



December 16, 2015

NG-15-0335  
10 CFR 50.73

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555-0001

Duane Arnold Energy Center  
Docket 50-331  
Renewed Op. License No. DPR-49

Licensee Event Report #2015-005

Please find attached the subject report submitted in accordance with 10 CFR 50.73. This letter makes no new commitments or changes to any existing commitments.

A handwritten signature in black ink that reads "Steven P. Brown". The signature is fluid and cursive.

*FW* T. A. Vehec  
Vice President, Duane Arnold Energy Center  
NextEra Energy Duane Arnold, LLC

cc: Administrator, Region III, USNRC  
Project Manager, DAEC, USNRC  
Resident Inspector, DAEC, USNRC

Handwritten initials in black ink. The top part reads "TEA" and the bottom part reads "NRC".



**LICENSEE EVENT REPORT (LER)**  
(See Page 2 for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>1. FACILITY NAME</b> Duane Arnold Energy Center	<b>2. DOCKET NUMBER</b> 05000-331	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Automatic Start of Both Emergency Diesel Generators Due to Lightning Strike

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	20	2015	2015	005	00	12	16	2015	N/A	N/A
									N/A	N/A

**9. OPERATING MODE**      **11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)**

1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
100%	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

<b>LICENSEE CONTACT</b> Tracy J. Weaver, Senior Licensing Engineer	<b>TELEPHONE NUMBER (Include Area Code)</b> (319) 851-7250
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b> MONTH:      DAY:      YEAR:
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**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)**

On October 20, 2015 at 1800, while operating at 100% power, a voltage transient due to a lightning strike resulted in an automatic start of both of the site's Emergency Diesel Generators (EDGs) (IEE Code EK). Neither EDG loaded onto its respective essential bus, as offsite power remained available. The 'A' EDG was secured at 1930 on October 20, 2015. The 'B' EDG was secured at 1947 on October 20, 2015. This resulted in an 8 hour reportable event. The Resident Inspector was notified, and Event Notification Number 51484 was made pursuant to 10 CFR 50.72(b)(3)(iv)(A) due to a valid system actuation.

The apparent cause of the starting of both EDGs was a storm-induced voltage dip (fault). This event did not result in a safety system functional failure. There were no radiological releases associated with this event.



**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE		
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**NARRATIVE**

**I. Description of Event:**

On October 20, 2015 at 1800, while operating at 100% power, a voltage transient due to a lightning strike resulted in an automatic start of both of the site's Emergency Diesel Generators (EDGs) (IEE Code EK). Neither EDG loaded onto its respective essential bus. The EDGs started as a result of a dip in essential bus voltage to 62% that did not fully recover for approximately 24 cycles. A review of the system design showed that since the EDGs started on an automatic start signal of essential bus voltage less than 65% for greater than 12 cycles, the EDGs operated as designed. The 'A' EDG was secured at 1930 on October 20, 2015. The 'B' EDG was secured at 1947 on October 20, 2015.

There were no radiological releases associated with this event. There were no other structures, systems or components inoperable at the start of this event that contributed to the event.

**II. Assessment of Safety Consequences:**

The automatic starting of the EDGs in response to a short-duration under voltage condition had no personnel or radiological safety significance. Since the EDGs were capable of fulfilling their safety function throughout this event, there was no nuclear safety significance.

This event resulted in an 8 hour reportable event. The Resident Inspector was notified, and Event Notification Number 51484 was made pursuant to 10 CFR 50.72(b)(3)(iv)(A) due to a valid system actuation. This event did not result in a safety system functional failure. There were no automatically or manually initiated safety system responses.

**III. Cause of Event:**

An Apparent Cause Evaluation was completed. The apparent cause of the starting of both EDGs was a storm-induced voltage dip (fault) that was not appropriately mitigated by the Transmission Operator's 900MHZ radio trip signal. A review of the system design showed that since the EDGs started on an automatic start signal of essential bus voltage less than 65% for greater than 12 cycles, the EDGs operated as designed.

**IV. Corrective Actions:**

The 'A' EDG was secured at 1930 on October 20, 2015. The 'B' EDG was secured at 1947 on October 20, 2015.

Actions have been initiated by the local balancing authority and the Transmission Operator to replace the 900MHZ radio path with fiber optic cable to prevent an electrical storm from blocking the signal path.

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**NARRATIVE**

**V. Additional Information:**

Previous Similar Occurrences:

A review of DAEC Licensee Event Reports from the past 5 years identified one similar occurrence. Reference LER 2014-005, "Automatic Start of Standby Diesel Generators Due to Grid Disturbance".

EIS System and Component Codes:

EK – Emergency Onsite Power Supply System

Reporting Requirements:

This event is being reported due to a valid system actuation, 10CFR50.73(a)(2)(iv)(A).