



ENGINE SYSTEMS, INC.

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February 23, 2012

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Subject: 10CFR21 Reporting of Defects and Non-Compliance -
Engine Systems, Inc. Report No. 10CFR21-0105, Rev. 1

Subcover Assembly, P/N 1A-7846

Dear Sir:

The enclosed report addresses a reportable notification on a Transamerica Delaval /
Enterprise emergency diesel generator subcover assembly, P/N 1A-7846.

A copy of the report has been mailed to our affected nuclear customers.

Please sign below, acknowledging receipt of this report, and return a copy to the
attention of Document Control at the address above (or, fax to number 252/446-1134)
within 10 working days after receipt.

Yours very truly,

ENGINE SYSTEMS, INC.

Susan Woolard
Document Control

**Please let us know if ANY of your mailing information changes - name of recipient, name
of company/facility, address, etc. Mark the changes on this acknowledgment form and
send to us by mail or FAX to the number above.**

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RECEIVED: _____

DATE: _____

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Report No. 10CFR21-0105

Rev. 0: 02/22/12

Rev. 1: 02/23/12

10CFR21 REPORTING OF DEFECTS AND NON-COMPLIANCE

COMPONENT: Subcover Assembly, P/N 1A-7846

SYSTEM: Emergency Diesel Generator

CONCLUSION: Reportable in Accordance With 10CFR21

Prepared By: *Joe Linn*
Dedication Engineering Supervisor

Date: 2/23/12

Approved By: *Joe Linn (FOR D.G.)*
Engineering Manager

Date: 2/23/12

Reviewed By: *Thomas Webb*
Quality Assurance Manager

Date: 2-23-12

REV	DATE	PAGE	DESCRIPTION
0	02/22/12		Initial issue.
1	02/23/12	3	Previous revision listed customer PO numbers in incorrect order. Corrected this typographical error so that the customer PO numbers correspond to the correct ESI job number.

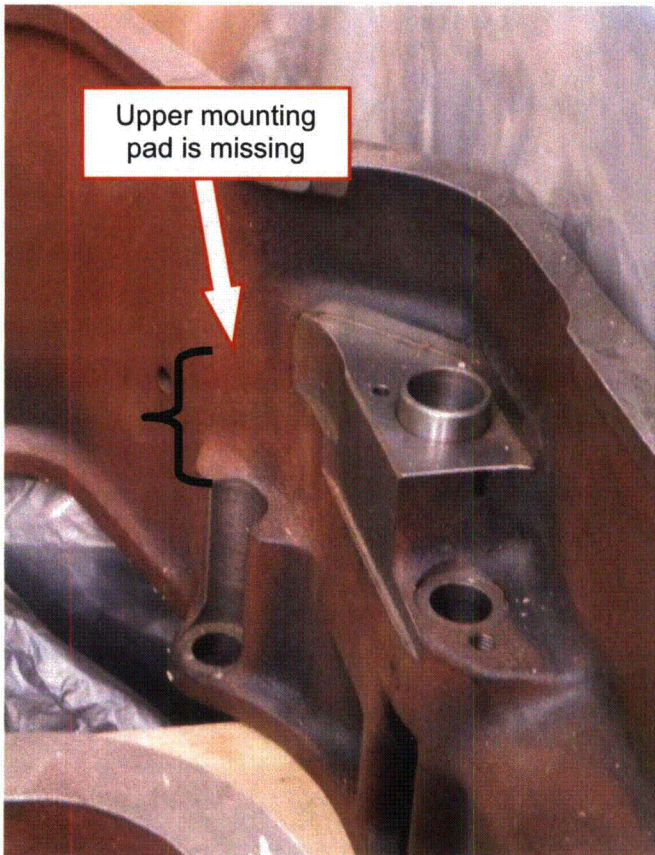
COMPONENT:

Subcover assembly, P/N 1A-7846.

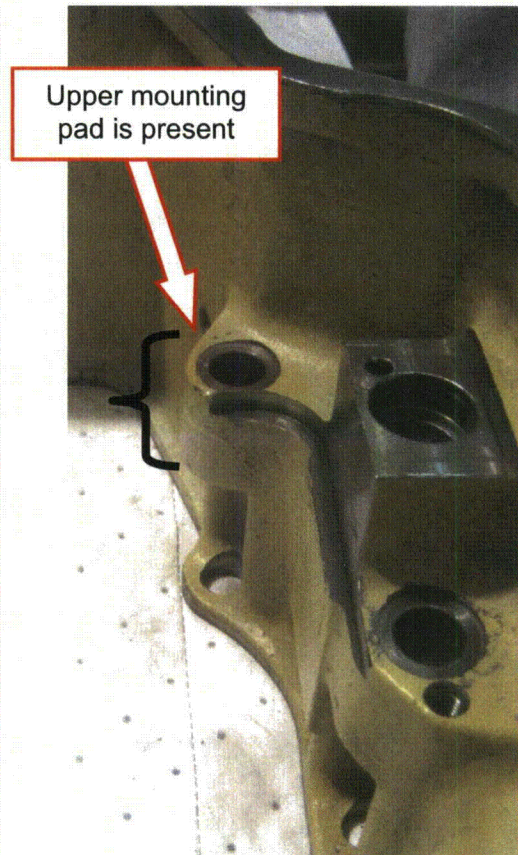
SUMMARY:

