



August 2, 2012

L-2012-291
10 CFR 50.73

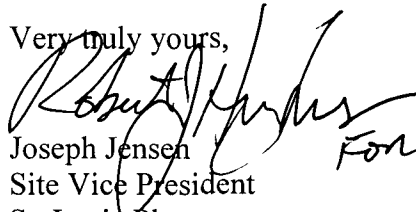
U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 2012-007
Date of Event: June 2, 2012

Unit 1 Reactor Trip on Turbine Trip

The attached Licensee Event Report 2012-007 is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,


Joseph Jensen
Site Vice President
St. Lucie Plant

JJ/dlc
Attachment

IE22
NR

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION (10-2010)					APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013 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 Section (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.														
LICENSEE EVENT REPORT (LER)																			
1. FACILITY NAME St. Lucie Unit 1										2. DOCKET NUMBER 05000335					3. PAGE 1 OF 3				
4. TITLE Unit 1 Reactor Trip on Turbine Trip																			
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED										
MONTH	DAY	YEAR	YEAR	SEQUENTIA L NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME NA					DOCKET NUMBER					
6	02	2012	2012 - 007 - 00			08	02	2012	FACILITY NAME					DOCKET NUMBER					
9. OPERATING MODE <div style="text-align: center;">1</div>			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)																
10. POWER LEVEL <div style="text-align: center;">100%</div>			<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)																
			<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																			
NAME Don Cecchetti - Principal Engineer, Licensing										TELEPHONE NUMBER (Include Area Code) 772-467-7155									
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT																			
CAUSE	SYSTEM	COMPONENT	MANU- FACTURE	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU- FACTURE	REPORTABLE TO EPIX										
14. SUPPLEMENTAL REPORT EXPECTED										15. EXPECTED SUBMISSION DATE			MONTH	DAY	YEAR				
<input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)										<input type="checkbox"/> NO			11	01	12				
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)																			
On June 2, 2012 at 1935 with St. Lucie Unit 1 in Mode 1 at 100% power the reactor automatically tripped from normal full power operation due to a loss of load following a failure of the turbine control system (TCS). The reactor trip was uncomplicated and all control rod assemblies (CEAs) fully inserted. No automatic safety system actuations were required and none occurred. The reactor coolant system (RCS) heat removal was maintained with main feedwater (MFW) and steam bypass to the condenser. The Offsite power grid was available and stable.																			
The reactor trip on turbine trip was caused by loss of communications of the Drop 3 and Drop 53 controllers in the recently installed Ovation turbine control system (TCS). The direct cause for the Drop 3 controller was a fiber optic (FO) connection with a high decibel (Db) loss due to a failed connector and the cause for Drop 53 is indeterminate. A root cause evaluation (RCE) for the connector failures is in progress and the results will be provided in a supplement to this LER.																			
Immediate corrective actions taken included removing all questionable control modules and the controllers. Corrective actions to prevent reoccurrence are under development and will be provided in a supplement to this report.																			

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
St. Lucie Unit 1	05000335	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	Page 2 of 3
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NARRATIVE

Description of the Event

On June 2, 2012 at 1935 St. Lucie Unit 1 reactor automatically tripped from normal full power operation due to a loss of load following a failure of the turbine control system (TCS) [EIIS:JI]. No automatic safety system actuations were required and none occurred. The reactor coolant system (RCS) heat removal was maintained with main feedwater (MFW) and steam bypass to the condenser.

Cause

The reactor trip on turbine trip was caused by loss of communications of the Drop 3 and Drop 53 controllers in the Ovation turbine control system (TCS). The direct cause for Drop 3 controller failure was a failed fiber optic (FO) connection. The cause for Drop 53 is indeterminate. A root cause evaluation (RCE) for the connector failures is in progress and the results will be provided in a supplement to this LER.

Analysis of the Event

The primary function of the recently installed TCS is to control the proper speed and load of turbine, the TCS consists of five controller cabinets each containing redundant controllers identified as "Drops." Failed Drops 3 and 53 are redundant Drops in one of the five controller cabinets. Prior to the event, Unit 1 was in Mode 1 and stable at 100% reactor power with no evolutions in progress or abnormal plant indications. At 1453, Drop 53 failed and transferred to Drop 3. At 1935, Drop 3 failed with no back-up causing the turbine / reactor trip. The direct cause for Drop 3 controller failure was a failed fiber optic (FO) connection. The cause for Drop 53 is indeterminate.

A complete analysis of the event will be provided at the conclusion of the ongoing analysis as a supplement to this report.

Safety Significance

At the time of the event the plant was in Mode 1 at 100% power with no evolutions in progress. The trip was uncomplicated and all CEAs fully inserted when the reactor was manually tripped. No automatic safety system actuations were required and none occurred. The reactor coolant system (RCS) heat removal was maintained with main feedwater (MFW) and steam bypass to the condenser.

A Risk assessment associated with Unit 1 automatic reactor trip event due to failure of TCS was developed. The conditional core damage probability (CCDP) and conditional large early release probability (CLERP) values were evaluated for the stated event and were found to be significantly below the thresholds required by RG-1.174 for the risk to be "Small", where CCDP is below 1.0E 06 and CLERP is below 1.0E-07. Therefore, it is concluded that the risk impact of the stated event is not risk-significant.

This licensee event report is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as "an event or condition that resulted in manual or automatic actuation of the Reactor Protection System including reactor scram or reactor trip."

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NARRATIVE

Prompt Corrective Action

All questionable control modules and the controllers were replaced.

Corrective Actions

The corrective actions will be provided upon completion of the root cause evaluation.

Similar Events

To be provided with a supplemental LER

Failed Component(s)

To be provided with a supplemental LER

Manufacture: Model:

To be provided with a supplemental LER