General Information or Other (PAR)

Event #

43235

(CDT)

Rep Org: FAIRBANKS MORSE

Notification Date / Time: 03/14/2007 11:41

(EST)

Supplier: FAIRBANKS MORSE Event Date / Time: 03/13/2007 12:00

Last Modification: 03/14/2007

Region: 3

Docket #:

City: BELOIT

**Agreement State:** Yes

County:

State: WI

License #:

NRC Notified by: DOMINIC DEDOLPH

Notifications: RICHARD SKOKOWSKI

OMID TABATABAI

R3 NRR

**HQ Ops Officer:** JOHN MacKINNON **Emergency Class: NON EMERGENCY** 

10 CFR Section:

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

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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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,

Dominic Dedolph

Manager, Quality Assurance

Attachment

C:

T. Stevenson

J. Eves

B. Schoenike

A. Gioffredi

an EnPro Industries company

Page 1 Of 1

p.2

# 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

Page 1 of 3

# 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 though 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

# Description

ssue

Some 375590 Pivot Pins were produced with incorrect material.

The 375590 Pivot Pins are normally produced with a case hardening steet. 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.

This situation was identified in our assembly process on two EGB-10 type actualors 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 fallure could occur during operation. As of the date of the release of this service builletin, there have been no reports of this issue occurring on units in operation.

If the Pivot Pin fractures while in operation, the actuator will go to its minimum fuel setting, causing the engine to shut down.

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.

## Affected Units

Potentially affected units include component level Items shipped as spare parts as well as completed actuators. See Affected Units listed below.

#### Corrective Action

Affected Pivot Pins shipped as spare parts can be returned to Woodward for replacement.

Affected EGB actuators can be returned to Woodward for repair.

#### **Customer Action**

Non-conforming Pivot Pins will be replaced under warranty.

 Contact your Woodward customer service representative for a return authorization number (RAN) and return the part(s) or actuator(s) to Woodward.

Please refer to this service bulletin number when scheduling your return.

Service bulletin actions will be performed at no charge through 31.

January 2008 or within the product warranty period.

Page 1 of 3

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8240-381         14944649         1 27-0cl-06         2175700         184036           8241-943         14750395         1 22-May-06         1679211         5500002263           8240-381         14705891         1 19-Apr-06         1623548         5600024730           8240-381         14610236         1 20-Fab-06         2175700         164036           8241-914         14579258         1 13-Jan-06         2143442         POS13885-C           8241-914         14637997         1 28-Fab-06         2199344         POS15389-C           8241-914         14636137         1 28-Fab-06         2199344         POS15389-C           8241-914         14636136         1 28-Fab-06         2199344         POS15389-C           8241-914         14662608         1 17-Mar-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         14660801         1 16-Mar-06         2196889         72164           9903-572         14960504         1 6-Nov-06         234526         674009           8242-128         14875223         1 20-J						
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8240-381         14705891         1 19-Apr-06         1623548         5860024730           8240-381         14610236         1 20-Feb-06         2175700         154036           8241-914         14579258         1 13-Jan-06         2141442         POS13885-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           8241-914         14863823         1 11-Aug-06         2278289         74660           9903-483         14853823         1 11-Aug-06         2278289         74660           9903-575         14960504         1 6-Noi-06         2196889         72164           9903-572         14960504         1 6-Noi-06         2311223         75623           9903-515         14653993         1 16-Mar-06         2196889         72164           8240-381         14771779         1 28-Jun-06         2248557         PON002657           8241-866         14922808         1 17-0c1-06 <td>f</td> <td></td> <td></td> <td></td> <td></td> <td></td>	f					
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6241-914         14636137         1         28-Feb-06         2199344         POS15389-C           6241-914         14636136         1         28-Feb-06         2199344         POS15389-C           6241-914         14662808         1         17-Misr-06         2199344         POS15389-C           9903-453         14853823         1         11-Aug-06         2278289         74690           9803-515         14660801         1         16-Mar-06         2196889         72164           9903-572         14960504         1         6-Nov-06         23#1223         75623           9903-515         14653993         1         16-Mar-06         2196889         72164           8240-381         14771779         1         28-Juri-06         2264526         674009           8241-866         14922808         1         17-Oct-06         2315404         TL132/60425EX           375590         N/A         5         13-Dec-05         2167321         B-050370           9900-529         14830338         1         25-Jul-06         2238615         1496269						
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8241-914         14662808         1         17-Mar-06         2199344         POS15389-C           9903-463         14853823         1         11-Aug-06         2278289         74690           9903-515         14660801         1         16-Mar-06         2196889         72164           9903-572         14960504         1         6-Nov-06         23#1223         75623           9903-515         14653993         1         16-Mar-06         2196889         72164           8240-381         14771779         1         28-Juri-06         2264526         674009           8242-128         14815223         1         20-Jul-06         2243657         PON002657           8241-866         14922808         1         17-Qct-06         2315404         TL132/60425EX           375590         N/A         5         13-Dec-05         2167321         B-050370           9900-529         14830338         1         25-Jul-06         2292754         SPM7L5-064M-1762           375590         N/A         1         19-Apr-06         2238615         1496269					The state of the s	
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9903-515         14660801         1 16-Mar-06 2196889         72:64           9903-572         14960504         1 6-Nov-06 23#1223         75623           9903-515         14653993         1 16-Mar-06 2196889         72:164           8240-381         14771779         1 28-Juri-06 2264526         674009           8242-128         14815223         1 20-Jul-06 2243657         PON002657           8241-866         14922808         1 17-0ct-06 2315404         TL132/60425EX           375590         N/A         5 13-Dec-05 2167321         B-050370           9900-529         14830338         1 25-Jul-06 2238615         SPM7L5-064M-1762           375590         N/A         1 19-Apr-06 2238615         1496269	<del></del>					· · · · · · · · · · · · · · · · · · ·
9903-572			_			<u></u>
9903-515						
B240-381         14771779         1 28-Jun-06         2264526         674009           B242-128         14815223         1 20-Jul-06         2243657         PON002657           B241-866         14922808         1 17-0cl-06         2315404         TL132/60425EX           375590         N/A         5 13-Dec-05         2167321         B-050370           9900-529         14830338         1 25-Jul-06         2292754         SPM7L5-06-M-1762           375590         N/A         1 19-Apr-06         2238615         1496269						
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8240-786   14878465   1   30-Aug-06   2282796   EG8200506H1845GV	0240-180	146/6465	7	SU-RUD-U6	TX07190	EGBZUU6U6HTB46GV

