

LICENSEE EVENT REPORT[illegible]

Attachment to LER 78-041
Consumers Power Company
Palisades Nuclear Plant
Docket 50-255

Background/Discussion

In response to concerns regarding the adequacy of long-term cooling systems for Palisades, Consumers Power Company engaged its Nuclear Steam Supply System (NSSS) supplier to review the existing long-term cooling scheme and to make recommendations for improvement. As part of the analysis, the NSSS supplier has determined that for a small break LOCA in conjunction with a loss of both off-site power and one diesel generator, insufficient High Pressure Safety Injection (HPSI) flow would be delivered to the core during the initial injection phase of the postulated accident. The reason for this is that electrical power to two of the four motor-operated HPSI isolation valves (MOV 3007, 3009, 3011, 3013) would be lost, and only two injection paths would be available to deliver the HPSI pump discharge to the core. The two injection paths will not provide adequate HPSI flow. It should be noted that the redundant HPSI header is normally valved out of service in order to avoid excessive HPSI pump flow during the recirculation mode (eg, through eight injection paths), thereby resulting in insufficient NPSH for the HPSI pump(s). Prior to this recent analysis, Palisades had been assumed to be enveloped by the generic small break analysis applicable to other CE 2650 Mwt series of plants. This condition is reportable per Technical Specification 6.9.2.a(9): Discovery during plant life of conditions not specifically considered in the safety analysis report which require corrective measures to prevent the development of an unsafe condition.

Corrective Action

The four motor operated valves in the HPSI injection headers MOVs 3007, 3009, 3011, and 3013) have been opened and are being maintained opened under administrative controls, except when they are required to be closed for certain Technical Specification tests or essential plant evolutions, or when the Safety Injection system is not required by the Technical Specifications to be operable. An alternative to keeping these valves open is being sought; one method under consideration is valving in of the redundant HPSI header with procedural controls to assure that sufficient NPSH to the HPSI pumps will be available during the recirculation phase.

A permanent solution to the problem could be achieved by modifying power supplies to valves in both the principal and redundant HPSI injection headers in conjunction with changes to the failure modes of two air-operated valves (CVs 3036 and 3037) in the HPSI system. These modifications have been formally proposed and will be reviewed to determine if they are acceptable.

POOR
ORIGINAL

990077

CONTROL BLOCK:

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 (1)

7 8 9 14 18 25 28 30 37 48

LICENSEE CODE LICENSE NUMBER LICENSE TYPE CAT 58

0 1 7 8

REPORT SOURCE L 6 0 5 0 0 0 P 5 5 7 0 2 2 0 7 9 8 0 3 0 6 7 9 9

60 81 DOCKET NUMBER 88 89 EVENT DATE 74 75 REPORT DATE 80

02 | During a design review of the containment building purge valves, it was
03 | determined that the 48-inch butterfly valves may not close against a dp
04 | of greater than 2 psid. As a result, the valves may not be capable of
05 | closing under all postulated accident conditions. (The containment
06 | isolation signal occurs at 5.0 psig containment pressure). Event
07 | reportable per TS 6.9.2.a.(9). This event had no adverse effect upon
08 | the public health or safety.

SYSTEM CODE S A (11)		CAUSE CODE B (12)		CAUSE SUBCODE A (13)		COMPONENT CODE V A L V E X (14)				COMP. SUBCODE B (15)		VALVE SUBCODE D (16)	
7 8		9 10		11 12		13 14 15 16 17				18 19		20 21	
LER/RO REPORT NUMBER (17) 7 9		EVENT YEAR 7 9		SEQUENTIAL REPORT NO. 0 0 9		OCCURRENCE CODE 0 1				REPORT TYPE T		REVISION NO. 0	
22 23		24 25		26 27		28 29				30 31		32	
ACTION TAKEN X (18) Z (19)		FUTURE ACTION Z (20)		EFFECT ON PLANT Z (21)		SHUTDOWN METHOD Z (22)				HOURS 0 0 0 0 (23)		ATTACHMENT SUBMITTED N (24)	
33 34		35 36		37 38		39 40				41 42		43 44	
CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (25)		NPRD-4 FORM SUB. N (26)		PRIME COMP. SUPPLIER A (27)		COMPONENT MANUFACTURER F L 2 5 (28)				45 46		47 48	

10 The purchase specifications for these valves (Fisher-Continental Model
11 9220 48-inch butterfly valves) did not include requirements for closing
12 against pressure. Administrative controls are being used to maintain the
13 valves closed whenever PCS temperature is greater than 210 degrees F.

