

LICENSEE EVENT REPORT

CONTROL BLOCK

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

V A S P S 1 0 0 - 0 0 0 0 0 - 0 0 3 4 1 1 1 2 4 5
LICENSEE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE 30 31 CAT 36

CONT

REPORT SOURCE L 6 0 5 0 0 0 2 8 0 7 0 7 1 0 8 1 8 0 9 0 1 8 1 8
DOCKET NUMBER 56 65 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

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

SYSTEM CODE C H 11 CAUSE CODE B 12 CAUSE SUBCODE A 13 COMPONENT CODE Z Z Z Z Z Z 14 COMP SUBCODE Z 15 VALVE SUBCODE Z 16
LER/RO-REPORT NUMBER 17 EVENT YEAR 8 1 21 SHUTDOWN METHOD Z 21 HOURS 0 0 0 0 22 ATTACHMENT SUBMITTED Y 23 NRC FORM SUB N 24 PRIME COMP SUPPLIER Z 25 COMPONENT MANUFACTURER Z 9 9 9 25
ACTION TAKEN Y 18 FUTURE ACTION X 19 EFFECT ON PLANT Z 20
SEQUENTIAL REPORT NO. 0 2 5 24 OCCURRENCE CODE 0 1 28 REPORT TYPE X 30 REVISION NO. 1 32

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

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

FACILITY STATUS G 28 % POWER 0 0 0 29 OTHER STATUS N/A 30 METHOD OF DISCOVERY A 31 DISCOVERY DESCRIPTION Notification by corporate personnel. 32
ACTIVITY CONTENT RELEASED OF RELEASE Z 33 Z 34 AMOUNT OF ACTIVITY N/A 35 LOCATION OF RELEASE N/A 36
PERSONNEL EXPOSURES NUMBER 0 0 0 37 TYPE Z 38 DESCRIPTION N/A 39
PERSONNEL INJURIES NUMBER 0 0 0 40 DESCRIPTION N/A 41
LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 DESCRIPTION N/A 43
PUBLICITY ISSUED N 44 DESCRIPTION N/A 45
E109090374 810901
PDR ADOCK 05000280
S PDR
NRC USE ONLY
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SURRY POWER STATION, UNIT 1
DOCKET NO: 50-280
REPORT NO: 81-025/01X-1
EVENT DATE: 07-10-81

TITLE OF THE 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 two reactor coolant pumps within 10 minutes of the loss of feedwater.

5. SUBSEQUENT CORRECTIVE ACTION:

A sensitivity analysis, with respect to RCP heat input, has been performed. The results of the analysis indicates that only 2 of 3 RCP's are required to be

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secured within 10 minutes. With only one RCP operating, 350 gpm is sufficient to meet the FSAR acceptance criteria. On Unit 1, modifications to the turbine driven auxiliary feedwater pump control circuit has made this pump more reliable. Therefore, three auxiliary feedwater pumps will be maintained operable and any repairs will be completed within the time frame set forth in the proposed Technical Specification change. 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 is also applicable to Unit 2.