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VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

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JUN 23 1978

June 23, 1978

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Region II, Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Serial No. 363
FO&M/DLB:das
Docket No. 50-281
License No. LER-37

Dear Mr. O'Reilly:

Pursuant to Surry Power Station Technical Specifications, the Virginia Electric and Power Company hereby submits the following Licensee Event Reports for Surry Unit No. 2.

Report No.	Applicable Technical Specification
LER-78-017/03L-0	TS 6.6.2.b
LER-78-018/03L-0	TS 6.6.2.b
LER-78-019/03L-0	TS 6.6.2.b
LER-78-020/03L-0	TS 6.6.2.b

These reports have been reviewed by the Station Nuclear Safety and Operating Committee and will be placed on the agenda for the next meeting of the System Nuclear Safety and Operating Committee.

Very truly yours,

C. M. Stallings
Vice President - Power Supply
and Production Operations

Enclosures (3 copies)

cc: Dr. Ernst Volgenau, Director (30 copies)
Office of Inspection and Enforcement

Mr. William G. McDonald, Director (3 copies) ✓
Office of Management Information
and Program Control

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5 Ac02
5/11

LICENSEE EVENT REPORT

CONTROL BLOCK: [] [] [] [] [] [] (1) (PLEASE PRINT OR TYPE REQUIRED INFORMATION)

[0][1] [V][A][S][P][S][2][0][0]-[0][0][0][0][0][0]-[0][0][0][3][4][1][1][1][1][4] [5]

CON'T [0][1] REPORT SOURCE [L][6][0][5][0][0][0][2][8][1][7][0][5][2][2][7][8][8][0][6][2][1][7][8][9]

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

[0][2] During the course of Visual Snubber Inspection at Cold Shutdown on 4-7-78, two snub-
[0][3] bers were judged inoperable due to empty reservoirs. The condition was corrected by
[0][4] replacement of the units. A re-review of the test document on 5-22-78 indicated that
[0][5] the snubbers should have been reported as items under a LCO. This failure to report
[0][6] is in itself reportable per T.S. 6.6.2.b.(3). The health and safety of the general
[0][7] public were not affected.

[0][9] SYSTEM CODE [Z][Z] (11) CAUSE CODE [E] (12) CAUSE SUBCODE [B] (13) COMPONENT CODE [S][U][P][O][R][T] (14) COMP. SUBCODE [D] (15) VALVE SUBCODE [Z] (16)

(17) LER/RO REPORT NUMBER [7][8] EVENT YEAR [7][8] SEQUENTIAL REPORT NO. [0][1][7] OCCURRENCE CODE [0][3] REPORT TYPE [L] REVISION NO. [0]
ACTION TAKEN [D] (18) FUTURE ACTION [Z] (19) EFFECT ON PLANT [Z] (20) SHUTDOWN METHOD [Z] (21) HOURS [0][0][0][0] (22) ATTACHMENT SUBMITTED [Y] (23) NPRD-4 FORM SUB. [Y] (24) PRIME COMP. SUPPLIER [A] (25) COMPONENT MANUFACTURER [I][2][0][7] (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

[1][0] The cause of the inoperable snubbers was oil leakage. While the failure was document-
[1][1] ed it was not reported due to error in review and reporting procedures. The snub-
[1][2] bers were replaced with rebuilt units. The test documentation has been rewritten to
[1][3] provide clear guidance.

[1][5] FACILITY STATUS [G] (28) % POWER [0][0][0] (29) OTHER STATUS [N/A] (30) METHOD OF DISCOVERY [B] (31) DISCOVERY DESCRIPTION [Operator Observation] (32)

[1][6] ACTIVITY CONTENT RELEASED OF RELEASE [Z] (33) [Z] (34) AMOUNT OF ACTIVITY [N/A] (35) LOCATION OF RELEASE [N/A] (36)

[1][7] PERSONNEL EXPOSURES NUMBER [0][0][0] (37) TYPE [Z] (38) DESCRIPTION [N/A] (39)

