



February 18, 2014

L-2014-047
10 CFR 50.73

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

Re: St. Lucie Unit 2
Docket No. 50-389
Reportable Event: 2013-005-00
Date of Event: December 19, 2013

Unanalyzed Condition Affecting Emergency Diesel Generators

The attached Licensee Event Report 2013-005-00 is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Joe Jensen', with the word '(ACTING)' written in parentheses to the right of the signature.

Joseph N. Jensen
Site Vice President
St. Lucie Plant

JJ/rcs
Attachment

JE22
NRR

NRC FORM 366 (02-2014)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB: NO. 3150-0104		EXPIRES: 1/31/2017			
		LICENSEE EVENT REPORT (LER)			<small>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 infocollections.resourse@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.</small>					
1. FACILITY NAME St. Lucie Unit 2				2. DOCKET NUMBER 05000389		3. PAGE 1 OF 3				
4. TITLE Unanalyzed Condition Affecting Emergency Diesel Generators										
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
12	19	2013	2013	- 005	- 00	02	18	2014	NA	
									FACILITY NAME	DOCKET NUMBER
									NA	
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 checked="" 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)		
		<input type="checkbox"/> 20.2203(a)(2)(ii)		<input type="checkbox"/> 50.36(c)(1)(ii)(A)		<input 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 checked="" 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 checked="" type="checkbox"/> 50.73(a)(2)(v)(D)		Specify in Abstract below or in NRC Form 366A		
12. LICENSEE CONTACT FOR THIS LER										
NAME Richard Sciscente - Principal Engineer, Licensing							TELEPHONE NUMBER (Include Area Code) 772-467-7156			
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT										
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURE	REPORTABLE TO EPIX	
B	LB	HX	ES03	YES						
14. SUPPLEMENTAL REPORT EXPECTED							15. EXPECTED SUBMISSION DATE			
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO							MONTH	DAY	YEAR	
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)										
<p>On December 19, 2013, with St. Lucie Unit 2 in Mode 1 at 100% reactor power, it was identified that the Emergency Diesel Generator (EDG) air-cooled radiators may lose their cooling function during high sustained winds when the wind direction opposes the flow of cooling air through the radiator. This had the potential to lead to a loss of the radiators' ability to cool the diesel engine cooling water system.</p> <p>The potential for sustained winds to adversely impact the Unit 2 EDG radiator fan performance was not considered in the original plant design.</p> <p>Temporary wind barriers have been installed as a compensatory measure, and permanent wind deflectors are being installed to direct the radiator fan discharge flow vertically to restore full design qualification of the EDGs.</p> <p>This licensee event report is being reported in accordance with 10 CFR 50.73(a)(2)(ii)(B) as an unanalyzed condition. Had these sustained winds been experienced at the EDGs without the currently installed compensatory measures, this condition could have prevented the fulfillment of a safety function. Therefore, this event is also reportable pursuant to 10 CFR 50.73(a)(2)(v)(A) & (D).</p> <p>This event had no effect on the health and safety of the public. During this period other sources of emergency AC power were available through the 1A and 1B EDGs.</p>										

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

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NARRATIVE

Description of the Event

On December 19, 2013, with St. Lucie Unit 2 in Mode 1 at 100% reactor power, it was identified that atmospheric conditions sustaining high winds exceeding approximately 50 miles per hour from specific directions could result in inadequate heat removal to support continuous operation of the emergency diesel generators (EDG). Should weather forecasts identify conditions that would likely result in this condition, an adverse condition monitoring plan was issued including compensatory measures to assure adequate emergency diesel generator cooling (EIIS:LB).

Exhaust air from the emergency diesel generator radiators discharges into concrete box structures on the east and west ends of the diesel generator building. The outer walls of the box structure provide a missile barrier for the radiator, form a vertical plenum to the roof line and discharge horizontally. The postulated concern is for high sustained winds to directly oppose EDG radiator discharge air flow. As a result, the EDG air-cooled radiators may have lost their cooling function during high sustained winds from plant east and west directions (i.e., east-northeast or west-southwest from true north).

Cause

The potential for sustained winds to adversely impact the Unit 2 EDG radiator fan performance was not considered in the original plant design.

Analysis of the Event

The 2A and 2B EDGs are an emergency power source for Unit 2. Each EDG has a radiator at each end for a total of four radiators. Wind generated backpressure at the EDG radiator exhaust vents on the east and west sides of the diesel generator building could have potentially decreased air flow through the EDG radiator cooling fans. This condition was adverse with respect to radiator heat transfer performance and could have caused a loss of function depending on wind direction, strength and duration.

The Unit 1 EDGs are not susceptible to their air-cooled radiators losing their cooling function during sustained high winds. On the Unit 1 EDGs, the vertical plenum extends above the roof line and discharges vertically at an angle.

Safety Significance

Had wind speeds greater than or equal to 47 mph with a wind direction from 32 to 92 degrees or from 212 to 272 degrees been experienced without the currently installed compensatory measures, the EDGs may not have been capable of performing their design function. Technical Specification 3.8.1.1 requires both EDGs operable in Modes 1 through 4. Technical Specification 3.8.1.2 requires one operable EDG in Modes 5 and 6.

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NARRATIVE

The currently installed compensatory measures will provide a temporary wind barrier to mitigate wind speeds up to 74 mph. In the unlikely event that hurricane force winds (i.e., greater than 74 mph) are experienced from the wind direction 32 to 92 degrees or from 212 to 272 degrees, entering the applicable sections of the Technical Specifications (3.8.1.1 for Modes 1 through 4 or 3.8.1.2 for Modes 5 and 6) will be required. The EDGs are considered operable but degraded below full qualification.

The sustained winds that are adverse to EDG radiator heat transfer are normally associated with tropical storms and hurricanes. Developing weather patterns that could produce tropical storms or hurricanes are predictable and slow moving. This allows ample time to prepare for high wind conditions.

This licensee event report is being reported in accordance with 10 CFR 50.73(a)(2)(ii)(B) as a condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degraded plant safety. Had these sustained winds been experienced at the EDGs without the currently installed compensatory measures, this condition could have prevented the fulfillment of a safety function. Therefore, this event is also reportable pursuant to 10 CFR 50.73(a)(2)(v)(A) & (D).

This event had no effect on the health and safety of the public. During this period other sources of emergency AC power were available through the 1A and 1B EDGs.

Corrective Actions

Temporary wind barriers have been installed as compensatory measures to reduce the potential for sustained winds to adversely impact the Unit 2 EDG radiator fan performance.

The corrective action listed below has been entered into the site corrective action program. Any changes to the action will be managed under the corrective action program.

1. To correct the problem, a permanent wind deflector is being installed to direct the radiator fan discharge flow vertically to restore full design qualification of the EDGs.

Failed Component(s)

None

Manufacturer

Engine Systems, Inc. is the Emergency Diesel Generator supplier.