

BC MINISTRY OF TRANSPORTATION

Electrical Maintenance Specification E-190 (Version 2 – March/07)

UNINTERRUPTIBLE POWER SUPPLY (UPS) MAINTENANCE

1. OBJECTIVE

- To ensure that uninterruptible power supplies are operational and function in accordance with their design.

2. GENERAL PERFORMANCE SPECIFICATIONS

2.1 Routine Maintenance Services

The Contractor must:

- a) perform preventative maintenance of uninterruptible power supplies;
- b) repair uninterruptible power supplies;
- c) replace non-functioning uninterruptible power supplies and components;
- d) remove graffiti;
- e) test all uninterruptible power supplies, and
- f) document all uninterruptible power supply activities.

2.2 Additional Services

The Contractor must as and when required by the Ministry:

- a) supply, install and verify operation of uninterruptible power supplies complete with cabinets;

3. DETAILED PERFORMANCE SPECIFICATIONS

3.1 Routine Maintenance Services

The Contractor must:

- a) Repair or replace uninterruptible power supplies and their components, including batteries, in conformance with manufacturers' recommendations. Batteries shall be replaced when their charge falls below 80% of their rated capacity;
- b) perform preventative maintenance;
- c) notify the PHCC of any malfunctioning uninterruptible power supplies causing a traffic disruption and inform the PHCC when repaired;
- d) remove or cover graffiti in accordance with the *Highway Maintenance Specification – Litter Collection and Graffiti Removal*;
- e) document all activities related to electrical maintenance of uninterruptible power supplies including but not limited to field inspections, patrols, testing, complaints received / responses made, and all changes made to the uninterruptible power supplies.

3.1.1 Performance Time Frames

The following establishes the maximum time, from the time the deficiency was detected or reported to the Contractor, within which the Contractor must respond to the deficiency:

- a) uninterruptible power supplies and their components that constitute or have the potential to constitute an immediate safety hazard to the Highway User or cause a traffic disruption, within 1 hour;
- b) uninterruptible power supplies and their components that do not operate as per their original design intent but are not immediate safety hazards, on the next regularly scheduled work day;
- c) uninterruptible power supplies and/or their components that operate as per the original design intent, do not create a safety hazard, and are structurally sound but have identified deficiencies, within 3 months.

The Contractor must:

- a) perform preventative maintenance annually, with the exception of battery preventative maintenance, which shall be done at six month intervals;
- b) notify the PHCC of any malfunctioning uninterruptible power supplies causing traffic disruption within 5 minutes from the time the malfunction was detected by or reported to the Contractor and inform the PHCC when repaired;
- c) remove or cover graffiti in accordance with the Performance Time Frames listed in the *Highway Maintenance Specification – Litter Collection and Graffiti Removal*;
- d) document all activities related to electrical maintenance and operations of uninterruptible power supplies immediately.

3.2 Materials

- Refer to 3.1 of the Introduction.

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