Engine Systems Inc. (ESI) began a 10CFR21 evaluation on 12/20/11 upon notification of an issue with four subcover assemblies at Perry Nuclear Plant. It was reported that Perry was performing a maintenance activity whereby they were replacing four cylinder head subcover assemblies on their Enterprise diesel engine. During installation, it was noted that qty 2 of the 11 bolt holes were missing an upper mounting pad. This was visually apparent once the customer attempted to install the bolts, which have a 6" length. The two areas missing the upper landing pad did not have an area for the underside of the bolt head to rest upon. See photos 1 and 2 below showing an incorrect vs. correct subcover.

The evaluation was concluded on 02/17/12 and it was determined that this issue is a reportable defect as defined by 10CFR21.



**Photo 1: Subcover Returned by Perry
(Incorrect)**



**Photo 2: Previously Installed Subcover
(Correct)**

Figure 1 and photo 3 below show the positions within the subcover where the pads are missing.

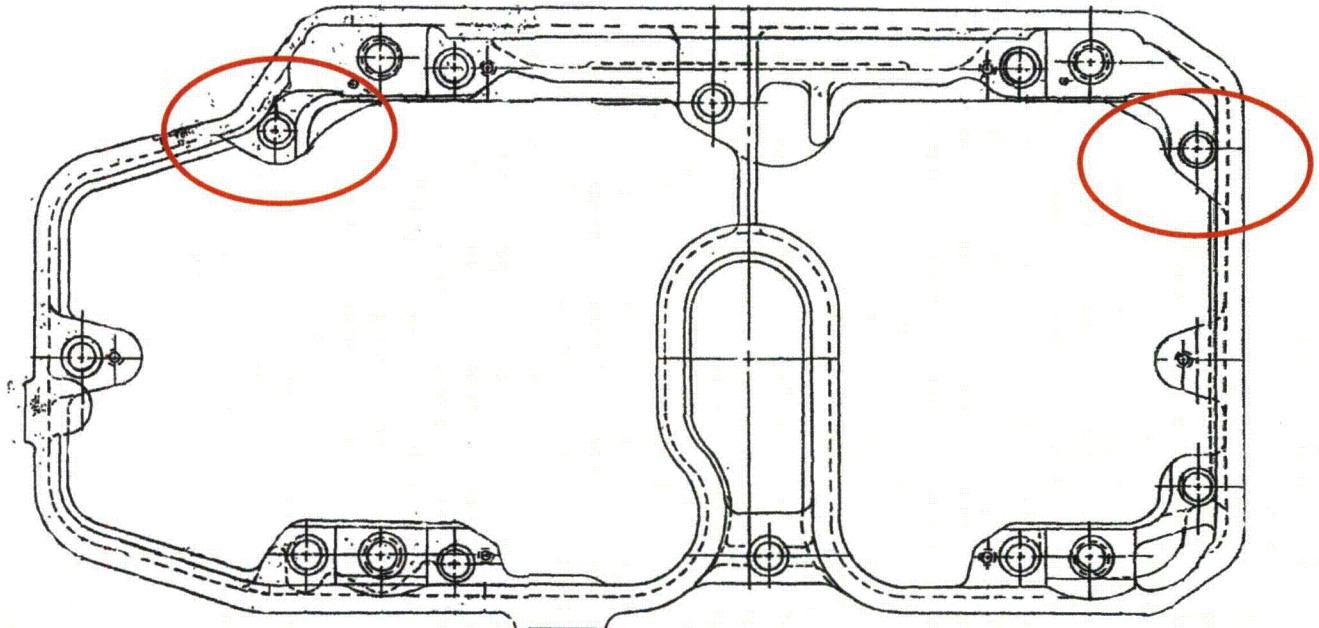


Figure 1: Overhead View of Subcover

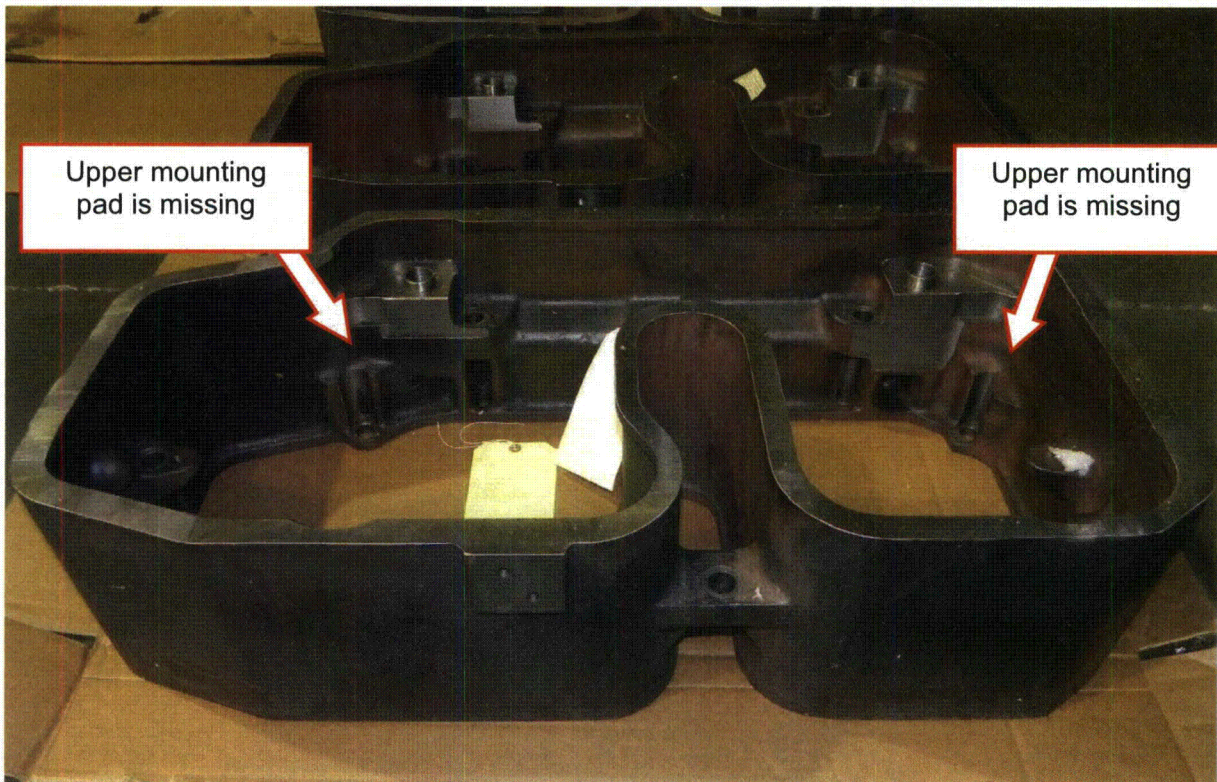


Photo 3: Locations of Missing Landing Pads

DISCUSSION:

Lack of the mounting pads alone will not result in a failure, however if a customer attempts to install the subcover without recognizing the missing material, there is the possibility that two of the eleven hold down bolts will provide no clamping function. This may result in loosening of the subcover mounting which could allow the cover to separate from the cylinder head.

