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Vice President - Nuclear Operations

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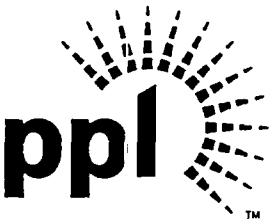

APR 2 5 2006

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station OP1-17
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-387/2006-001-00
PLA-6047 **Docket 50-387**

Attached is Licensee Event Report 50-387/2006-001-00. On March 3, 2006, Susquehanna operators began the process of shutting down Unit 1 for its 14th Refueling and Inspection Outage. As control rods were inserted during the course of the controlled shutdown, those that remained at the full-in position instead of settling and latching at the 00 position within a reasonable period of time were conservatively declared inoperable per Technical Specification 3.1.3, "Control Rod Operability". This Technical Specification, which requires shutdown when nine or more rods are declared inoperable, was entered at 0517 hours on March 4, 2006. This event was determined to be reportable per 10 CFR 50.73(a)(2)(i)(A) because Susquehanna Unit 1 was shut down as required by Technical Specification action statements.

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

No new regulatory commitments have been created through issuance of this report.

Robert A. Saccone
Vice President - Nuclear Operations

Attachment

JE22

cc: Mr. S. J. Collins
Regional Administrator
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19408

Mr. A. J. Blamey
Sr. Resident Inspector
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Harrisburg, PA 17105-8469

NRC FORM 366 (6-2004)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Susquehanna Steam Electric Station – Unit 1	05000387	1 OF 3

4. TITLE TS Required Shutdown Due to Excessive Control Cell Friction

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 05000
3	4	2006	2006	001	00	4	25	2006	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE
1

10. POWER LEVEL
0%

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

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☒ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMER *(Include Area Code)*
Eric J. Miller – Nuclear Regulatory Affairs	570-542-3321

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

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

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On March 3, 2006, Susquehanna operators began the process of shutting down Unit 1 for its 14th Refueling and Inspection Outage. As had previously been experienced during Unit 1's last shutdown in October 2005, the station anticipated that some control rods would exhibit slow settling because of excessive rod-to-fuel channel friction. It was conservatively determined that those rods which failed to settle into their targeted latched position in a reasonable period of time would be declared inoperable. Technical Specification 3.1.3, "Control Rod Operability," would be entered when nine rods had been declared inoperable. Entry into TS 3.1.3.f requires that the Unit be taken to Mode 3, Hot Shutdown, within 12 hours. At the time the ninth control rod was declared inoperable at 0517 hours on March 4, Unit 1 had already been reduced to approximately 0% power. The controlled shutdown continued until 0743 hours when insertion of all rods was completed and Mode 3 had been entered by placing the mode switch to the Shutdown position. Although entry into the shutdown Tech Spec could have been avoided by inserting a manual scram before LCO control rod operability limits were threatened, station management instead implemented a decision strategy that emphasized a controlled shutdown of the Unit.

Even though the plant shutdown was planned and in-progress, the shutdown became a Technical Specification mandate at 0517 hours on March 4 when the ninth control rod was declared inoperable. Accordingly, this event is being reported as a Tech Spec required shutdown per 10 CFR 50.73(a)(2)(i)(A). There were no safety consequences or compromises to public health and safety as a result of this event.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Susquehanna Steam Electric Station – Unit 1	05000387	2006	- 001 -	00	2 OF 3

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

EVENT DESCRIPTION

On March 3, 2006, Susquehanna operators (Licensed, Utility) began the process of shutting down Unit 1 for its 14th Refueling and Inspection Outage. As had previously been experienced during Unit 1's last shutdown in October 2005, the station anticipated that known control cell (EIIS Code: AC) friction issues would result in the slow settling of some control rods (EIIS Code: JD) as they were inserted to the full in position. The cell friction issues manifested during Unit 1's 14th fuel cycle when multiple control rods failed to settle into their targeted latched position within 30 seconds. Although previous experience suggested that operability could be demonstrated for a majority of slow settling control rods, it was conservatively determined that those rods which failed to settle in a reasonable period of time during the shutdown would be declared inoperable. Technical Specification (TS) 3.1.3, Control Rod Operability, would be entered when nine rods had been declared inoperable.

As anticipated, TS 3.1.3.f was entered at 0517 hours on March 4, 2006 when the ninth control rod was declared inoperable. Entry into TS 3.1.3.f requires that the Unit be taken to Mode 3, Hot Shutdown, within 12 hours. At the time the ninth control rod was declared inoperable, Unit 1 had already been reduced to approximately 0% power. The controlled shutdown continued until 0743 hours when insertion of all rods was completed and Mode 3 had been entered by placing the mode switch to the Shutdown position.

There were no Emergency Core Cooling System (EIIS Code: B) initiations and no challenges to containment (EIIS Code: NH) experienced during the shutdown.

Even though the plant shutdown was planned and in-progress, the shutdown became a Technical Specification mandate at 0517 hours on March 4 when the ninth control rod was declared inoperable. Accordingly, this event is being reported as a Tech Spec required shutdown per 10 CFR 50.73(a)(2)(i)(A).

CAUSE OF EVENT

Entry into the shutdown TS was the result of a station strategy that emphasized a controlled Unit shutdown. This strategy recognized the need to enter TS 3.1.3.f. Entry into the Limiting Condition of Operation (LCO) did not impact the course of the shutdown in any way. Entry into TS 3.1.3.f was readily avoidable via manual RPS (EIIS Code: JC) initiation before LCO control rod operability limits were threatened. Such action would have, however, entailed the unnecessary implementation of the scram safety function to complete a normal, planned shutdown and would have precluded the operational advantages inherent with a controlled Unit shutdown.

ANALYSIS / SAFETY SIGNIFICANCE

There was no significance to the administrative entry to TS 3.1.3.f. The control rod drive system (EIIS Code: AA) remained fully capable of performing its function throughout the shutdown. The control rods that were declared inoperable had been fully inserted. Associated control rod drives were hydraulically isolated to prevent rod withdrawal. Being fully inserted, the control rods were fulfilling their design function. As such, there were no adverse safety consequences resulting from this event.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
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Susquehanna Steam Electric Station – Unit 1	05000387	2006	- 001 -	00	3 OF 3

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

CORRECTIVE ACTIONS

None required. Entry into the shutdown Technical Specification was the result of a non-impacting shutdown decision strategy.

ADDITIONAL INFORMATION

Channel bow is contributing to the cell friction issues being experienced at Susquehanna. All control cells exhibiting slow to settle control rods were evaluated. Associated fuel assemblies were measured for channel bow if they would remain in a control cell during the upcoming operating cycle. Those fuel assemblies causing interference have either been removed from the core, re-channeled (3 this outage), or moved to a peripheral location in the core where control blade interference is not possible. The cell friction issue continues to be managed in Susquehanna's corrective action program.

Past Similar Events: Docket No. 50-387 LER 2005-002-00