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AUTH.NAME AUTHOR AFFILIATION
KANSLER,M.R. Virginia Power (Virginia Electric & Power Co.)
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-003-00:on 910424,pressurizer safety valves found to have lift setpoints lower than min due to minor damage/wear. Valves refurbished,reset & re-installed.W/910522 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:1cy NMSS/IMSB/PM. 05000281

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

May 22, 1991

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

Serial No.: 91-299
Docket No.: 50-281
License No.: DPR-37

Gentlemen:

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

REPORT NUMBER

91-003-00

This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be reviewed by the Corporate Management Safety Review Committee.

Very truly yours,

M. R. Kansler
Station Manager

Enclosure

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

IE22
1/1

NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Surry Power Station, Unit 2	0 5 0 0 0 2 8 1	1 OF 0 4

TITLE (4) Pressurizer Safety Valve Setpoints Outside of Technical Specification Allowable Limits

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 NAMES	DOCKET NUMBER(S)
0 4	2 4	9 1	9 1	0 0 3	0 0	0 5	2 2	9 1		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		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 (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		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
M. R. Kansler, Station Manager	AREA CODE 8 0 4 3 5 7 - 3 1 8 4

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	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 fifteen single-space typewritten lines) (16)

On April 24, 1991, with Unit 1 at 100% power and Unit 2 at Refueling Shutdown, two Unit 2 pressurizer safety valves were found to have lift setpoints lower than the minimum setpoint allowed by Technical Specifications. The "A" safety valve actuated at 2433 psig while the "B" safety valve actuated at 2397 psig. This is contrary to Technical Specification 3.1.A.3, which requires the lift setpoints to be 2485 psig +5%/-1%. The event had no safety consequences since the safety valves were capable of performing their overpressure mitigating function and no adverse effects would result from the lower lift setpoints. The valves were refurbished, reset to 2485 psig ±1%, and re-installed. This report is required by 10CFR50.73(a)(2)(i)(B) since a condition not allowed by Technical Specifications existed.

1.0 DESCRIPTION OF THE EVENT

On April 24, 1991, with Unit 1 at 100% power and Unit 2 in Refueling Shutdown, two Unit 2 pressurizer safety valves (EIIS-RV) were found to have lift setpoints outside allowable limits. Refueling surveillance testing determined that the "A" safety valve actuated at 2433 psig while the "B" safety valve actuated at 2397 psig. This condition is contrary to the requirements of Technical Specification 3.1.A.3 which requires the setpoints to be 2485 psig +5%/-1%. This report is required by 10CFR50.73(a)(2)(i)(B) since a condition not allowed by Technical Specifications existed.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

The pressurizer safety valves are provided to prevent an overpressure condition in the Reactor Coolant System (RCS). Actuation of pressurizer safety valves below the Technical Specification minimum setpoint has the potential to adversely affect the departure from nucleate boiling ratio (DNBR) results for the Locked Reactor Coolant Pump Rotor event. An examination of the currently applicable Locked Rotor analysis indicates that the DNBR analysis was performed with a Reactor Coolant System pressure of 2317 psig. This is well below the lowest as-found lift setpoint of 2397 psig. The as-found lift setpoints therefore do not present a concern regarding the DNBR results for the Locked Rotor event. The pressurizer safety valves were capable of performing their overpressure mitigating function and there were no actual or potential consequences to public health and safety.

3.0 CAUSE

It was found that minor damage/wear (i.e., rough spots on the seating surfaces) was present and may have caused setpoint drift.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

None required.

5.0 ADDITIONAL CORRECTIVE ACTION(S)

The pressurizer safety valves were refurbished, reset to 2485 psig ±1% using saturated steam as the test medium, and re-installed.

6.0 ACTIONS TO PREVENT RECURRENCE

The Westinghouse Owners Group has completed an evaluation of pressurizer safety valve setpoint shift which occurs when safety valves are set with saturated steam and installed with a lower temperature loop seal configuration. The

results of this evaluation are under review by the NRC. Additional corrective action will be taken as determined necessary following completion of NRC review.

7.0 SIMILAR EVENTS

LER 86-015-01: Two Unit 2 pressurizer safety valves were found to have lift setpoints above the Technical Specification maximum (2485 psig +1%) and one was found to be below the minimum (2485 psig -1%). The out-of-tolerance setpoints were attributed to minor valve damage/wear and failure to compensate for operating temperature during prior surveillance tests. Previous tests had been performed using nitrogen as the test medium while the subject test was performed with saturated steam. The valves were refurbished and subsequent tests were performed using saturated steam.

LER 88-016-01: Three Unit 1 pressurizer safety valves were found to have lift setpoints above the Technical Specification maximum (2485 psig +1%). An engineering evaluation was inconclusive in determining the root cause of the setpoint drift, although it was noted that valve leakage can contribute to setpoint drift. A proposed Technical Specification change was submitted to the NRC to allow an as-found setpoint tolerance of $\pm$ 3% and an as-left tolerance of $\pm$ 1%. This change request was later withdrawn pending resolution of the generic setpoint shift issue.

LER 89-013: Three Unit 2 pressurizer safety valves were found to have lift setpoints above the Technical Specification maximum (2485 psig +1%). The out-of-tolerance setpoints were attributed to the use of saturated steam as the test medium in previous surveillance tests. The subject test was performed using a lower temperature water loop seal configuration, based on information from Westinghouse indicating that lift setpoints would change when the valves were subjected to temperatures different from those used to established the setpoints. The valves were reset to within the required tolerance using a loop seal configuration.

LER 89-017: With Unit 2 at Hot Shutdown, one pressurizer safety valve lifted at a Reactor Coolant System pressure of 2335 psig during performance of an RCS pressure test. This lift pressure was below the Technical Specification minimum (2485 psig - 1%). Valve leakage prior to the event had reduced the effectiveness of the loop seal, exposing the valve to steam and resulting in a downward setpoint shift. The valves were reset to within the required tolerance using steam and installed with loop seals. An interim Technical Specification change was requested and approved to allow an as-found setpoint tolerance of +5%/-1% to compensate for the setpoint shift which occurs when the valves are set with steam and installed with loop seals. Final resolution of the safety valve setpoint issue was being pursued by participation in a Westinghouse Owners Group effort.

8.0 ADDITIONAL INFORMATION

Manufacturer/Model Number: Crosby/HB-86-BP-E.