #1	

End of Section