

General Information or Other (PAR)

Event # 43235

|   |   |
|---|---|
| <b>Rep Org:</b> FAIRBANKS MORSE         | <b>Notification Date / Time:</b> 03/14/2007 11:41 (EST) |
| <b>Supplier:</b> FAIRBANKS MORSE        | <b>Event Date / Time:</b> 03/13/2007 12:00 (CDT)        |
|   | <b>Last Modification:</b> 03/14/2007                    |
| <b>Region:</b> 3                        | <b>Docket #:</b>  |
| <b>City:</b> BELOIT                     | <b>Agreement State:</b> Yes                             |
| <b>County:</b>                          | <b>License #:</b>                                       |
| <b>State:</b> WI                        |   |
| <b>NRC Notified by:</b> DOMINIC DEDOLPH | <b>Notifications:</b> RICHARD SKOKOWSKI R3              |
| <b>HQ Ops Officer:</b> JOHN MacKINNON   | OMID TABATABAI NRR                                      |
| <b>Emergency Class:</b> NON EMERGENCY   |   |
| <b>10 CFR Section:</b>                  |   |
| 21.21 UNSPECIFIED PARAGRAPH             |   |

## 10 CFR 21 NOTIFICATON - IDENTIFICATION OF DEFECT WOODWARD GOVERNOR PIVOT PIN DEFECT

Pursuant to 10 CFR 21.21 (d)(3)(ii), Fairbanks Morse Engine is submitting a written notification on the identification of a defect that is considered to be a substantial safety hazard.

(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:

Duane Arnold Energy Center

Basic component which fails to comply or contains a defect:

Woodward governor actuator model EGB13P, part number 16403190, Woodward part number 9903-561 for Fairbanks Morse Engine Emergency Diesel Generator (EDG).

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

Fairbanks Morse Engine  
701 White Avenue

IEP

General Information or Other (PAR)  
Beloit, WI 53511

Event # 43235

(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:

Per Woodward service bulletin 01393 dated January 2007, a pivot pin within the governor actuator was manufactured from incorrect material. The subsequent case hardening of the pivot pin made from incorrect material resulted in through hardening, making the pivot pin more brittle.

Safety hazard which could be created by such defect:

Per Woodward service bulletin 01393, a potential for pivot pin fracture exists which would result in the governor actuator going to the minimum fuel setting. The EDG would not be capable of carrying load under this condition.

The inability of an EDG to carry a load during a design basis event would be considered a loss of safety function.

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

Fairbanks Morse Engine received Woodward service bulletin 01393 on 1/11/07. Duane Arnold Energy Center was notified of this situation via e-mail dated 1/12/07.

(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.

The list of potentially affected governor actuators identified in Woodward service bulletin 01393 contains only 3 units (serial numbers 14693610, 14687576 and 14699005) that were purchased by Fairbanks Morse Engine on purchase order 1079037-I. All 3 units were sold to Duane Arnold Energy Center and had not been assembled to the EDGs.

(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 3 units were repaired at Woodward on 1/18/07 by replacing the though hardened pivot pin with one that was from a lot that was verified via destructive analysis to be hardened to the properly case depth. All future lots of pivot pins will have case depth measurements taken to ensure proper case depth.

(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 need for repair of the 3 units was communicated to Duane Arnold Energy Center on 1/12/07. The repaired governor actuators were returned to Duane Arnold Energy Center on 1/26/07.

\*\*\*\*\*



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Beloit, Wisconsin 53511  
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Dominic D. Dedolph  
Manager, Quality Assurance  
ASQ-CQM, CQE, CQA, CQT

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D. C. 20555

March 13, 2007

Subject: 10 CFR 21 NOTIFICATION - IDENTIFICATION OF DEFECT  
WOODWARD GOVERNOR PIVOT PIN DEFECT

Greetings,

Pursuant to 10 CFR 21.21 (d)(3)(ii), Fairbanks Morse Engine is submitting a written notification on the identification of a defect that is considered to be a substantial safety hazard.

There are two attachments to this letter. The FME Notification Report Serial Number 07-01 provides the information requested by 10 CFR 21.21 (d)(4). The Woodward service bulletin 01393 is attached as supporting documentation. Should there be any questions, please contact me at the phone number listed above or Ted Stevenson at 608-364-8424.

