

General Information or Other (PAR)

Event # 45335

Rep Org: ENGINE SYSTEMS, INC	Notification Date / Time: 09/09/2009 14:50 (EDT)
Supplier: ENGINE SYSTEMS, INC	Event Date / Time: 08/14/2009 (EDT)
	Last Modification: 09/09/2009
Region: 1	Docket #:
City: ROCKY MOUNT	Agreement State: Yes
County:	License #:
State: NC	
NRC Notified by: PAUL STEPANTSCHENK	Notifications: ALAN BLAMEY R2DO
HQ Ops Officer: STEVE SANDIN	DAVID PROULX R4DO
Emergency Class: NON EMERGENCY	PART 21 COORDINATOR NRR
10 CFR Section:	
21.21 UNSPECIFIED PARAGRAPH	

PART 21 INVOLVING WOODWARD GOVERNORS USING UNAPPROVED SUPPLIER INTEGRATED CIRCUITS

The following information was provided via fax:

"COMPONENT: Woodward 2301A and DRU with unapproved supplier IC P/N: 9903-303, 9903-337, 9903-444 & 9903-470

"DISCUSSION: Engine Systems Inc. (ESI) began a 10CFR21 evaluation on 8/14/09 to evaluate the use of an integrated circuit (IC) used in some 2301A and DRU controls. The suspect IC was obtained by Woodward from an unapproved supplier. The evaluation was concluded on 09/08/09 and was determined to be a reportable defect as defined by 10CFR21.

"On 8/14/09, Woodward confirmed that they had shipped ESI a total of thirty-four (34) 2301A and DRU controls with nuclear part numbers that contained an IC (Woodward P/N 1688-767) from a suspect lot. The lot was dated 12/12/08 and was received by Woodward from an unapproved supplier. Eight (8) of the 34 controls were subsequently shipped by ESI to nuclear customers (2 domestic plants and 3 foreign plants) before the issue was identified. To date, no operability issues have been reported or observed with 2301A and DRU controls containing the suspect IC.

"In the DRU, the IC is used in the raise-lower circuit and in the ramp time circuit (the ramp time circuit controls the ramp rate of the DRU). The DRU is primarily used as the speed reference input signal to the 2301A and provides remote speed adjustment for the 2301A (similar to the function of a motor operated potentiometer - MOP). In some applications, the DRU has also been used as a replacement for the voltage regulator MOP; in this case, the DRU provides the voltage adjustment signal to the voltage regulator. Failure of this IC could impact speed (frequency) control (and in some cases voltage control) of the EDG.

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"In the 2301A, the IC is used in the start fuel limit circuit and in the speed signal input (magnetic pickup) circuit. The 2301A is the electronic governor used on many EDG's. It provides speed and/or load control of the diesel engine by communicating with the governor/actuator mounted on the diesel engine. Failure of this IC could impact speed (frequency) control of the EDG.

"AFFECTED USERS: Thirty-four (34) controls were shipped to ESI containing IC's from the suspect lot. Twenty-six (26) of the suspect controls were in ESI inventory and have been returned to Woodward to have the suspect IC replaced. ESI shipped eight (8) controls with suspect IC's to nuclear customers as safety related items as identified in the tables below.

"LISTING OF WOODWARD CONTROLS SHIPPED WITH SUSPECT IC's - (DOMESTIC PLANTS)

McGuire - P/N # 9903-337, Customer PO # 00114776
Paio Verde - P/N # 9903-470 and # 9903-444, Customer PO # 500529186

"LISTING OF WOODWARD CONTROLS SHIPPED WITH SUSPECT IC's - (FOREIGN PLANTS)

Korea-KHNP - P/N # 9903-470, Customer PO # K080553241
Almaraz - P/N # 9903-470 and # 9903-337, Customer PO # 2009/015 - ER09AT06805MA
KRSKO - P/N # 9903-303, Customer PO # NEK-10271/309

"CORRECTIVE ACTION: The controls listed in the tables above should be returned to Engine Systems Inc. to have the suspect IC replaced as soon as possible. Contact ESI's Customer Service department with the part number and serial number of the control to be returned.

**ENGINE SYSTEMS, INC.**1220 S. Washington St., Rocky Mount, NC 27801
P.O. Box 1928, Rocky Mount, NC 27802-1928Telephone: 252/977-2720
Fax: 252/446-1134**TELEFAX**

Date: September 9, 2009
Company: NRC Operations Center
Fax Number: 301/816-5151
Verification No.: 301/816-5100
Reference: Report No. 10CFR21-0097, Rev. 0
From: Paul Stepantschenko
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Dear Sir:

Following this cover is a copy of our report 10CFR21-0097, Rev.0, for a 10CFR21 reportable notification about a Woodward 2301A and DRU with unapproved supplier IC, P/N: 9903-303, 9903-337, 9903-444 and 9903-470.

A copy of this report is also being mailed to the NRC Document Control Desk and to our affected nuclear customers.