The subcover is a device that is fastened to the top of the cylinder head and provides support for the rocker arms and rocker shafts and encloses the valve stem area. There is one subcover per cylinder head and thus for a model DSRV-16-4 Enterprise engine there are 16 subcovers. Failure of a subcover would impact the ability of either of the corresponding rocker arms to provide the mechanical force to actuate the intake and exhaust valves. Without valve actuation, that particular power assembly would be unable to generate power which would reduce the output of the emergency diesel generator (EDG). Failure of the EDG to produce its nameplate rated power could prevent the safe shutdown of the nuclear power plant during an emergency situation.

AFFECTED USERS AND SHIPMENTS:

ESI has supplied subcovers with the incorrect mounting pad to the following customers:

Description	ESI Job Number	Customer	Customer PO Number	Qty	ESI Certification Date
Subcover 1A-7846	102126	Korea - Yonggwang	NYG1-02M0007-550	2	April 2003
	3001279	Korea - Yonggwang	Y050089101	2	July 2005
	3006073	Perry	45307431	4 ⁽¹⁾	October 2011
	3006881	Korea - Yonggwang	Y090528171	1	November 2011

Note (1): These are the four subcovers returned by Perry that are the subject of this evaluation.

CORRECTIVE ACTIONS:

Customers may elect to justify use of a shorter bolt to facilitate installation of in-stock covers. Otherwise it is ESI's recommendation that customers return the subcovers for replacement.

The root cause analysis determined that the cause of this issue was that the pattern for the casting is missing the portions that would ultimately form this upper mounting pad. In addition, the machining drawing was unclear in showing these locations. As a result, ESI's inspections did not specifically check for these locations and the non-conforming subcovers were shipped to the customer.

The pattern is now being corrected to ensure the presence of the upper mounting pads. Also, ESI's dedication report is being revised to add specific checks to inspect for the presence of these pads. This will be completed prior to any future shipments of this item.