

**Robert A. Saccone**  
Vice President – Nuclear Operations

**PPL Susquehanna, LLC**  
769 Salem Boulevard  
Berwick, PA 18603  
Tel. 570.542.3698 Fax 570.542.1504  
rasaccone@pplweb.com



**JUN 14 2006**

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop O-P1-17  
Washington, DC 20555-0001

**SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 50-388/2006-02-00  
LICENSE NO. NPF-22  
PLA-6061**

**Docket No. 50-388**

Attached is Licensee Event Report (LER) 50-388/2006-02-00. This event was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B).

As part of a cause investigation for a late entry into TS LCO 3.8.1 for Unit 2, on April 19, 2006, it was identified that a reportable event had occurred during the 2004 Unit 1 refueling outage. On March 6, 2004, the Unit 1 4.16kV ESS 1A Bus was being tested in accordance with plant procedures. Unit 1 busses supply electrical power to common systems which impact Unit 2 safety systems and require entry into LCO 3.8.1 and 3.8.7 for Unit 2. However, when the ESS 1A Bus was de-energized, only LCO 3.8.7 was entered. Entry into Unit 2 LCO 3.8.1, Conditions A, B and D was missed, resulting in Required Actions A.1 and B.1 not being performed within 1 hour and the mandated time for Unit 2 to be in Mode 3 being exceeded. Because no loss of safety function occurred, there was no impact to the power required to operate safety-related loads necessary to cool the reactor core, maintain containment integrity, and support other vital functions in the event of a postulated accident in one reactor unit, while safely shutting down the unaffected unit.

This event resulted in no actual adverse consequences to the health and safety of the public. No commitments are associated with this LER.

Robert Saccone  
Vice President – Nuclear Operations

Attachment

*IE22*

cc: Mr. S. Collins  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. A. J. Blamey  
Sr. Resident Inspector  
U.S. Nuclear Regulatory Commission  
P.O. Box 35  
Berwick, PA 18603-0035

Mr. R. Osborne  
Allegheny Electric Cooperative  
P. O. Box 1266  
Harrisburg, PA 17108-1266

Mr. R. R. Janati  
Bureau of Radiation Protection  
Rachel Carson State Office Building  
P. O. Box 8469  
Harrisburg, PA 17105-8469

## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [infocollect@nrc.gov](mailto:infocollect@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-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  
Susquehanna Steam Electric Station - Unit 22. DOCKET NUMBER  
05000 3883. PAGE  
1 OF 44. TITLE  
Missed Technical Specification LCO 3.8.1 Entry for Unit 2 During Unit 1 ESS Bus Testing

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
04	19	2006	06	02	00	06	14	2006		05000
9. OPERATING MODE			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)							
5			20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)	
10. POWER LEVEL			20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)	
0			20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)	
			20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)	
			20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER	
			20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		Specify in Abstract below or in NRC Form 366A	
			20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)			
			20.2203(a)(2)(v)		X 50.73(a)(2)(i)(B)		50.73(a)(2)(vii)			
			20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)			
			20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)			

## 12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME  
Brenda W. O'Rourke, Senior EngineerTELEPHONE NUMBER (Include Area Code)  
570-542-1791

## 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

## 14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO

## 15. EXPECTED SUBMISSION DATE

MONTH DAY YEAR

## 16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

As part of a cause investigation regarding a late entry into TS LCO 3.8.1 for Unit 2, on April 19, 2006, it was identified that a reportable event had occurred during the 2004 Unit 1 refueling outage. On March 6, 2004, the Unit 1 4.16kV ESS 1A Bus was being tested in accordance with plant procedures. The ESS 1A Bus was de-energized and LCO 3.8.7 was entered for Unit 2. Unit 1 busses supply electrical power to common systems which impact Unit 2 safety systems and require entry into LCO 3.8.1 and 3.8.7. A review of operator logs for March 6, 2004, identified that only LCO 3.8.7 was entered when the bus was de-energized. Entry into Unit 2 LCO 3.8.1, Conditions A, B and D was missed, resulting in Required Actions A.1 and B.1 not being performed within 1 hour and the mandated time for Unit 2 to be in Mode 3 being exceeded.

The apparent cause for this event was attributed to confusing language in TS 3.8.1 which resulted in an inaccurate interpretation by plant personnel regarding which LCOs were required to be entered to support Unit 1 ESS Bus testing.

Because no loss of safety function occurred, there was no impact to the power required to operate safety-related loads necessary to cool the reactor core, maintain containment integrity, and support other vital functions in the event of a postulated accident in one reactor unit, while safely shutting down the unaffected unit.

Interim compensatory measures were established to clearly state which TS LCOs were required to be entered during the remaining Unit 1 ESS Bus testing that was being performed during the Unit 1 refueling outage. PPL will revise TS 3.8.1 and/or Bases to provide clarity and remove interpretation on LCO applicability during ESS Bus testing.

## LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER	6. LER NUMBER			3. PAGE
Susquehanna Steam Electric Station - Unit 2	05000388	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 4
		2006	- 002	- 00	

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

### CONDITIONS PRIOR TO EVENT

Unit 1, Mode 5, Refueling Outage  
Unit 2, Mode 1, 100% Power

### BACKGROUND

The primary AC distribution system for Susquehanna Units 1 and 2 each consist of four 4.16 kV Engineered Safeguards System (ESS) buses having a primary and alternate offsite source of power as well as an onsite diesel generator (DG) source that supports one 4.16 kV ESS bus in each unit. In addition, some common support systems required by both units receive power through Unit 1 electrical power distribution subsystems.