Sincerely,

A handwritten signature in cursive script that reads "Dominic Dedolph".

Dominic Dedolph  
Manager, Quality Assurance

Attachment

c: T. Stevenson  
J. Eves  
B. Schoenike  
A. Gioffredi

FME Notification Report Serial Number 07-01  
Fairbanks Morse Engine  
10CFR 21.21 (d)(3)(ii) Notification

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

Mr. Dominic D. 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:**

Duane Arnold Energy Center  
3277 Daec Road  
Palo IA 52324

**Basic component which fails to comply or contains a defect:**

Woodward governor actuator model EGB13P, part number 16403190, Woodward part number 9903-561 for Fairbanks Morse Engine Emergency Diesel Generator (EDG).

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

Fairbanks Morse Engine  
701 White Avenue  
Beloit, WI 53511

**(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:**

Per Woodward service bulletin 01393 dated January 2007 (enclosed), a pivot pin within the governor actuator was manufactured from incorrect material. The subsequent case

FME Notification Report Serial Number 07-01  
Fairbanks Morse Engine  
10CFR 21.21 (d)(3)(ii) Notification

hardening of the pivot pin made from incorrect material resulted in through hardening, making the pivot pin more brittle.

**Safety hazard which could be created by such defect:**

Per Woodward service bulletin 01393, a potential for pivot pin fracture exists which would result in the governor actuator going to the minimum fuel setting. The EDG would not be capable of carrying load under this condition.

The inability of an EDG to carry a load during a design basis event would be considered a loss of safety function.

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

Fairbanks Morse Engine received Woodward service bulletin 01393 on 1/11/07. Duane Arnold Energy Center was notified of this situation via e-mail dated 1/12/07.

**(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.**

The list of potentially affected governor actuators identified in Woodward service bulletin 01393 contains only 3 units (serial numbers 14693610, 14687576 and 14699005) that were purchased by Fairbanks Morse Engine on purchase order 1079037-I. All 3 units were sold to Duane Arnold Energy Center and had not been assembled to the EDGs.

**(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.**

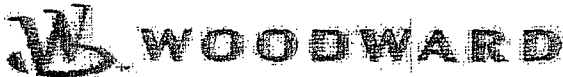
The 3 units were repaired at Woodward on 1/18/07 by replacing the through hardened pivot pin with one that was from a lot that was verified via destructive analysis to be hardened to the properly case

FME Notification Report Serial Number 07-01  
Fairbanks Morse Engine  
10CFR 21.21 (d)(3)(ii) Notification

depth. All future lots of pivot pins will have case depth measurements taken to ensure proper case depth.

**(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 need for repair of the 3 units was communicated to Duane Arnold Energy Center on 1/12/07. The repaired governor actuators were returned to Duane Arnold Energy Center on 1/26/07.



**SERVICE BULLETIN**

**EGB Actuator  
Pivot Pins with Incorrect Material**

January 2007


01393

|                          |  |
|--------------------------|--|
| <b>Issue</b>             | Some 375590 Pivot Pins were produced with incorrect material.  |
| <b>Description</b>       | <p>The 375590 Pivot Pins are normally produced with a case hardening steel. This allows for good wear with ductility. A limited number of Pivot Pins were produced with a through-hardening steel, resulting in a more brittle part. When assembled, over-tightening of mating parts can cause the Pivot Pin to fracture.</p> <p>This situation was identified in our assembly process on two EGB-10 type actuators after completing the internal zero droop adjustment. The internal zero droop adjustment is only set during initial actuator setup. While the issue has only been detected during assembly, there is a remote chance that the failure could occur during operation. As of the date of the release of this service bulletin, there have been no reports of this issue occurring on units in operation.</p> <p>If the Pivot Pin fractures while in operation, the actuator will go to its minimum fuel setting, causing the engine to shut down.</p> <p>Customers should evaluate the criticality of their application when making a determination on whether to return the component(s) and/or unit(s) to Woodward for replacement/repair.</p> |
| <b>Affected Units</b>    | Potentially affected units include component level items shipped as spare parts as well as completed actuators. See Affected Units listed below.   |
| <b>Corrective Action</b> | <p>Affected Pivot Pins shipped as spare parts can be returned to Woodward for replacement.</p> <p>Affected EGB actuators can be returned to Woodward for repair.</p>   |
| <b>Customer Action</b>   | <p>Non-conforming Pivot Pins will be replaced under warranty.</p> <ul style="list-style-type: none"> <li>Contact your Woodward customer service representative for a return authorization number (RAN) and return the part(s) or actuator(s) to Woodward.</li> </ul> <p>Please refer to this service bulletin number when scheduling your return.</p> <p>Service bulletin actions will be performed at no charge through 31 January 2008 or within the product warranty period.</p>  |

