10CFR50.73

Virginia Electric and Power Company
Surry Power Station
P. O. Box 315
Surry, Virginia 23883

February 15, 1996

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

Serial No.: 96-069
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Docket Nos.: 50-280
50-281
License Nos.: DPR-32
DPR-37

Dear Sirs:

Pursuant to Surry Power Station Technical Specifications, Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to Surry Power Station Units 1 and 2.

REPORT NUMBER

50-280/96-001-00

This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be forwarded to the Management Safety Review Committee for its review.

Very truly yours,

D. A. Christian
Station Manager

Enclosure

pc: Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Surry Power Station, Unit 1	05000 - 280	1 OF 5

TITLE (4)
Emergency Service Water Pump Inoperable Due to Loss of Missile Protection for Piping

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									Surry Unit 2	05000 - 281
12	13	95	96	-- 001 --	00	02	15	96	FACILITY NAME	DOCKET NUMBER 05000 -

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR:(Check one or more) (11)									
POWER LEVEL (10)	100%		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(c)		
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)		
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER		
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and In Text, NRC Form 366A)		
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)				
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)				

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Including Area Code)
D. A. Christian, Station Manager	(804) 357-3184

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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 December 13, 1995, with Units 1 and 2 operating at 100% power, a trench was excavated to facilitate the replacement of a section of Unit 1 Fish Screen (FS) system piping. On January 17, 1996, Engineering and Site Services personnel recognized that the trench was aligned with the discharge piping from Emergency Service Water Pump (ESWP) 1-SW-P-1A and that the minimum depth of soil cover (i.e., ≥ 5 feet) required for missile protection was not in place. ESWP 1-SW-P-1A was declared inoperable at 1450 hours. Compensatory measures were established and ESWP 1-SW-P-1A was returned to an operable status on January 17, 1996, at 2000 hours.

A Root Cause Evaluation (RCE) was performed. The RCE concluded that this event was caused by a personnel error during a revision of the associated Design Change Package (DCP). To prevent recurrence, coaching will be provided to engineering personnel involved in the design change process to reinforce the requirements related to the DCP revision process. In addition, the procedures used to conduct excavation activities will be revised to verify that required missile protection is maintained. This event resulted in no safety consequences since no severe weather conditions occurred and the probability of a tornado generated missile striking the subject ESWP piping was negligible. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B).

1.0 DESCRIPTION OF THE EVENT

On December 13, 1995, with Units 1 and 2 operating at 100% power, a trench was excavated to facilitate the replacement of a section of Unit 1 Fish Screen (FS) system piping [EIIS-KE,PSP]. The existing carbon steel FS piping had become degraded and was being replaced with fiberglass piping, as specified by Design Change Package 91-025. The nonsafety-related FS system supplies brackish river water to clean the screens and to flush the flumes at the circulating/service water intake structure [EIIS-NN,MK]. The system also supplies cooling water to the circulating water pump lube oil coolers.

The excavation was performed in accordance with the requirements of General Maintenance Procedure GMP-C-102, Excavation, Backfill, and Subgrade Preparation. The trench was approximately 6 feet wide, 40 feet long, and 46 inches deep, with steel plate covering about 12 linear feet to permit the passage of vehicle traffic. These dimensions remained constant until January 8, 1996 when approximately six inches of sand was added to provide bedding material for the new FS piping.

On January 10, 1996 an Installation Problem Report (IPR) was submitted which identified an electrical conduit that crossed the trench and interfered with the FS piping installation. Engineering reviewed the IPR and concluded that the FS piping would need to be routed below the electrical conduit. As a result, an approximately 20 foot portion of the trench was excavated further to a depth of about 65 inches on January 16, 1996.

On January 17, 1996, Engineering and Site Services personnel were inspecting the area and recognized that the trench was aligned with the discharge piping from Emergency Service Water Pump 1-SW-P-1A [EIIS-BI,PSP]. Upon further investigation, it was determined that the ESWP discharge piping in the deeper portion of the trench (about 20 feet in length) had approximately eight to ten inches of soil cover. The balance of the ESWP piping in the trench had approximately 34 inches of soil cover. A Deviation Report was submitted since the minimum depth of soil cover (i.e., $\geq$ 5 feet) required for missile protection was not in place. ESWP 1-SW-P-1A was declared inoperable at 1450 hours.