[1][8] PERSONNEL INJURIES NUMBER [0][0][0] (40) DESCRIPTION [N/A] (41)

[1][9] LOSS OF OR DAMAGE TO FACILITY TYPE [Z] (42) DESCRIPTION [N/A] (43)

[2][0] PUBLICITY ISSUED [N] (44) DESCRIPTION [N/A] (45)

Inoperable Snubbers

1. Description of Event:

During the performance of Snubber Visual Inspection (PT-39) completed on 4-7-78, snubbers 2-RH-HSS-101 and 2-WAPD-HSS-140 were found with empty reservoirs and were judged to be inoperable. The unit was at cold shutdown at the time of the inspection. The two snubbers were replaced with tested "ready for issue" units from shop spares and appropriate notations were made on the Periodic Test document. The notation was not flagged as a reportable item. Upon re-review of the test document on 5-22-78, it was determined that the condition may have existed during operation of the unit prior to 4-7-78, and therefore was reportable in accordance with Technical Specification 6.6.2.b.(2). The fact that the event was not flagged and reported is an apparent inadequacy in administrative control that is reportable in accordance with Technical Specification 6.6.2.b(3).

2. Probable Consequences/Status of Redundant Systems:

During the period that the subject snubbers were assumed to be inoperable, a seismic event may have caused damage to the protected systems. However, the low probability of a seismic event combined with shock protection afforded by other snubbers on the affected systems provide reasonable assurance that no release beyond requirements would have occurred. The health and safety of the general public was not affected.

3. Cause:

The cause of inoperability of the two snubbers was assessed as fluid leakage. The failure to report was determined to be an error in administrative review requirements.

4. Immediate Corrective Action:

The inoperable snubbers were replaced when discovered. The replacement was noted on the Periodic Test document.

5. Subsequent Corrective Action:

Reference to the test document revealed weakness in the document and handling which offered opportunities for confusion. The test document was revised to remove procedural weaknesses.

6. Action Taken to Prevent Recurrence:

At the present time, the action taken in 5 above complimented by employee briefings by management, on reporting deficiencies is considered adequate.

7. Generic Implication:

There are no generic implications in this event.

LICENSEE EVENT REPORT

CONTROL BLOCK:

1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	
					1															

(PLEASE PRINT OR TYPE REQUIRED INFORMATION)

0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9																										
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LICENSEE CODE														LICENSE NUMBER										LICENSE TYPE								CAT				58									

CONT

0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9																														
R		L		6		0		5		0		0		2		8		1		7		0		5		2		2		7		8		8		0		6		2		1		7		8		9	
REPORT SOURCE				DOCKET NUMBER																EVENT DATE								REPORT DATE																					

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES

0 2 Comparison of station prints with "as built" condition indicated that two snubbers
 0 3 required on steam generator blowdown piping had never been installed. Condition
 0 4 requires report per T.S. 6.6.2.b.(2). Existing installation provided reasonable as-
 0 5 surance of piping integrity so that health and safety of the public were not affected.
 0 6
 0 7
 0 8

0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9																		
H		I		11		B		12		C		13		S		U		P		O		R		T		14		D		15		Z		16			
SYSTEM CODE				CAUSE CODE				CAUSE SUBCODE				COMPONENT CODE								COMP. SUBCODE				VALVE SUBCODE													

0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9																
7		8		17		EVENT YEAR		7		8		23		0		1		8		27		0		3		30		L		31		0		32	
LER/RO REPORT NUMBER		SEQUENTIA REPORT NO.				OCCURRENCE CODE				REPORT TYPE				REVISION NO.																					
F		Z		C		Z		0		0		0		Y		N		A		I		2		0		7									
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS				ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER																	

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS

1 0 Field designed seismic restraint requirements were identified at the end of construc-
 1 1 tion and not carried out to installation. Upon discovery, the architect engineer pro-
 1 2 vided design team to provide corrective design. Snubbers were installed as required.
 1 3
 1 4