| Wp       | Card | Serial   | Order | Qty | Ship Date | Wholesale | SA | Order | Customer         | Invoice | Order |
|----------|------|----------|-------|-----|-----------|-----------|----|-------|------------------|---------|-------|
| 8241-820 |      | 14853821 |       | 1   | 10-Aug-06 | 2285447   |    |       | 10946C           |         |       |
| 8240-381 |      | 14745963 |       | 1   | 17-May-06 | 2238209   |    |       | 10585S           |         |       |
| 8241-943 |      | 14745965 |       | 1   | 17-May-06 | 2238209   |    |       | 10585S           |         |       |
| 8241-685 |      | 14682357 |       | 1   | 29-Mar-06 | 2217807   |    |       | 10401C           |         |       |
| 8241-814 |      | 14756816 |       | 1   | 30-May-06 | 2245706   |    |       | 10628C           |         |       |
| 8240-381 |      | 14850534 |       | 1   | 23-Dec-05 | 2109583   |    |       | WAP-218          |         |       |
| 8240-854 |      | 14815225 |       | 1   | 18-Jul-06 | 2238338   |    |       | 66000281         |         |       |
| 375590   |      | N/A      |       | 1   | 24-Feb-06 | 2213137   |    |       | 66000157         |         |       |
| 375590   |      | N/A      |       | 1   | 2-May-06  | 2252197   |    |       | 66000381         |         |       |
| 375590   |      | N/A      |       | 1   | 28-Apr-06 | 2250242   |    |       | 66000367         |         |       |
| 375590   |      | N/A      |       | 1   | 11-Apr-06 | 2239791   |    |       | 66000328         |         |       |
| 8242-125 |      | 14610237 |       | 1   | 18-Feb-06 | 2176469   |    |       | SRX-SBC70366     |         |       |
| 8240-381 |      | 14894362 |       | 1   | 18-Sep-06 | 2295191   |    |       | 706353           |         |       |
| 8240-381 |      | 14753772 |       | 1   | 24-May-06 | 2281935   |    |       | 706134           |         |       |
| 8241-878 |      | 14574275 |       | 1   | 11-Jan-06 | 2161418   |    |       | 5803X            |         |       |
| 8241-684 |      | 14944650 |       | 1   | 27-Oct-06 | 2303760   |    |       | 7056X            |         |       |
| 8240-790 |      | 14877111 |       | 1   | 30-Aug-06 | 2290861   |    |       | 6873X            |         |       |
| 8241-833 |      | 14904680 |       | 1   | 25-Sep-06 | 2323069   |    |       | 7282X            |         |       |
| 8241-810 |      | 14791993 |       | 1   | 28-Jun-06 | 2265499   |    |       | 06W-5241         |         |       |
| 8241-947 |      | 14745967 |       | 1   | 23-May-06 | 2229286   |    |       | 68357            |         |       |
| 8241-885 |      | 14723656 |       | 1   | 9-May-06  | 2219596   |    |       | 2872C            |         |       |
| 8241-885 |      | 14736136 |       | 1   | 9-May-06  | 2219596   |    |       | 2872C            |         |       |
| 8241-885 |      | 14736138 |       | 1   | 9-May-06  | 2219596   |    |       | 2872C            |         |       |
| 8241-855 |      | 14957257 |       | 1   | 3-Nov-06  | 2318777   |    |       | 10631-4          |         |       |
| 8241-955 |      | 14935472 |       | 1   | 19-Oct-06 | 2318777   |    |       | 10631-4          |         |       |
| 8242-126 |      | 14899007 |       | 1   | 17-Apr-06 | 2209853   |    |       | 10173-3          |         |       |
| 9903-581 |      | 14687576 |       | 1   | 12-Apr-06 | 2209101   |    |       | 1079037-I        |         |       |
| 9903-581 |      | 14683610 |       | 1   | 12-Apr-06 | 2209101   |    |       | 1079037-I        |         |       |
| 9903-581 |      | 14692005 |       | 1   | 12-Apr-06 | 2209101   |    |       | 1079037-I        |         |       |
