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**JUN 18 2015**

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

**SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 50-387/2013-009-01  
UNIT 1 LICENSE NO. NPF-14  
PLA-7298**

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**Docket No 50-387**

*Reference: PLA-7196: Susquehanna Steam Electric Station Licensee Event Report  
50-387/2013-009-00 Unit 1 License No. NPF-14, dated July 18, 2014.*

Attached is supplemental Licensee Event Report (LER) 50-387/2013-009-01. On October 30, 2013, the two Reactor Protection System (RPS) Electrical Protection Assemblies in the 'A' train alternate RPS power supply were found to have underfrequency trip set points outside of their Technical Specification Allowable Value. This event was determined to be reportable under 10 CFR 50.73(a)(2)(v) as a condition that could have prevented the fulfillment of the safety function of the RPS Electric Power Monitoring system. It is also being reported in accordance with 10 CFR 50.73(a)(2)(vii) as a common cause inoperability of independent channels in a single system, and 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by technical specifications.

Since the time the original LER (Reference) was submitted, additional analysis of the event was performed. This supplement provides updated information regarding the causes and corrective actions.

There were no actual consequences to the health and safety of the public as a result of this event.

No regulatory commitments are associated with this LER.

A handwritten signature in black ink, appearing to be "J. A. Franke", written over a horizontal line.

J. A. Franke

Attachment: LER 50-387/2013-009-01

Copy: NRC Region I  
Mr. J. E. Greives, NRC Sr. Resident Inspector  
Mr. J. A. Whited, NRC Project Manager  
Mr. L. J. Winker, PA DEP/BRP

<b>NRC FORM 366</b> (02-2014)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>   <b>LICENSEE EVENT REPORT (LER)</b> (See Page 2 for required number of digits/characters for each block)			<b>APPROVED BY OMB: NO. 3150-0104</b>		<b>EXPIRES: 01/31/2017</b>					
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.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> Susquehanna Steam Electric Station Unit 1					<b>2. DOCKET NUMBER</b> 05000387		<b>3. PAGE</b> 1 of 2					
<b>4. TITLE</b> Reactor Protection System Electrical Protection Assembly Logic Card Underfrequency Trip Setpoints Out of Calibration												
<b>5. EVENT DATE</b>			<b>6. LER NUMBER</b>			<b>7. REPORT DATE</b>			<b>8. OTHER FACILITIES INVOLVED</b>			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER		
10	30	2013	2013	- 009	01	06	18	2015	FACILITY NAME	DOCKET NUMBER		
										<b>05000</b>		
										<b>05000</b>		
<b>9. OPERATING MODE</b>		<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>										
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 checked="" 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)	
100		<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 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 checked="" 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	
<b>12. LICENSEE CONTACT FOR THIS LER</b>												
<b>LICENSEE CONTACT</b> T. A. Case, Senior Engineer – Nuclear Regulatory Affairs									<b>TELEPHONE NUMBER (Include Area Code)</b> (570) 542-3606			
<b>13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT</b>												
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX			
B	JC	BKR	GE	Y								
<b>14. SUPPLEMENTAL REPORT EXPECTED</b>						<b>15. EXPECTED SUBMISSION DATE</b>			MONTH	DAY	YEAR	
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)						<input checked="" type="checkbox"/> NO						
<b>ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)</b>  During routine surveillance testing on 10/30/2013, the two Reactor Protection System (RPS) Electrical Protection Assemblies (EPA) in the 'A' train alternate RPS power supply were found to have underfrequency trip set points outside of the Technical Specification (TS) Allowable Value, thus failing to meet TS Surveillance Requirement (SR) 3.3.8.2.2. The affected EPAs were not in service during the testing, and are only required to be operable when the associated alternate RPS power supply is in service. Upon discovery, the EPAs were successfully calibrated and restored to service. The direct cause of the failed surveillance was determined to be drift of the underfrequency set points in the EPA logic cards. The apparent cause was determined to be that the underfrequency setpoint calculation did not take into consideration the manufacturer's stated setpoint drift and temperature effects. Immediate corrective action was taken to calibrate the affected EPA logic cards. The setpoint calculation was revised to account for drift and temperature effects and recalibrations were then performed using the revised setpoints.  There were no actual consequences to the health and safety of the public as a result of 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](mailto: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
Susquehanna Steam Electric Station, Unit 1	05000387	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 2
		2013	- 009	- 01	

**NARRATIVE****CONDITIONS PRIOR TO THE EVENT**

Unit 1 – Mode 1, 100 percent Rated Thermal Power

Besides the affected EPAs, there were no systems, structures, or components that were inoperable at the start of the event and contributed to the event.

**EVENT DESCRIPTION**

During routine surveillance testing on 10/30/2013, the two Reactor Protection System (RPS) (EIS: JC) Electrical Protection Assemblies (EPA) in the 'A' train alternate RPS power supply were found to have underfrequency trip set points outside of the Technical Specification (TS) Allowable Value, thus failing to meet TS Surveillance Requirement (SR) 3.3.8.2.2. The as found trip setpoints of the two EPAs were 56.99 and 56.94Hz. The TS Allowable Value is greater than or equal to 57Hz. The affected EPAs were not in service during the testing, and are only required to be operable when the alternate power supply is in service for the 'A' train of RPS. Upon discovery, the EPAs were successfully calibrated and restored to service.

This event was determined to be reportable under 10 CFR 50.73(a)(2)(v) as a condition that could have prevented the fulfillment of the safety function of the Reactor Protection System Electric Power Monitoring system because the failures involved redundant, series connected EPAs in the alternate power supply for the 'A' train of RPS. The safety function of the EPAs is to ensure the integrity of the power supply to the RPS, thereby ensuring that the RPS powered instruments would not be damaged by degraded power supply.

The event is also being reported in accordance with 10 CFR 50.73(a)(2)(vii) as a common cause inoperability of independent channels in a single system, and 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by technical specifications because the underfrequency set point failures may have arisen over time.

**CAUSE OF THE EVENT**

The direct cause of the failed surveillance was determined to be drift of the underfrequency set points in the EPA logic cards. The apparent cause was determined to be that the setpoint calculation did not take into consideration the manufacturer's stated setpoint drift and temperature effects.

**ANALYSIS/SAFETY SIGNIFICANCE**

There were no actual safety consequences due to the SR failure of these RPS EPAs. The associated RPS power distribution panel and the loads that it feeds did not experience an underfrequency condition.

RPS equipment that remains connected through EPAs with out of calibration underfrequency set points could be subjected to sustained conditions of under frequency. In the event of an actual extended underfrequency condition, the associated RPS loads (e.g. scram valve solenoids, nuclear instrumentation) could be adversely affected and potentially prevented from performing their safety function of shutting down the reactor and maintaining it in a safe shutdown condition.

**CORRECTIVE ACTIONS**

Immediate corrective actions were taken to calibrate the affected EPA logic cards. The setpoint calculation was revised to account for drift and temperature effects and recalibrations were then performed using the revised setpoints.

**PREVIOUS SIMILAR EVENTS**

LER 2012-009-00, Multiple Test Failures of Reactor Protection System Electrical Protection Assembly Breakers.