1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9											
G		28		0		0		0		29		N/A		C		31		Engineer's Observation											
FACILITY STATUS		% POWER				OTHER STATUS				METHOD OF DISCOVERY																DISCOVERY DESCRIPTION			

1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9									
Z		33		Z		34		N/A						LOCATION OF RELEASE													
ACTIVITY CONTENT RELEASED				OF RELEASE				AMOUNT OF ACTIVITY								LOCATION OF RELEASE											

1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	
0		0		0		37		Z		38		N/A							
PERSONNEL EXPOSURES NUMBER				TYPE		DESCRIPTION													

1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	
0		0		0		40		N/A											
PERSONNEL INJURIES NUMBER				DESCRIPTION															

1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	
Z		42		N/A															
LOSS OF OR DAMAGE TO FACILITY TYPE				DESCRIPTION															

2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	
N		44		N/A															
ISSUED				DESCRIPTION															

NAME OF PREPARER T. L. Baucom

PHONE: (804)-357-3184

NRC USE ONLY

GPO 917-326

Surry Power Station, Unit 2
Docket No: 50-281
Report No: LER 78-018/03L-0
Event Date: 5-22-78

Required Snubbers Not Installed

1. Event Description:

With the unit operating normally at full power, station staff personnel were conducting an independent review of T.S. snubber list against the station master drawings. It was discovered from the prints that two snubbers required for Steam Generator Blowdown piping had never been installed. The condition is considered to be contrary to T.S. 3.20.B and is reportable in accordance with T.S. 6.6.2.b.(2).

2. Probable Consequences/Status of Redundant Systems:

The lack of snubbers on the steam generator blowdown piping could not in itself have precipitated failure of the affected lines upon the occurrence of a seismic event. In fact, it was discovered that the affected lines were restrained by rigid supports. While snubbers would provide a greater assurance of blowdown line integrity, the system was protected from all analyzed accidents by suitable back-up valving and/or adequate steam generator feed capacity. In any event, the health and safety of the general public were not affected.

3. Cause:

A review of circumstances indicates that the installation was overlooked during the final phases of station construction. The affected piping was "field designed" and following installation the seismic protection was also "field designed". This field design was never fully implemented.

4. Immediate Corrective Action:

Since the unit was being shutdown for other corrective measures, a design team was furnished by the Architect-Engineer to evaluate corrective design measures.

5. Subsequent Corrective Action:

Two snubbers were installed according to design guidance provided by the Architect-Engineer. The unit snubber inventory was verified by station staff as being "installation in accordance with design" for all systems.

6. Actions Taken to Prevent Recurrence:

None considered necessary since the snubber package is now verified as "correct as designed".

7. Generic Implications

None

LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT OR TYPE REQUIRED INFORMATION)

01 V A S P S 2 0 0 - 0 0 0 0 0 - 0 0 3 4 1 1 1 1 4 5
7 8 9 14 15 25 26 30 57-CAT 58

CON'T

01 REPORT SOURCE L 0 5 0 0 0 2 8 1 7 0 5 2 4 7 8 8 0 6 2 1 7 8 9
7 8 60 61 68 69 74 75 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 With unit operating normally at rated power, a re-review of recent Visual Snubber
03 Inspection (PT-39) results and appearance of new information indicated that unit may
04 have been operated beyond snubber inspection interval delineated by T.S.-4.17.A. This
05 condition is reportable per T.S.-6.6.2.b(3). The health and safety of the general
06 public were not affected.
07

08 9

09 SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE
Z Z 11 D 12 Z 13 S U P P O R T 14 D 15 Z 16
9 10 11 12 13 18 19 20

17 LER/RO REPORT NUMBER 7 8 21 22
EVENT YEAR 7 8 21 22
CAUSE CODE 23
SEQUENTIAL REPORT NO. 0 1 9 24 26
OCCURRENCE CODE 0 3 28 29
REPORT TYPE L 30
REVISION NO. 0 32