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					CHEROMON PUR BASA CHORT
Transmitted from Name		e en	Shiploste	Woodway SalesiOrps	SELECTION PURCHASE CINOT
8241- <b>85</b> 5	14944651		24-Oct-06	12336922	GE782C
8241-926	14638861		7-Mar-06	2200302	P288/144316
8241-946	14658604	1 :		2193943	P288/143814
8241-946	14669710	17	30-Mar-06	2193943	P288/143814
375590	N/A	1		2218376	P288/145506
8241-946	14682358	11		2193943	P288/143814
375590	N/A	3	15-Sep-06	2320997	P288/152103
375590	AN/A	1	22-Aug-06	2370340	P288/151301
375590	N/A	1	1-Aug-06	2294732	P288/150433
376590	N/A	1 1	30-Jun-06	2280220	P288/149348
8242-127	14791995	1 7	30-Jun-06	2233803	p288/146462
8241-926	14638862	न	7-Mar-06	2200302	P288/144316
8241-683	14756815	1	30-May-06	2221142	P288/145688
8241-946	14682362	1	30-Mar-06	2193943	P288/143814
375590	N/A	1	11-May-06	2261415	P288/147539
375590	N/A	2	12-Apr-06	2233816	P288/146510
8241-946	14566938	1	30-Mar-06	2193943	P268/143814
8241-683	14589408	1 1	19-Jan-06	2188886	P288/143349
8241-946	14860802	1.1.	30-Mar-06	2193943	P288/143814
8241-946	14652621	1	30-Mar-06	2193943	PZ88/143814
8241-946	14652623	1.	30-Mar-06	2198943	P288/143814
B241-946	14652622	1	30-Mar-06	2193943	P288/143614
8241-945	14657378	1	30-Mar-06	2193943	P288/143814
9903-517	14555565	.1.1	14-Apr-06	2143994	4100074585
9903-515	14571136	1	24-Jan-06	2149681	BF079703/OR
9903-576	14574282	1	21-Feb-06	2153353	96580250
8241-799	14841781		23-Aug-06	2263995	3E1051 FB641803
8241-799	14622707	1	3-Mar-06	2178685	3L4062 31206662
8241-781	14951881	1	10-Nov-06	2323910	4J6924 B60007401
8241-781	14957267	1	28-Nov-06	2331921	4J7608-B60007401
8242-051	14991809	1 1	14 Dec-05		3362
8241-804	14708431	1	24-Way-06		2006/031013
8242-117	14576871	1	23-Feb-06		2005-0926ZCAV
375590	N/A		5-May-05	IP	43342556
375590	IN/A	19	28 Sep 06:	IP .	44252159



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