| 8240-797 |      | 14800464 |       | 1   | 28-Jun-06 | 2276277   |    |       | 60617A           |         |       |
| 375590   |      | N/A      |       | 1   | 16-Dec-05 | 2175685   |    |       | 51207A           |         |       |
| 8240-381 |      | 14841732 |       | 1   | 4-Aug-06  | 1623548   |    |       | 5600024730       |         |       |
| 8240-381 |      | 14705785 |       | 1   | 19-Apr-06 | 1623548   |    |       | 5600024730       |         |       |
| 8240-381 |      | 14935566 |       | 1   | 27-Oct-06 | 2175700   |    |       | 164036           |         |       |
| 8240-381 |      | 14621145 |       | 1   | 20-Feb-06 | 2175700   |    |       | 164036           |         |       |
| 8240-381 |      | 14705893 |       | 1   | 19-Apr-06 | 1623548   |    |       | 5600024730       |         |       |
| 8240-381 |      | 14622706 |       | 1   | 20-Feb-06 | 2175700   |    |       | 164036           |         |       |
| 8240-381 |      | 14832834 |       | 1   | 4-Aug-06  | 1623548   |    |       | 5600024730       |         |       |
| 8240-381 |      | 14949064 |       | 1   | 27-Oct-06 | 2175700   |    |       | 164036           |         |       |
| 8240-381 |      | 14946801 |       | 1   | 27-Oct-06 | 2175700   |    |       | 164036           |         |       |
| 8240-381 |      | 14944649 |       | 1   | 27-Oct-06 | 2175700   |    |       | 164036           |         |       |
| 8241-843 |      | 14750395 |       | 1   | 22-May-06 | 1679211   |    |       | 5500002263       |         |       |
| 8240-381 |      | 14705891 |       | 1   | 19-Apr-06 | 1623548   |    |       | 5600024730       |         |       |
| 8240-381 |      | 14610236 |       | 1   | 20-Feb-06 | 2175700   |    |       | 164036           |         |       |
| 8241-914 |      | 14579258 |       | 1   | 13-Jan-06 | 2141442   |    |       | POS15388-C       |         |       |
| 8241-914 |      | 14637997 |       | 1   | 28-Feb-06 | 2199344   |    |       | POS15389-C       |         |       |
| 8241-914 |      | 14636137 |       | 1   | 28-Feb-06 | 2199344   |    |       | POS15389-C       |         |       |
| 8241-914 |      | 14636136 |       | 1   | 28-Feb-06 | 2199344   |    |       | POS15389-C       |         |       |
| 8241-914 |      | 14662808 |       | 1   | 17-Mar-06 | 2199344   |    |       | POS15389-C       |         |       |
| 9903-483 |      | 14853823 |       | 1   | 11-Aug-06 | 2278289   |    |       | 74690            |         |       |
| 9903-515 |      | 14960801 |       | 1   | 16-Mar-06 | 2196889   |    |       | 72164            |         |       |
| 9903-572 |      | 14960504 |       | 1   | 6-Nov-06  | 2311223   |    |       | 75623            |         |       |
| 9903-515 |      | 14653893 |       | 1   | 16-Mar-06 | 2196889   |    |       | 72164            |         |       |
| 8240-381 |      | 14771779 |       | 1   | 28-Jul-06 | 2284526   |    |       | 674009           |         |       |
| 8242-128 |      | 14815223 |       | 1   | 20-Jul-06 | 2243657   |    |       | POND02657        |         |       |
| 8241-886 |      | 14922808 |       | 1   | 17-Oct-06 | 2315404   |    |       | TL132/80425EX    |         |       |
| 375590   |      | N/A      |       | 5   | 13-Dec-05 | 2167321   |    |       | B-D50370         |         |       |
| 9900-529 |      | 14830338 |       | 1   | 25-Jul-06 | 2292754   |    |       | SPM7L5-06-M-1762 |         |       |
| 375590   |      | N/A      |       | 1   | 19-Apr-06 | 2238615   |    |       | 1496289          |         |       |
| 8240-788 |      | 14878465 |       | 1   | 30-Aug-06 | 2282796   |    |       | EGB200606H1846GV |         |       |