ACTION TAKEN X 18 G 19
FUTURE ACTION 34
EFFECT ON PLANT A 20
SHUTDOWN METHOD A 21
HOURS 0 1 2 9 37 40
ATTACHMENT SUBMITTED Y 23 41
NPRD-4 FORM SUB. N 24 42
PRIME COMP. SUPPLIER Z 25 43
COMPONENT MANUFACTURER Z 9 9 9 26 44 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 Inspection interval chosen at start-up was apparently not based on complete information
11 When inspection interval could not be adequately substantiated the unit was shutdown
12 for snubber inspection.
13
14

15 FACILITY STATUS E 28 1 0 0 29 OTHER STATUS N/A 30 METHOD OF DISCOVERY B 31 DISCOVERY DESCRIPTION Management Review 32
7 8 9 10 12 13 44 45 46 80

16 ACTIVITY CONTENT Z 33 Z 34 AMOUNT OF ACTIVITY N/A 35 LOCATION OF RELEASE N/A 36
7 8 9 10 11 44 45 80

17 PERSONNEL EXPOSURES NUMBER 0 0 0 37 TYPE Z 38 DESCRIPTION N/A 39
7 8 9 11 12 13 80

18 PERSONNEL INJURIES NUMBER 0 0 0 40 DESCRIPTION N/A 41
7 8 9 11 12 80

19 LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 DESCRIPTION N/A 43
7 8 9 11 12 80

20 PUBLICITY ISSUED Y 44 DESCRIPTION Press Release Reporting Outage 45
7 8 9 10 80

NAME OF PREPARER T. L. Baucom

PHONE: (804)-357-3184

NRC USE ONLY
917-926

Surry Power Station, Unit 2
Docket No: 50-281
Report No: 78-019/03L-0
Event Date: 5-24-78

Surveillance Interval Exceeded

1. Description of Event:

On 5-24-78 with the unit operating normally at rated power, a re-review of the Snubber Visual Inspection (PT-39) completed on or about 4-7-78 in conjunction with new information brought to the attention of station management indicated that the unit may have exceeded the inspection interval length delineated by Technical Specification 4.17.A. This condition is reportable in accordance with Technical Specification 6.6.2.b.(3).

2. Probable Consequences/Status of Redundant Systems

Since all snubbers were verified operable prior to start-up of the unit, there was justification to conclude that seismic protection for the unit was adequate. With the revelation of more complete information, the unit was shutdown. Since unit operation to that point was normal, the health and safety of the public were not affected.

3. Cause:

Unit inspection interval on start-up was predicated upon the results documented in Snubber Visual Inspection (PT-39) dated on or about 4-7-78. When new information indicated that a lesser interval was warranted, unit operation had already exceeded that lesser interval.

4. Immediate Corrective Action:

Unit shutdown was commenced.

5. Subsequent Corrective Action:

A Snubber Visual Inspection (PT-39) was conducted utilizing revised procedures to insure detailed diagnosis of conditions and thorough corrective response and review.

6. Actions Taken to Prevent Recurrence:

The inspection procedure has been further refined to separate "as left" and "as found" inspection procedures and including engineering and management review of results. In addition, completion of an independent engineering review of station drawings versus "as built" configuration has resulted in formulation of a fully correct snubber inventory listing. All station personnel have received detailed information on the means and methods of bringing unsatisfactory conditions to the attention of station management.

7. Generic Implications:

None

LICENSEE EVENT REPORT

CONTROL BLOCK: 1 6 1

(PLEASE PRINT OR TYPE REQUIRED INFORMATION)

01 | VA | SP | S2 | 200 | -00000 | -00 | 34 | 11 | 11 | 11 | 4 | 5

7 8 9 14 15 25 26 30 57 58

LICENSEE CODE LICENSE NUMBER LICENSE TYPE CAT 58

CON'T

01 | L | 605000281 | 7052778 | 8062178 | 9

7 8 60 61 68 69 74 75 80

REPORT SOURCE DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10

02 | Conduct of improved Snubber Visual Inspection (PT-39) resulted in 24 snubbers evalua-

03 | ted as not meeting more stringent inspection criteria. The condition is a determinant

04 | of future inspection intervals per T.S.-4.17.A and is reportable per T.S.-6.6.2.b.(2).

