



## ENGINE SYSTEMS, INC.

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January 25, 2019

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. 10CFR21-0124-INT, Rev. 0

Saturable Reactor (Magnetic Amplifier) for Vickers Voltage  
Regulator System, P/N 8408218-ESI

Dear Sir:

The enclosed report addresses an on-going evaluation regarding a saturable reactor (magnetic amplifier) for Vickers voltage regulator system, P/N 8408218-ESI. The evaluation is expected to be completed no later than March 22, 2019.

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 Coordinator

IE19  
NRR

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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DATE: \_\_\_\_\_



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**Report No. 10CFR21-0124-INT**

**Rev. 0: 01/24/19**

### INTERIM REPORT 10CFR21 REPORTING OF DEFECTS AND NON-COMPLIANCE

**COMPONENT:** Saturable reactor (magnetic amplifier) for Vickers voltage regulator system  
P/N 8408218-ESI

**SYSTEM:** Emergency Diesel Generator – voltage regulator system

**CONCLUSION:** Not yet completed

Prepared By: \_\_\_\_\_

*Jim Lin*

Engineering Manager

Date: \_\_\_\_\_

*1/24/19*

Reviewed By: \_\_\_\_\_

*Dan Roberts*

Quality Assurance Manager

Date: \_\_\_\_\_

*1/24/19*

REV	DATE	PAGE	DESCRIPTION
0	01/24/19		Initial issue.

**COMPONENT:**

Saturable reactor; P/N 8408218-ESI

**PURPOSE:**

This interim report is issued because Engine Systems, Inc. (ESI) has not able to complete an evaluation of an identified deviation within the 60-day requirement of 10CFR21.21. The evaluation is expected to be completed no later than March 22, 2019.

**SUMMARY:**

ESI was notified on December 6, 2018 of a potential issue with saturable reactors (also referred to as magnetic amplifiers) supplied to Monticello Nuclear Generating Plant. ESI provided the reactors as like-for-like replacements for the existing magnetics of the original Vickers voltage regulator and static exciter. During system testing performed by Monticello at another vendor facility, issues with the static excitation system were identified which prevented proper control of the generator field current. Troubleshooting identified several potential causes and ESI believes there may be a potential deficiency in the saturable reactor, P/N 8408218-ESI.

This component is integral to operability of the Vickers style voltage regulator and static exciter systems used on many emergency diesel generator sets in the nuclear industry. A deficiency in the reactor would adversely affect the ability to control generator output voltage and therefore adversely affect emergency diesel generator set performance.

ESI is in the process of performing additional testing and analysis at the transformer manufacturer's facility to determine if a deficiency exists in this component. ESI is unable to complete an evaluation within the 60-day requirement.

**EXTENT OF CONDITION / INTERIM CONTAINMENT**

ESI has supplied the reactor to the customers listed below. To ESI's knowledge, none of the components have been installed. In conjunction with submittal of this interim Part 21 report, ESI is notifying each of the customers and advising not to install the reactors until the evaluation is complete. ESI will also withhold shipment of any reactors until the evaluation is complete.

Part Number	Description	Customer	Customer PO#	Qty	ESI Order	C-of-C Date
8408218-ESI	Saturable Reactor	Dominion Virginia Power – Surry Power Station	45936798	6	3010193	7/31/2013
		Florida Power & Light – Turkey Point	02313521/00013	1	3010993	10/18/2013
		Florida Power & Light – Turkey Point	02318321/00032	5	3012629	4/30/2014 (qty 3) 8/1/2014 (qty 2)
		Northern States Power - Monticello	4000002229	18	8002765	7/30/2018