

LICENSEE EVENT REPORT

CONTROL BLOCK: _____ (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

V | A | S | P | S | 2 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | _____ | 5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
LICENSEE CODE LICENSE NUMBER LICENSE TYPE JO CAT 56

CON'T
0 | 1 | REPORT SOURCE | X | 6 | 0 | 5 | 0 | 0 | 0 | 2 | 8 | 1 | 7 | 0 | 7 | 1 | 8 | 8 | 0 | 8 | 0 | 8 | 3 | 0 | 8 | 2 | 9
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 | 1 | 2 | Westinghouse LOCA-ECCS reanalysis indicates that a residual penalty of 0.007 in
0 | 3 | FQ exists from the fuel rod burst model. The error in the fuel clad burst model
0 | 4 | was reported on 11-26-79 in Unit 1 LER NO. 79-032/01T-0. As a result, the
0 | 5 | FQ Limit (T.S.3.12.B1) must be reduced. This is reportable as per T.S.6.6.2.a.8.
0 | 6 |
0 | 7 |
0 | 8 |

0 | 9 | SYSTEM CODE | R | C | 11 | CAUSE CODE | B | 12 | CAUSE SUBCODE | F | 13 | COMPONENT CODE | F | U | E | L | X | X | 14 | COMP. SUBCODE | Z | 15 | VALVE SUBCODE | Z | 16 |
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
LER/RO REPORT NUMBER | 8 | 0 | 21 | 22 | SEQUENTIAL REPORT NO. | 0 | 0 | 9 | 24 | 25 | 26 | OCCURRENCE CODE | 0 | 1 | 28 | 29 | REPORT TYPE | X | 30 | REVISION NO. | 1 | 32 |
ACTION TAKEN | X | 18 | FUTURE ACTION | X | 19 | EFFECT ON PLANT | Z | 20 | SHUTDOWN METHOD | Z | 21 | HOURS | 0 | 0 | 0 | 0 | 37 | 38 | 39 | ATTACHMENT SUBMITTED | Y | 40 | NRPD-4 FORM SUB. | N | 41 | PRIME COMP. SUPPLIER | N | 42 | COMPONENT MANUFACTURER | W | 1 | 2 | 0 | 44 | 45 | 46 | 47 | 48 | 49 | 50

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 | 0 | The fuel clad burst error was caused by a reduction in clad heatup rate which
1 | 1 | shifts the fuel clad burst curve and results in earlier clad burst. The NRC
1 | 2 | has approved the new Westinghouse fuel clad burst model.
1 | 3 |
1 | 4 |

1 | 5 | FACILITY STATUS | G | 28 | % POWER | 0 | 0 | 0 | 29 | S/G OTHER STATUS | Replacement Outage | 30 | METHOD OF DISCOVERY | D | 31 | DISCOVERY DESCRIPTION | Notification from NSSS | 32 |
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1 | 6 | ACTIVITY RELEASED OF RELEASE | Z | 33 | CONTENT | Z | 34 | AMOUNT OF ACTIVITY | N/A | 35 | LOCATION OF RELEASE | N/A | 36 |
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1 | 7 | PERSONNEL EXPOSURES NUMBER | 0 | 0 | 0 | 37 | TYPE | Z | 38 | DESCRIPTION | N/A | 39 |
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1 | 8 | PERSONNEL INJURIES NUMBER | 0 | 0 | 0 | 40 | DESCRIPTION | N/A | 41 |
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1 | 9 | LOSS OF OR DAMAGE TO FACILITY TYPE | Z | 42 | DESCRIPTION | 8209080536 820830 PDR ADOCK 05000280 S PDR | 43 |
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

2 | 0 | PUBLICITY ISSUED DESCRIPTION | N | 44 | DESCRIPTION | N/A | 45 | NRC USE ONLY
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

NAME OF PREPARED BY J. L. Wilson PHONE (804) 357-3184

ATTACHMENT 1

SURRY POWER STATION, UNIT NO. 2

DOCKET NO: 50-281
REPORT NO: 80-009/01X-1
EVENT DATE: 07-14-80

TITLE OF EVENT: F_Q LIMIT RESTRICTION

1. DESCRIPTION OF EVENT:

On November 9, 1979, VEPCO was notified of an unreviewed safety question by Westinghouse Electric Corporation. The unreviewed safety question concerned a potential non-conservative feature of the Westinghouse ECCS large break evaluation model which could affect the peak clad temperature calculated for the LOCA transient, specifically in the fuel clad burst model.

Westinghouse, in evaluating their fuel Clad Burst model, has recommended a conservative, interim limit be applied to the model pending NRC approval of their new Fuel Clad Burst model.

Westinghouse analysis (with the interim limits) of Surry Unit 1 indicated that sufficient margin existed in the F_Q limit, but for Surry Unit 2, there existed a residual penalty of 0.007 in F_Q based on the present F_Q limit of 2.19. This event is reportable in accordance with Technical Specification 6.6.2.a.8.

2. PROBABLE CONSEQUENCES/STATUS of REDUNDANT SYSTEMS:

The Westinghouse evaluation revealed that heatup rates could be <25⁰F/second. During the LOCA transient, the fuel clad burst curve establishes the time of clad burst and the post-burst conditions of the clad. The fuel clad burst curve is dependent on the clad heatup rate prior to burst, and a reduction in clad heatup rate causes earlier clad burst. Since Surry Unit 2 had not operated since this event was reported, the health and safety of the general public have not been affected.

3. CAUSE:

The potential non-conservative feature of the Westinghouse large break ECCS evaluation utilized a model which uses a curve that represents fuel clad burst conditions for clad heatup rates of >25⁰F/second. The fuel clad burst curve is dependent on the clad heatup rate prior to burst and a reduction in heatup rate causes earlier clad burst. A shift in clad burst time can affect the peak clad temperature (PCT) calculated for the LOCA transient.

4. IMMEDIATE CORRECTIVE ACTIONS:

Since the current Surry LOCA-ECCS analyses exhibited heatup rates less than 25⁰F/sec., a specific reanalysis was performed to ascertain the effect on PCT for the Surry Unit 2 analysis. The F_Q limit will be administratively restricted to 2.18 as an interim measure until NRC fuel rod burst modeling concerns are resolved. All Hot Channel factor surveillance will be analyzed based on this interim limit.

5. SUBSEQUENT CORRECTIVE ACTION:

Westinghouse has a new LOCA-ECCS evaluation model approved by the NRC which specifically addresses a previous unreviewed safety question concerning fuel rod heat up rates. This model may be used by the Licensee Staff for LOCA-ECCS reanalysis to offset the interim peaking factor penalty at a later date, if desired. The F_0 limit will continue to be administratively restricted to 2.18 until the reanalysis is performed.

6. ACTION TAKEN TO PREVENT RECURRENCE:

No other action will be necessary to prevent recurrence,

7. GENERIC IMPLICATIONS:

This event was a Westinghouse identified generic item and was reported under LER No. 79-032/01T-0 for Surry Unit 1 and 2.

8/24/80