### EVENT DESCRIPTION

On March 11, 2006, with Unit 1 in a refueling outage, activities for testing the Unit 1 4.16kV ESS Bus 1D (1A204) were in progress. The testing required Unit 2 to enter LCO 3.8.7, Condition C. This was required since Unit 1 busses power common loads, and therefore impact Unit 2 SSCs that are required to be operable when Unit 2 is in Mode 1. PPL personnel later discovered that entry into LCO 3.8.1, Conditions A, B and D for Unit 2 were missed and should have been entered when the Unit 1 bus was de-energized. For a de-energized bus, Condition D requires entry into LCO 3.8.7. Because LCO 3.8.7 was initially entered when the bus was de-energized, the Required Actions for Condition D were met. The Required Actions for Conditions A and B state that with "One offsite circuit inoperable, verify correct breaker alignment and indicated power availability for each offsite circuit within 1 hour and once per 8 hours thereafter." Although the SR was not completed within 1 hour, this event was determined not to be reportable since the surveillance test was satisfactorily completed prior to exceeding the time required for Unit 2 to be in Mode 3.

As part of PPL's cause investigation for the late entry into TS LCO 3.8.1 for Unit 2, an extent of condition evaluation was performed. On April 19, 2006, PPL identified that a similar (yet reportable) event had occurred during the 2004 Unit 1 refueling outage. On March 6, 2004, the Unit 1 4.16kV ESS 1A Bus (1A201) was being tested in accordance with plant procedures. The ESS 1A Bus was de-energized and LCO 3.8.7 was entered for Unit 2. A review of operator logs for March 6, 2004, showed that only LCO 3.8.7 was entered when the Unit 1 bus was de-energized. Entry into Unit 2 LCO 3.8.1, Conditions A, B and D was missed, resulting in Required Actions A.1 and B.1 not being performed within 1 hour and the mandated time for Unit 2 to be in Mode 3 being exceeded. Although Condition D was not entered, LCO 3.8.7 was entered when the bus was de-energized and the appropriate Required Actions were taken.

Because Unit 2 TS LCO 3.8.1, Required Actions A.1 and B.1 were not completed within 1 hour, Action F requires Unit 2 to be in Mode 3 within 12 hours and in Mode 4 within 36 hours. Since it was not recognized in 2004 that entry into these conditions was required, this event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), for any operation or condition prohibited by Technical Specifications.

## LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		2006	- 002	- 00	
Susquehanna Steam Electric Station - Unit 2	05000388				3 of 4

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

### CAUSE OF EVENT

The apparent cause for the 2004 event was attributed to confusing language in TS 3.8.1 which resulted in an inaccurate interpretation by plant personnel regarding which LCOs were required to be entered to support the Unit 1 ESS Bus testing. Based on interviews with PPL personnel, the impact to operability of an offsite source and a DG during ESS Bus testing was recognized. However, the impact was open to interpretation regarding which LCOs were required to be entered.

### ANALYSIS / SAFETY SIGNIFICANCE

#### Actual Consequences:

During the 2004 event, TS LCO 3.8.7 was entered for Unit 2, but entry into TS LCO 3.8.1, Conditions A, B, and D for Unit 2 was missed. Conditions A and B require SR 3.8.1.1 to be performed within 1 hour to verify correct breaker alignment and indicated power availability for each offsite circuit. Although the SR was not performed, a review of operator logs indicated that power was available to both offsite circuits and the 'A', 'B' and 'D' DGs remained operable and therefore, the intent of the SR was met.

Of the three conditions, Condition D imposed the most restrictive completion time (i.e., 12 hours for Unit 2 to be in Mode 3) for one onsite and one offsite 4.16kV power source inoperable. However, the Required Actions in Condition D are modified by a note that states that when Condition D is entered for a de-energized bus and not an inoperable bus, entry into the applicable Conditions and Actions for LCO 3.8.7 are required. In 2004, the Unit 1 ESS bus was de-energized. Entry into LCO 3.8.7 requires a safety function determination (SFD) to be performed in accordance with LCO 3.0.6 to ensure that a loss of safety function had not occurred. During the 2004 event, a SFD was performed which concluded that no loss of safety function had occurred. As such, there was no impact to the power required to operate safety-related loads necessary to cool the reactor core, maintain containment integrity, and support other vital functions in the event of a postulated accident in one reactor unit, while safely shutting down the unaffected unit.

#### Potential Consequences:

During the 2004 event, the worst case scenario would have been if Unit 2 had had an event (such as loss of an offsite power source or a DG) which required safety-related loads powered by the Unit 1 bus to be available to mitigate the event. However, based on plant design, sufficient power sources (i.e., 3 DGs or 1 offsite power source) would have been available to provide power to safety-related loads necessary to mitigate an event.

### CORRECTIVE ACTIONS

#### Immediate Corrective Action

- Interim compensatory measures were established to clearly state which TS LCOs were required to be entered during the remaining Unit 1 ESS Bus testing that was being performed during the Unit 1 refueling outage.

## LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		2006	- 002	- 00	
Susquehanna Steam Electric Station - Unit 2	05000388				4 of 4

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

### Action(s) to Prevent Recurrence

- Revise TS 3.8.1 and/or Bases to provide clarity and remove interpretation on LCO applicability during ESS Bus testing.

### PREVIOUS SIMILAR EVENTS

None