1.0 DESCRIPTION OF THE EVENT (Continued)

DCP 91-025 was promptly revised to incorporate compensatory measures that would be required in the event that a tornado watch was posted for the area. Personnel and equipment were staged to implement the compensatory measures and ESWP 1-SW-P-1A was returned to an operable status on January 17, 1996, at 2000 hours.

A Root Cause Evaluation (RCE) team was established on January 18, 1996 to determine the cause of this event and to develop recommendations to prevent recurrence. The RCE team determined that the missile protection for the ESWP 1-SW-P-1A discharge piping had been degraded from December 13, 1995 to January 17, 1996. This condition exposed the ESWP piping to potential missile hazards which could have damaged the line, resulting in ESWP 1-SW-P-1A being unable to perform its design function. The RCE team also reviewed the operating history of ESWPs 1-SW-P-1B and 1-SW-P-1C for the subject period. The team noted that ESWP 1-SW-P-1C had been removed from service on two occasions during the period to perform maintenance.

Technical Specifications 3.14.B permits one ESWP to remain inoperable for a period not to exceed seven days. During this event, ESWP 1-SW-P-1A was effectively rendered inoperable for 36 days and ESWP 1-SW-P-1C was inoperable concurrently for approximately 33 hours. Therefore, this report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

This event resulted in no safety consequences or significant implications. During the period of concern, the meteorological conditions that require entry into Abnormal Procedure 0-AP-37.01, Abnormal Environmental Conditions, (including tornado watches or warnings) were not experienced. In addition, the steel plate that covered a 12 foot portion of the trench provided adequate missile protection for the ESWP 1-SW-P-1A discharge piping below it. Furthermore, partial missile protection was maintained for the balance of the ESWP piping throughout the period.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS (Continued)

The likelihood of a tornado generated missile striking the subject ESWP piping was negligible. The Surry UFSAR estimates that the probability of a tornado striking any point at the plant site is 1.73 E-5 per year. An engineering evaluation concluded that the probability of such an event would be significantly less (< 2.8 E-7) during the period of concern, since it did not correspond to the tornado season in this area. Therefore, the health and safety of the public were not affected at any time during this event.

3.0 CAUSE

The RCE team concluded that this event was caused by an error on the part of utility engineering personnel during a revision of DCP 91-025, which included the replacement of the subject FS system piping. Specifically, the requirements of General Nuclear Standard STD-GN-0001, Instructions for DCP Preparation, were not fully implemented in that the loss of missile protection for the subject ESWP piping was not considered. The individuals involved were focused on the FS system modifications and did not recognize that the associated excavation activities would degrade the missile protection for the ESWP 1-SW-P-1A discharge piping.

The RCE also identified that the procedures used to conduct the excavation activities did not address the potential for a loss of missile protection. This procedural omission is considered a weakness that contributed to this event.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

ESWP 1-SW-P-1A was declared inoperable on January 17, 1996 at 1450 hours and a Limiting Condition for Operation was entered in accordance with Technical Specifications 3.14.B.

DCP 91-025 was promptly revised to incorporate the compensatory measures that would be required in the event that a tornado watch was posted for the area. Personnel and equipment were staged to implement the compensatory measures and ESWP 1-SW-P-1A was returned to an operable status on January 17, 1996, at 2000 hours.

5.0 ADDITIONAL CORRECTIVE ACTIONS

An RCE team was established on January 18, 1996 to determine the cause of this event and to develop recommendations to prevent recurrence. The team presented the results of its investigation to the Station Nuclear Safety and Operating Committee on February 8, 1996. The resulting corrective actions are discussed in Section 6.

Missile protection for the ESWP 1-SW-P-1A discharge piping was restored on February 1, 1996.

6.0 ACTIONS TO PREVENT RECURRENCE

Procedures used to conduct excavation activities will be revised to include a requirement to verify that the potential for a loss of missile protection is considered prior to the start of such activities.

Coaching will be provided to engineering personnel involved in the design change process to reinforce the requirements of General Nuclear Standard STD-GN-0001, regarding the DCP revision process.

7.0 SIMILAR EVENTS

A portion of the Unit 2 Auxiliary Feedwater System full flow recirculation line was uncovered during an excavation activity on June 15, 1992. The removal of the soil cover degraded the missile protection for the subject line. This condition placed the line outside of the system's design basis. The cause of this event was identified as a failure to follow procedures by the individuals involved with the excavation activity. Licensee Event Report (LER) 50-281/92-007-00 reported this event pursuant to 10 CFR 50.73(a)(2)(i)(B).

8.0 MANUFACTURER/MODEL NUMBER

N/A