1	4											80
7	8											80
FACILITY STATUS		% POWER		OTHER STATUS		(30)	METHOD OF DISCOVERY		DISCOVERY DESCRIPTION			(32)
1	5	E	(28)	1	0	0	(29)	N/A	D	(31)	Notification from vendor	
2	6	10		12		13	44	45	46	80		

ACTIVITY CONTENT
RELEASED OF RELEASE

1 6 2 33 34 N/A

AMOUNT OF ACTIVITY (35)

N/A

LOCATION OF RELEASE (36)

PERSONNEL EXPOSURES									
NUMBER		TYPE	DESCRIPTION						
1	7	00	37	Z	38	N/A	39		

7	8	9	10	11	12	13
PERSONNEL INJURIES			DESCRIPTION			
NUMBER			DESCRIPTION			
1	8	101010	40	N/A		

7	8	9	10	11	12
		LOSS OF OR DAMAGE TO FACILITY (43)			
		TYPE DESCRIPTION			
1	9	Z (42)	N/A		

ORIGINAL

7 8 9 10
PUBLICATION
ISSUED DESCRIPTION (45)
2 0 N (44) N/A
1 2 3 4 5 6 7 8 9 10
NRC USE ONLY

NAC USE ONLY

990078

U. S. NUCLEAR REGULATORY COMMISSION

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

7. EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)
While draining the

Increasing its boron concentration, the level in T-82C also decreased below the limit of TS 3.3.1.b. This condition is reportable per TS 5.9.2.a.(2). The level in T-82C was restored promptly, such that no significant safety hazard existed.

DESCRIPTION AND CORRECTIVE ACTIONS (27) (23) (24) (25) (26)
 is occurrence is still under evaluation. An updated report will be
 submitted by May 15, 1979.

10
CONTENT OF RELEASE 12 13
34 N/A AMOUNT OF ACTIVITY 35
10
CHANNEL EXPOSURES 11
ER 37 TYPE 38 DESCRIPTION 39
11 12
CHANNEL INJURIES 13
ER 40 DESCRIPTION 41
11 12
R DAMAGE TO FACILITY 13
DESCRIPTION 42
N/A
0
ITY DESCRIPTION 43
N/A 45

Operator Observation 32
N/A LOCATION OF RELEASE 36
POOR ORIGINAL

NAC USE ONLY

990079

LICENSEE EVENT REPORT

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

01 M I P A L 1 2 0 0 - 0 0 0 0 0 0 - 0 0 3 4 1 1 1 1 4 5
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

CON'T
01 REPORT SOURCE L 6 0 5 0 0 0 2 5 5 7 0 4 0 6 7 9 8 0 4 3 0 7 9 9
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

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 The on-going investigation into the R bus trips which occurred during the
03 fall of 1977 has revealed a potential for the 1-1 diesel generator output
04 breaker to "lockout open". This potential exists only when the 106D-1
05 relay fails to reset following operation of the normal shutdown sequencer.
06 This has occurred 4 times. On 3 of these occasions, the plant was in a
07 shutdown condition; the fourth occurred with the plant on line and lasted
08 for 2 hours. Event had no adverse effect on public health or safety.
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

09 SYSTEM CODE E E 11 CAUSE CODE E 12 CAUSE SUBCODE A 13 COMPONENT CODE C K T B R K 14 COMP SUBCODE A 15 VALVE SUBCODE Z 16
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

17 LER/RO REPORT NUMBER 7 9 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

18 ACTION TAKEN B 19 FUTURE ACTION X 20 EFFECT ON PLANT Z 21 SHUTDOWN METHOD Z 22 HOURS 0 0 0 0 23 ATTACHMENT SUBMITTED N 24 NPRO-4 FORM SUB N 25 PRIME COMP SUPPLIER A 26 COMPONENT MANUFACTURER A 1 8 0 26
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)

10 A contact (34-5) on the normal shutdown sequencer failed to operate. The
11 sequencer was repaired. To prevent recurrence, annunciation of relays
12 106D1 or 106D2 being energized will be provided.
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

13
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

15 FACILITY STATUS X 28 % POWER 29 OTHER STATUS 30 See event 31 METHOD OF DISCOVERY A 32 Review 33 DISCOVERY DESCRIPTION 32
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

16 RELEASED OF RELEASE Z 33 Z 34 N/A 35 AMOUNT OF ACTIVITY 36 LOCATION OF RELEASE 36
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

17 PERSONNEL EXPOSURES NUMBER 0 0 0 37 TYPE Z 38 DESCRIPTION N/A 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

18 PERSONNEL INJURIES NUMBER 0 0 0 40 DESCRIPTION N/A 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

19 LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 DESCRIPTION N/A 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

20 PUBLICITY ISSUED Z 44 DESCRIPTION N/A 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

NRC USE ONLY

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