| Woodward Item Number | Sales Order Number | Qty | Ship Date | Woodward | Sales Order | Customer Purchase Order |
|----------------------|--------------------|-----|-----------|----------|-------------|-------------------------|
| 8241-855             | 14944651           | 1   | 24-Oct-06 | 2336922  |             | GE732C                  |
| 8241-926             | 14638861           | 1   | 7-Mar-06  | 2200302  |             | P288/144316             |
| 8241-946             | 14668604           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 8241-946             | 14668710           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 375590               | N/A                | 1   | 15-Mar-06 | 2218376  |             | P288/145506             |
| 8241-946             | 14662358           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 375590               | N/A                | 3   | 15-Sep-06 | 2320987  |             | P288/152103             |
| 375590               | N/A                | 1   | 22-Aug-06 | 2310340  |             | P288/151301             |
| 375590               | N/A                | 1   | 1-Aug-06  | 2294732  |             | P288/150433             |
| 375590               | N/A                | 1   | 30-Jun-06 | 2280220  |             | P288/149348             |
| 8242-127             | 14791995           | 1   | 30-Jun-06 | 2293803  |             | P288/146462             |
| 8241-928             | 14638862           | 1   | 7-Mar-06  | 2200302  |             | P288/144316             |
| 8241-883             | 14756815           | 1   | 30-May-06 | 2221142  |             | P288/145688             |
| 8241-946             | 14662362           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 375590               | N/A                | 1   | 11-May-06 | 2251415  |             | P288/147539             |
| 375590               | N/A                | 2   | 12-Apr-06 | 2233816  |             | P288/145510             |
| 8241-946             | 14666938           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 8241-883             | 14589406           | 1   | 19-Jan-06 | 2188888  |             | P288/143349             |
| 8241-946             | 14668802           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 8241-946             | 14652621           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 8241-946             | 14652623           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 8241-946             | 14652622           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 8241-946             | 14657378           | 1   | 30-Mar-06 | 2193943  |             | P288/143814             |
| 9903-517             | 14555665           | 1   | 14-Apr-06 | 2143994  |             | 41D0074585              |
| 9903-515             | 14571136           | 1   | 24-Jan-06 | 2149681  |             | BF079703/OR             |
| 9903-576             | 14574282           | 1   | 21-Feb-06 | 2159353  |             | 96580250                |
| 8241-799             | 14841731           | 1   | 23-Aug-06 | 2263995  |             | 3E1051:FB641803         |
| 8241-799             | 14622707           | 1   | 3-Mar-06  | 2178685  |             | 3L4062 31206662         |
| 8241-781             | 14951861           | 1   | 10-Nov-06 | 2323810  |             | 4J6924-B60007401        |
| 8241-781             | 14957267           | 1   | 28-Nov-06 | 2331921  |             | 4J7608-B60007401        |
| 8242-051             | 14991809           | 1   | 14-Dec-06 | 2324231  |             | 3362                    |
| 8241-804             | 14708431           | 1   | 24-May-06 | 2221608  |             | 2006/031013             |
| 8242-117             | 14576871           | 1   | 23-Feb-06 | 2103061  |             | 2005-0926ZC/W           |
| 375590               | N/A                | 1   | 5-May-06  | IP       |             | 43342556                |
| 375590               | N/A                | 1   | 26-Sep-06 | IP       |             | 44252159                |



## WOODWARD

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 Email and Website - [www.woodward.com](http://www.woodward.com)

Woodward has company-owned plants, subsidiaries, and branches,  
 as well as authorized distributors and other authorized service and sales facilities throughout the world.  
 Complete address / phone / fax / email information for all locations is available on our website.

2007/1/Fort Collins