Should you have questions, please let us know.

Sincerely,

ENGINE SYSTEMS, INC.

A handwritten signature in black ink, appearing to read 'Paul Stepantschenko', written in a cursive style.

Paul Stepantschenko
Quality Assurance Manager



ENGINE SYSTEMS, INC.

175 Freight Road, Rocky Mount, NC 27804

Telephone: 252/977-2720

Fax: 252/446-1134

Report No. 10CFR21-0097

Rev. 0: 09/09/09

**10CFR21 REPORTING OF DEFECTS
AND NON-COMPLIANCE**

COMPONENT: Woodward 2301A and DRU with unapproved supplier IC
P/N: 9903-303, 9903-337, 9903-444 & 9903-470

SYSTEM: Emergency Diesel Generator – governor system

CONCLUSION: Reportable in accordance with 10CFR21.

Prepared By: *[Signature]*
Engineering Manager

Date: 9/9/09

Reviewed By: *[Signature]*
Quality Assurance Manager

Date: 9/9/09

Report No. 10CFR21-0097

Record of Revisions
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REV	DATE	PAGE	DESCRIPTION
0	09/09/09		Initial issue.

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COMPONENT:

Woodward 2301A and DRU with unapproved supplier IC
P/N: 9903-303, 9903-337, 9903-444 & 9903-470

DISCUSSION:

Engine Systems Inc. (ESI) began a 10CFR21 evaluation on 8/14/09 to evaluate the use of an integrated circuit (IC) used in some 2301A and DRU controls. The suspect IC was obtained by Woodward from an unapproved supplier. The evaluation was concluded on 09/08/09 and was determined to be a reportable defect as defined by 10CFR21.

On 8/14/09, Woodward confirmed that they had shipped ESI a total of thirty-four (34) 2301A and DRU controls with nuclear part numbers that contained an IC (Woodward P/N 1688-767) from a suspect lot. The lot was dated 12/12/08 and was received by Woodward from an unapproved supplier. Eight (8) of the 34 controls were subsequently shipped by ESI to nuclear customers (2 domestic plants and 3 foreign plants) before the issue was identified. To date, no operability issues have been reported or observed with 2301A and DRU controls containing the suspect IC.

In the DRU, the IC is used in the raise-lower circuit and in the ramp time circuit (the ramp time circuit controls the ramp rate of the DRU). The DRU is primarily used as the speed reference input signal to the 2301A and provides remote speed adjustment for the 2301A (similar to the function of a motor operated potentiometer – MOP). In some applications, the DRU has also been used as a replacement for the voltage regulator MOP; in this case, the DRU provides the voltage adjustment signal to the voltage regulator. Failure of this IC could impact speed (frequency) control (and in some cases voltage control) of the EDG.

In the 2301A, the IC is used in the start fuel limit circuit and in the speed signal input (magnetic pickup) circuit. The 2301A is the electronic governor used on many EDG's. It provides speed and/or load control of the diesel engine by communicating with the governor/actuator mounted on the diesel engine. Failure of this IC could impact speed (frequency) control of the EDG.

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AFFECTED USERS:

Thirty-four (34) controls were shipped to ESI containing IC's from the suspect lot. Twenty-six (26) of the suspect controls were in ESI inventory and have been returned to Woodward to have the suspect IC replaced. ESI shipped eight (8) controls with suspect IC's to nuclear customers as safety related items as identified in the tables below.

***LISTING OF WOODWARD CONTROLS SHIPPED WITH SUSPECT IC's
(DOMESTIC PLANTS)***

Part Number	Type	Woodward S/N	ESI Sales Order	ESI Ship Date	Customer	Customer Purchase Order
9903-337	2301A	16466280	3005430	5/19/2009	McGuire	00114776
9903-470	DRU	16517000	3005474	5/14/2009	Palo-Verde	500529186
9903-470	DRU	16519303	3005474	5/14/2009	Palo-Verde	500529186
9903-444	2301A	16614277	3005474	8/12/2009	Palo-Verde	500529186

***LISTING OF WOODWARD CONTROLS SHIPPED WITH SUSPECT IC's
(FOREIGN PLANTS)***

Part Number	Type	Woodward S/N	ESI Sales Order	ESI Ship Date	Customer	Customer Purchase Order
9903-470	DRU	16470403	3005479	7/30/2009	Korea-KHNP	K080553241
9903-470	DRU	16487942	3005458	6/30/2009	Almaraz	2009/015 ER09AT06805MA
9903-337	2301A	16467615	3005458	6/30/2009	Almaraz	2009/015 ER09AT06805MA
9903-303	2301A	16529294	3005621	6/08/2009	KRSKO	NEK-10271/309

CORRECTIVE ACTION:

The controls listed in the tables above should be returned to Engine Systems Inc. to have the suspect IC replaced as soon as possible. Contact ESI's Customer Service department with the part number and serial number of the control to be returned.