FAIRBANKS MORSE ENGINE
an EnPro Industries company

FM Notification Report Serial Number 10-05
Fairbanks Morse Engine
10CFR 21.21 (d)(3)(ii) Notification

(i) Name and address of the individual or individuals informing the Commission.

Mr. Dominic Dedolph
Manager, Quality Assurance
Fairbanks Morse Engine
701 White Avenue
Beloit, WI 53511

(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Facility: PSE&G (Hope Creek)

Basic component which fails to comply or contains a defect:

Electronic Speed Switch (FM P/N 11916260)

The electronic speed switch 11916260 is only used in the engine control cabinet for PSE&G (Hope Creek). The electronic speed switch is used to detect when the engine is running at or above various speeds that are important to the management of the emergency diesel generator (EDG), particularly during its starting process. For Hope Creek it contains four relay outputs that are used for various control functions.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

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701 White Avenue
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(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

Nature of defect:

Fairbanks Morse (FM) evaluation has determined that a potential safety hazard existed for the original FM P/N 11916260 created from FM P/N P12620666 rev 0 that was delivered to Hope Creek. Subsequent to shipment to Hope Creek, additional testing found that when the speed switch assembly was mounted on a conductive surface, the voltage regulator grounded out the 24 vdc power through the heat sink preventing the speed switch from operating.

Rec'd 1/18/11

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By adding an insulator kit, the speed switch circuit was isolated from ground and verified as functional. The FM initial design of the speed switch did not include the insulator kit (non-conductive washers) that would electrically isolate the voltage regulator from the heat sink and thus the metal mounting surface.

This condition was not detected prior to shipment of the first speed switch assembly due to the following:

1. Inspection / functional testing at FM was performed on a wooden / non-conductive bench top which did not short the circuit.
2. The FM test plan, Critical Characteristic Verification (CCV) sheet, did not identify circuit isolation from ground as a critical characteristic requiring inspection.

Safety hazard which could be created by such defect:

The speed switch provides the following functions, through four relays [crank rotation relay (CRR-40 rpm), air start relay (ASR-95 rpm), low speed relay (LSR-125 rpm), and high speed relay (HSR-365 rpm)] operated by the speed switch (abbreviated summary of functions):

1. CRR – Annunciate whether the engine attempted to start, or did not even crank over in the process of starting
2. ASR – Turn off the air supply to the engine starting system
3. LSR – Initiate field flashing, turn off keep warm systems and other miscellaneous non-essential systems and enable service water to engine coolers
4. HSR – Backup LSR and enable alarm/shutdown circuits

It should be noted that some HSR functions are backed up by a pressure switch. However, the pressure switch actuation time may not initiate field flashing quick enough to achieve 4160V within 10 seconds. All other functions are not time critical.

(v) The date on which the information of such defect or failure to comply was obtained.

Deviation discovered on November 16, 2010
Evaluation completed on January 5, 2011

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(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part.

One speed switch assembly of 11916260 created from P12620666 rev 0 with the defect was shipped to Hope Creek in September 2010. It was never installed on the EDG prior to being recalled by FM. This unit was returned to FM in November under RMA # 10008120 and has since been reworked and verified to be in compliance with the latest design 11916260 created from P12620666 rev 1 to eliminate the deficiency.

(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

The one affected unit 11916260 created from P12620666 rev 0 was recalled and modified by adding an insulator kit (item 23) between the voltage regulator (item 8) and the heat sink (item 7) as shown in Figure 1. The design records have been updated accordingly. The assembly drawing, P12620666, and engineering bill of material have been updated. In addition the inspection plans for this part have been updated to include a circuit isolation check to confirm that the case of the voltage regulator is electrically isolated from the aluminum brackets. The inspectors have been trained in how to perform these checks.

