

[illegible]

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

001 With the unit at cold shutdown, station personnel were informed by Vepco Fuel
002 Resources Department, that recent analyses of loss of main feedwater with 3 RCP's
003 in operation require a minimum of 500 gpm of AFW flow to meet the FSAR acceptance
004 criteria. This is contrary to FSAR Section 14.2.11, which indicates that one motor
005 driven AFW pump (350 gpm) is sufficient. This is reportable per T.S.-6.6.2.a.(8)
006 and is also applicable to Unit 2. Since additional sources of flow were available,
007 and this event did not occur, the health and safety of the public were not affected.

SYSTEM CODE 0 9		CAUSE CODE C H 11		CAUSE SUBCODE B 12		COMPONENT CODE Z Z Z Z Z Z 14						COMP. SUBCODE Z 15		VALVE SUBCODE Z 16															
17 LER/RO REPORT NUMBER 8 1		EVENT YEAR 8 1		SEQUENTIAL REPORT NO. 0 2 5		OCCURRENCE CODE 0 1		REPORT TYPE T		REVISION NO. 0		ACTION TAKEN Y 18		FUTURE ACTION X 19		EFFECT ON PLANT Z 20		SHUTDOWN METHOD Z 21		HOURS 0 0 0 0		ATTACHMENT SUBMITTED Y 22		NPRC FORM SUB. N 24		PRIME COMP. SUPPLIER Z 25		COMPONENT MANUFACTURER Z 9 9 9 9 26	

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 Original FSAR analysis assumed a loss of offsite power in conjunction with a loss of
11 main feedwater. The recent analyses indicate that the case with RCP heat is more
12 limiting. Operators have been instructed to either obtain required AFW flow from
13 additional pumps on the affected unit or the AFW crosstie from the opposite unit; or
14 to secure all RCP's within 10 minutes following LOFW.

FACILITY STATUS		% POWER			OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
1	5	G	0	0	0	A	Notification by corporate personnel.

ACTIVITY CONTENT RELEASED OF RELEASE		AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
1	6	N/A	N/A
2	33		
2	34		

PERSONNEL EXPOSURES				
NUMBER	TYPE	DESCRIPTION		
000	(37) Z	(38)	N/A	

PERSONNEL INJURIES		DESCRIPTION	
NUMBER			
0100	(40)		N/A

LOSS OF OR DAMAGE TO FACILITY		(40)
TYPE	DESCRIPTION	

1 2 3 4 5 6 7 8 9 10

PUBLICITY

ISSUED DESCRIPTION (45)

NRC USE ONLY

7 8 9 10 N/A 58 59 357-3184

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S PDR

SURRY POWER STATION, UNIT 1
DOCKET NO: 50-280
REPORT NO: 81-025/01T-0
EVENT DATE: 07-10-81

TITLE OF EVENT: LOSS OF FEEDWATER ANALYSIS ERROR

1. EVENT DESCRIPTION:

With the unit at cold shutdown, station personnel were informed by the Vepco Fuel Resources Department that recent analyses of a loss of main feedwater incident, with 3 reactor coolant pumps continuing to operate, indicate that a minimum of 500 gpm of Auxiliary Feedwater flow is required to satisfy the FSAR acceptance criteria. This is contrary to FSAR Section 14.2.11, which indicates that one motor driven auxiliary feedwater pump, delivering 350 gpm, is sufficient. This is reportable per T.S.-6.6.2.a.(8).

2. PROBABLE CONSEQUENCES:

Preliminary analysis results indicate that in the event of a loss of main feedwater, without a loss of offsite power, such that all three reactor coolant pumps continued to operate, at least 500 gpm of auxiliary feedwater flow is required to meet the FSAR acceptance criteria. Since current Technical Specifications require the operability of only two auxiliary feedwater pumps, a loss of one of two operable motor driven AFW pumps, would result in the availability of only 350 gpm to the steam generators. In such a case, heat removal through the steam generators is calculated to be less than the heat generated by decay heat and the operation of the reactor coolant pumps, and primary system pressure would rise to the safety valve setpoint in about 30 minutes.

Since indications would be available to the operator of low auxiliary feedwater flow, decreasing steam generator levels and increasing primary system pressure, additional sources of auxiliary feedwater flow could be made available. Since the postulated sequence of events has not occurred, the health and safety of the general public were not affected.

3. CAUSE:

The original FSAR analysis assumed a loss of offsite power, and consequently no reactor coolant pumps operating, in conjunction with a loss of main feedwater. The recent analyses indicate that the case with RCP heat is more limiting.

4. IMMEDIATE CORRECTIVE ACTION:

Operators were instructed to obtain the required 500 gpm of auxiliary feedwater flow in the event of a loss of main feedwater, preferably by starting an additional pump on the affected unit. Additional flow can also be obtained by utilizing the auxiliary feedwater cross-connect from the unaffected unit. If all attempts to obtain the required flow were unsuccessful, the operators have been instructed to secure all the reactor coolant pumps within 10 minutes of the loss of feedwater.

5. SUBSEQUENT CORRECTIVE ACTION:

Analysis of the loss of feedwater incident is continuing to determine the full range of possible operator actions should such an event occur.

In addition, efforts to improve the reliability of the turbine driven auxiliary feedwater pump steam supply are being made, in order to allow operation of the

5. Subsequent Corrective Action (continued)

unit with three auxiliary feedwater pumps operable. A proposed change to Technical Specifications, which would require three operable pumps, was submitted in December 1979.

6. ACTION TO PREVENT RECURRENCE:

None.

7. GENERIC IMPLICATIONS:

This analysis, and the above corrective actions, are also applicable to Unit 2