05 | The health and safety of the general public were not affected.

06 |

07 |

08 |

7 8 9 80

09 | ZZ | D | Z | SUPORT | D | Z

7 8 9 10 11 12 13 18 19 20

SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE

17 | 78 | 020 | 03 | L | 0

7 8 21 22 23 24 26 27 28 29 30 31 32

LER/RO REPORT NUMBER EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.

BG | 0129 | Y | Y | A | I207

33 34 35 36 37 40 41 42 43 44 47

ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27

10 | The cause is evaluated as inherent to hydraulic installations and as primarily the re-

11 | sult of more stringent inspection criteria. All discrepancies from this inspection

12 | were corrected. The next inspection interval is 31 days per T.S.-4:17.A.

13 |

14 |

7 8 9 80

15 | E | 100 | N/A | B | Required Inspection

7 8 9 10 12 13 44 45 46 80

FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION

16 | ZZ | N/A | N/A

7 8 9 10 11 44 45 80

ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY LOCATION OF RELEASE

17 | 000 | Z | N/A

7 8 9 11 12 13 80

PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION

18 | 000 | N/A

7 8 9 11 12 80

PERSONNEL INJURIES NUMBER DESCRIPTION

19 | Z | N/A

7 8 9 10 80

LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION

20 | N | N/A

7 8 9 10 80

PUBLICITY ISSUED DESCRIPTION

NAME OF PREPARER T. L. Baucom PHONE: (804)-357-3184

Surry Power Station, Unit 2
Docket No: 50-281
Report No: 78-020/03L-0
Event Date: 5-27-78

Snubber Inspection Results

1. Description of Event:

With the unit shutdown, conduct of improved Snubber Visual Inspection (PT-39) resulted in 24 snubbers evaluated as not meeting the more stringent acceptance criteria as follows:

- a. two units with empty reservoirs
- b. sixteen units with leakage indicated at piston rod seal and reservoir piping
- c. two units improperly mounted
- d. one unit with foreign material on piston rod
- e. one unit with damaged connecting pin
- f. one unit fully extended
- g. one unit fully compressed

These conditions are reportable in accordance with Technical Specifications 6.6.2.b.(2).

2. Probable Consequences/Status of Redundant Systems

The conditions listed above indicated that some degradation of the seismic protection of the units has occurred. Since this protection is provided for a low probability event and since these units represent a small percentage of the total seismic restraint installation, unit operation was normal from start-up to shutdown. The health and safety of the public were not affected.

3. Cause:

The cause of the conditions noted are evaluated as being the results of 5-plus years in service, and are not considered to be excessive in view of the state-of-the-art existing in the industry and the acceptance criteria governing the inspection.

4. Immediate Corrective Actions:

Immediate corrective actions were as follows: (Key to 1 above)

- a. Leak evaluated as being at the reservoir. Unit evacuated and filled in accordance with instruction provided by manufacturer.
- b. All leakage wiped up and short term leakage evaluation conducted.
- c. Mountings corrected and unit replaced with equipment from shop spares.
- d. Rod cleaned.

Surry Power Station, Unit 2
Docket No: 50-281
Report No: 78-020/03L-0
Event Date: 5-27-78

Snubber Inspection Results (Continued)

- e. Reconnecting pin replaced.
- f, g. Engineering evaluation of units indicated necessary modifications to bring units to mid-stroke in hot configuration.

5. Subsequent Corrective Action:

Prior to unit restart, all snubbers were verified operable by visual inspection criteria. Four snubbers indicating some observable leakage were placed on 7-day recheck cycle. Subsequent observation of reservoir level during operation has revealed no significant changes.

6. Actions Taken to Prevent Recurrence:

Conditions described in this report have determined a 31-day inspection interval for this unit in accordance with Technical Specification 4.17.A.

7. Generic Implications:

The generic implications are those associated with hydraulic systems in general, i.e. leakage, seal life compatability with environment. These matters are a state-of-the-art problem.