



ADDENDUM ELE-001

Project: Canadian Space Agency – Replacement of an uninterruptible power supply

Description: Modifications to specifications

Project no.: 2020-134-1001

Division: Electrical

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1. This addendum forms an integral part of the original plans, specifications and contractual documents. Bidders shall make sure that the cost of this addendum is included in the bid amount.
2. Documents:
 - 2.1 Included documents:

Specifications: section 26 33 53, pages 7-8.
3. Description of work:

See the attached document.

- .1 The UPS shall be warrantied for 100% of parts and labour for a period of thirty-six (36) months from the final date of commissioning of the unit by the supplier.
- .2 The warranty period of all batteries will be one hundred and twenty (120) months.
 - .1 The warranty is for 100% replacement of its value during the first thirty six (36) months and prorated in equal yearly decreasing increments during the eighty-four (84) months thereafter until expiration of warrant at end of one hundred and twenty (120) months from the date of Certificate of Substantial Completion.
- .3 Provide in separate prices not included in bases bid the hourly rate for emergency service calls for years 4 to 5 inclusive (after the first three years of full warranty).
- .4 Preventive maintenance: provide a price for two (2) annual preventive maintenance exercises, one minor and one major, for the first three (3) years.
- .5 Preventive maintenance: provide a separate price not included in base bid for two (2) annual preventive maintenance exercises, one minor and one major, for year 4 to 5 inclusive.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- .1 Submit required replacement materials / equipment.
- .2 Replacement materials / equipment shall include the following :
 - .1 One (1) fan set for each type of fan used for cooling all cabinets encompassing the UPS system.

Part 2 Products

2.1 SYSTEM DESCRIPTION

- .1 All elements required to provide a complete and functional UPS system must be provided by a single supplier in order for the monitoring of the warranty for complete assembly and for each comprising element is provided by a single party.
- ① .2 Normal capacity of the UPS module shall be 50 kVA with a minimum real power of 50 kW.
- ① .3 The UPS system shall have a 600V input voltage and an 120/208V output voltage. Include if required an input auto transformer and an output isolation transformer to obtain the required voltages within the UPS system.
- .4 The UPS system shall include the following main components:
 - .1 The UPS module comprised of a rectifier, an inverter, a battery charger, an internal static bypass circuit, and a control and monitoring panel. Modular type UPS unit with swappable load sharing power modules shall not be accepted.



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 - .2 A storage battery in one or two matching cabinets providing a minimum 13 minute run time upon power loss at rated full load output power, ie minimum 50 kW.
 - .3 An external bypass circuit integral to the equipment in a matching cabinet.
 - .4 Input / output transformers shall be mounted in suitable cabinet enclosures forming a part of the complete assembly.
 - .5 The UPS system shall be a high efficiency type. Under normal operating conditions during in-line double conversion mode of operation, the unit shall provide 94.5% efficiency at loading conditions ranging from 40% to 100% of UPS rated capacity. If the alternative option is provided, include the losses of the isolation transformer required at the output of the inverter, to transform the voltage from 480V to 120/208V, and do not include the losses of the input autotransformer.
 - .6 The equipment must be able to operate continuously, without supervision.
 - .7 Ensure the UPS system is compatible with critical computer loads rated at 120/208V.
 - .8 The UPS system shall be mounted in matching NEMA 1 cabinets for free-standing installation on the floor. Access for maintenance shall be provided from the front and will be equipped with drip screens to protect components located within the cabinets.
 - .9 The UPS system shall have exterior panels requiring special tools for access to internal components.
 - .10 Minimum symmetrical short circuit current rating shall be rated at 35 kA.

2.2 PERFORMANCE AND MODES OF OPERATION

- .1 The UPS system shall be designed to operate as an uninterruptible power supply system with the following modes of operation:
 - .1 Operation in “normal” mode:
 - .1 The critical AC load is continuously supplied by the inverter of the UPS system.
 - .2 The rectifier/charger shall include the necessary equipment to rectify the AC power supply in order to supply the inverter and storage battery. The storage battery shall be appropriately supplied in order to maintain its appropriate full charge.
 - .2 Operation in “emergency mode” mode (via storage battery):
 - .1 Upon loss of AC supply power, the critical load shall be maintained by the inverter, which without any mechanical transfer is energized from the storage battery. **There shall be no interruption of power to the critical load during a failure or return of power to the AC service.**
 - .2 Automatic switching of the system to storage battery:
 - .1 Following an operator selection at the control panel.
 - .2 Following a power failure.