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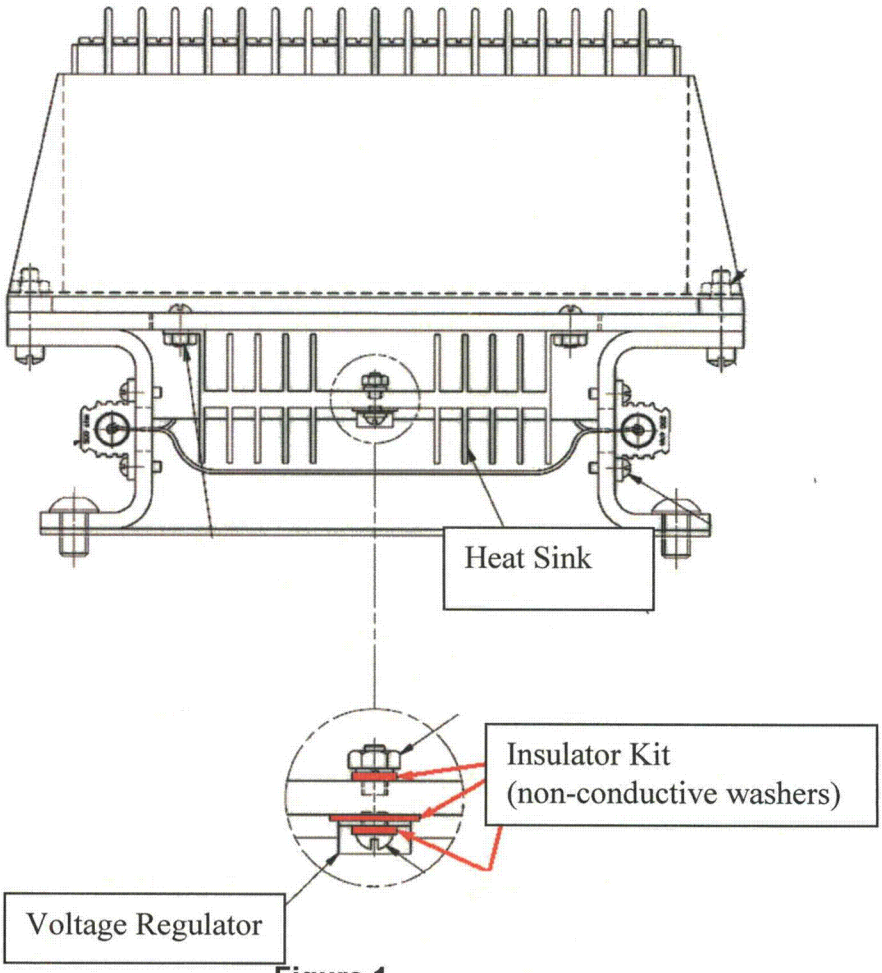
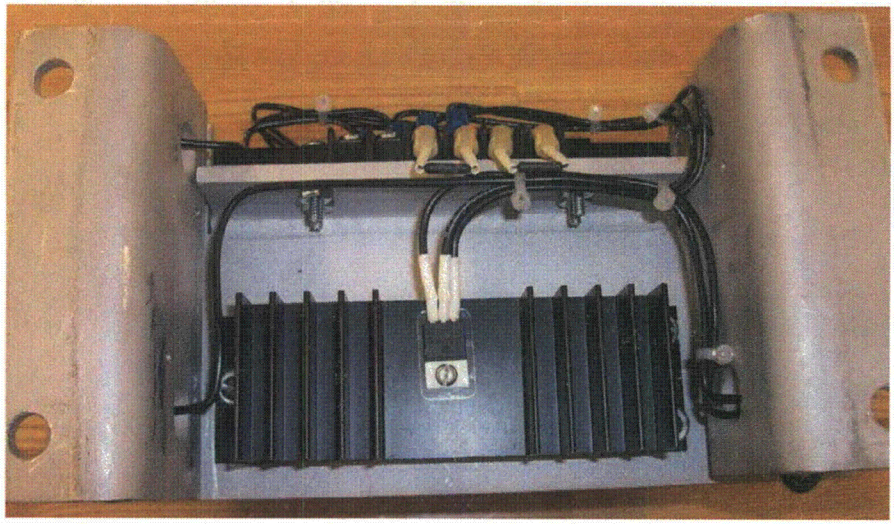


Figure 1



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(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

The one affected unit 11916260 created from P12620666 rev 0 was recalled and it has been reworked to 11916260 created from P12620666 rev 1. No additional notifications are required.