

LICENSEE EVENT REPORT

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

CONTROL BLOCK: 1

0 1 O H D B S 1 2 0 0 - 0 0 N P F - 0 3 3 4 1 1 1 1 4 5
7 8 9 LICENSEE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE 30 57 CAT 58

CONT

0 1 REPORT SOURCE L 6 0 5 0 - 0 3 4 6 7 1 1 0 8 7 7 8 1 1 1 7 7 7 9
7 8 60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10

0 2 On November 8, 1977, during a Station Review Board review of 30 day non-periodic

0 3 Report NP-33-77-80, it was determined a design deficiency existed. The Auxiliary

0 4 Feed Pump Turbine 1-2 governor valve had vibrated closed from surging vibrations

0 5 originating at the Startup Feed Pump motor. It was previously thought a component

0 6 failure of the governor valve caused the closure, not a design deficiency. The

0 7 governor valve would vibrate closed in several hours of Startup Feed Pump operation.

0 8 (NP-32-77-18)

0 9 SYSTEM CODE C H 11 CAUSE CODE B 12 CAUSE SUBCODE A 13 COMPONENT CODE Z Z Z Z Z Z 14
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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27

1 0 The governor valve apparently closed because there is no force to hold it open except
1 1 friction in the linkage and valve packing. Facility Change Request 77-450 was written
1 2 to install a spring to the upper valve lever and to the lower support bracket on both
1 3 auxiliary feed pump turbine governors. This change, supervised by the vendor, Terry
1 4 Turbine, should prevent vibrational closure.

1 5 FACILITY STATUS B 28 % POWER 0 0 0 29 OTHER STATUS NA 30 METHOD OF DISCOVERY Z 31 NA 32 DISCOVERY DESCRIPTION
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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 6 ACTIVITY CONTENT Z 33 Z 34 NA 35 AMOUNT OF ACTIVITY NA 36 LOCATION OF RELEASE
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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 7 PERSONNEL EXPOSURES NUMBER 0 0 0 37 TYPE Z 38 DESCRIPTION NA 39
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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 8 PERSONNEL INJURIES NUMBER 0 0 0 40 DESCRIPTION NA 41
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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 9 LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 NA 43
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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

2 0 PUBLICITY DESCRIPTION N 44 NA 45
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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

TOLEDO EDISON COMPANY
DAVIS-BESSE UNIT ONE NUCLEAR POWER STATION
SUPPLEMENTAL INFORMATION FOR LER NP-32-77-18

DATE OF EVENT: November 8, 1977

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Auxiliary Feed Pump Turbine governor valve vibrational closure design deficiency.

Conditions Prior to Occurrence: The plant was in Mode 3, with Power (MWT) = 0 and Load (MWE) = 0.

Description of Occurrence: On November 8, 1977, during a Station Review Board review of 30 day non-periodic report NP-33-77-80, it was determined a potential design deficiency existed. The Auxiliary Feed Pump Turbine 1-2 governor valve had vibrated closed from surging vibrations originating at the Startup Feed Pump motor. It was previously thought a component failure of the governor valve caused the closure, not a design deficiency; it was subsequently found that the governor valve would vibrate closed in several hours of Startup Feed Pump operation.

Designation of Apparent Cause of Occurrence: The governor valve apparently closed because there is no force to hold it open except friction in the linkage and valve packing. During operation of the motor driven Startup Feed Pump, which is located in the same room and creates a surging vibration, the governor valve linkage vibrates and the governor valve closes due to gravitational forces in the linkage.

Analysis of Occurrence: There was no danger to the health and safety of the public or to station personnel. The Auxiliary Feed Pump Turbine 1-2 governor valve position was being verified every twenty minutes during Startup Feed Pump operation to verify the Auxiliary Feed Pumps will respond if required. Control Room indication is available for the open and closed valve positions of the Auxiliary Feed Pump Turbine governor valve. A permanent fix was made as per Facility Change Request (FCR) 77-450 (see Corrective Action).

Corrective Action: Facility Change Request 77-450 was written to implement a design modification on both Auxiliary Feed Pump Turbines to preclude recurrence. On November 29, 1977, this work was completed which consisted of attaching a spring between the upper valve lever and the lower support bracket on both auxiliary feed pump turbine governors. This modification alters the valve linkage such that vibrational closure should not occur. Therefore, the safety of the Auxiliary Feedwater System was enhanced by this change. Terry Turbine, the turbine vendor, provided the parts and supervised the installation.

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Failure Data: This is the second design deficiency discovered on the Auxiliary Feed Pump Turbines. The speed control failures were also due to a design deficiency.