Bryce L. Shriver
Vice President – Nuclear Site Operations

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MAY 18 2001

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-388/2001-004-00
PLA - 5316 FILE R41-2

Docket No. 50-388
License No. NPF-22

Attached is Licensee Event Report 50-388/2001-004-00. This event was determined to be reportable per 10CFR50.73(a)(2)(ii)(A), in that both isolation valves on the CRD System exceeded their leakage acceptance criteria. These valves are designed to prevent back flow from the reactor vessel to piping and components outside of secondary containment. The check valves were replaced with check valves of a different design and different material. The new valves successfully passed the leak test. There were no consequences to the health or safety of the public.

Bryce L. Shriver
Vice President – Nuclear Site Operations

Attachment

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

cc: Mr. S. L. Hansell
Sr. Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 35
Berwick, PA 18603-0035

IE22

NRC FORM 366 (1-2001)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2001

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Susquehanna Steam Electric Station - Unit 2	05000388	1 OF 3

TITLE (4)
U2 Control Rod Drive Seismic Island Exceeded

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
03	20	2001	2001	004	00	05	18	2001	FACILITY NAME	DOCKET NUMBER 05000

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

OPERATING MODE (9)	5						
			20.2201(b)		20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
POWER LEVEL (10)	0		20.2201(d)		20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
			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 Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iii)		50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	
			20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	
			20.2203(a)(2)(v)		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)	X	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Cornelius T. Coddington - Nuclear Licensing	610 / 774-4019

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	AA	CKV	A391	Y					

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

On March 20, 2001, at 0803 hours, with Unit 2 in Condition 5 (Refueling) at 0 percent power, both of the in-series Control Rod Drive System (CRD) Seismic Island Check Valves (non 10CFR50, Appendix J, Option B valves) failed their leakage acceptance criteria. The Minimum Pathway leak rate was 858 ml/hr as compared to the acceptance criteria of 508 ml/hr. The valves were disassembled. The cause of the failure for the check valves was due to oxide buildup on the valve internals (body and disc) and the seating surface. This buildup resulted in the valve disc not seating properly. The valves were replaced with in-line check valves. A leak test was performed successfully on each of the new valves. There were no safety consequences or compromise to the public health or safety as a result of the check valves not passing their leak test since the dose consequences from the additional leakage would not have exceeded 10CFR100 or 10CFR50 Appendix A, GDC 19 limits.

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

EVENT DESCRIPTION

On March 20, 2001, at 0803 hours, with Unit 2 in Condition 5 (Refueling) at 0 percent power, both of the in-series Control Rod Drive System (CRD) (EIIS Code: AA) Seismic Island Check Valves (non 10CFR50, Appendix J, Option B valves) failed their leakage acceptance criteria. The Minimum Pathway leak rate was 858 ml/hr as compared to the acceptance criteria of 508 ml/hr. The valves were disassembled and inspected. The valve internals (body and disc) and the seating surfaces had a light coating of oxide on them.

CAUSE OF EVENT

The cause of the failure was oxide buildup on the valve internals and seating surfaces. This buildup resulted in the valve disc not seating properly.

REPORTABILITY/SAFETY SIGNIFICANCE

The CRD Seismic Island in each unit is designed to provide a 30-day water seal in the CRD supply line post-LOCA. The CRD Seismic Island eliminates a potential water bypass pathway from the CRD insert/withdrawal lines to the CRD supply line. The CRD supply line originates outside secondary containment and the CRD insert/withdrawal lines enter primary containment. In addition, the Seismic Island prevents the CRD purge supply lines to the reactor recirculation pumps from becoming an air bypass leakage pathway. During the performance of the leak rate testing in Unit 2, both CRD Seismic Island Lift Check Valves had leakage past the valve seat that exceeded the acceptance criteria of 508 ml/hr. The Minimum Pathway leak rate was 858 ml/hr. This constituted a condition that involves a degradation of secondary containment bypass leakage for Unit 2. This event was determined to be reportable in accordance with 10CFR50.73(a)(2)(ii)(A). If a Design Basis Accident-Loss of Coolant (DBA-LOCA) with fuel failure had occurred in Unit 2, the CRD Seismic Island would not have been able to provide the 30-day water seal. This would have resulted in an increase in offsite dose. However, the increase in dose would not have exceeded either 10CFR100 or 10CFR50, Appendix A, GDC 19 dose limits. Therefore, there were no safety consequences or compromise to the public health or safety as a result of not having the 30-day water seal.

These check valves had been scheduled for replacement during this Unit 2 refueling outage due to problems seen in the Unit 1 CRD Seismic Island Check Valves. The Unit 1 CRD Seismic Island Check Valves were replaced with in-line check valves during the refueling outage in the spring of 2000.

In accordance with the guidelines provided in NUREG-1022, Revision 2, Section 5.1.1, the required submission date for this report was determined to be May 21, 2001.

CORRECTIVE ACTION

The carbon steel CRD Seismic Island Lift Check valves in Unit 2 have been replaced with stainless steel in-line check valves which will reduce corrosion.

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(1-2001)

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

ADDITIONAL INFORMATION

Past Similar Events: LER 98-007-00, Docket No. 387/License No. NPF-14
LER 00-005-00, Docket No. 387/License No. NPF-14

Failed Component: Check Valves: 246027 and 246028

Manufacturer: Anchor Darling