

## **Eaton UPS Full Fan Field Update Scope of Work Attachment L-10**

This scope of work applies to most UPS models manufactured by Eaton. The following is an outline of general procedures that are normally performed by Field Service Personnel during the course a full fan replacement. All checks and processes may not be applicable to all equipment models.

### **FAN REPLACEMENT**

Eaton will perform a full fan replacement to extend the life and reliability of UPS equipment. This service is typically performed at the same time as a full capacitor replacement occurring after 6 to 7 years of service. An Eaton technician will swap out old fans and replace them with new fans, functional testing will be performed to ensure all fans are working properly and tachometer monitoring (when applicable) is operational. The UPS will be placed in maintenance bypass mode to enable installation of the fans and associated parts. Installation of the update can be completed typically within 4 hours (model dependent) and will be performed by an Eaton field technician.

### **METHOD OF PROCEDURE**

1. Verify that the critical load is properly supported on the UPS and that no alarm conditions exist.
2. If the UPS is a parallel capacity or redundant module, receive approval to take the module off-line (off of the critical buss).
3. If the UPS is a parallel capacity or redundant module, skip to step 5.
4. If the UPS is a stand-alone module perform the following steps:
  - a. Receive approval from the customer to transfer the UPS to maintenance bypass.
  - b. Transfer critical load to bypass.
  - c. Transfer critical load to maintenance bypass (if applicable).
  - d. Shut down UPS module(s), perform lockout tag-out (if applicable).
  - e. Perform full fan update and verify all connections and fans are secure.
  - f. Clear lockout tag-out and reenergize UPS.
  - g. Issue a transfer to bypass.
  - h. Verify functionality of all fans and ensure tachometer monitoring is operational.
  - i. Retransfer critical load from maintenance bypass to bypass.
  - j. Transfer critical load back to normal mode.
  - k. Monitor the UPS operating parameters.
  - l. Procedure is complete.
5. If the UPS is a parallel capacity or redundant module perform the following steps:
  - a. Receive approval from the customer to take the UPS module offline.
  - b. Command UPS module offline.
  - c. Verify operation of remaining modules supporting critical load.
  - d. Shut down UPS module(s), perform lockout tag-out (if applicable).
  - e. Perform full fan update and verify all connections and fans are secure.
  - f. Clear lockout tag-out and reenergize UPS.
  - g. Verify functionality of all fans and ensure tachometer monitoring is operational.
  - h. Transfer module back to normal mode.
  - i. Monitor the UPS operating parameters.
  - j. Procedure is complete.

A field activity report shall be provided to the customer documenting full fan update is complete.