

LICENSEE EVENT REPORT

CONTROL BLOCK: _____

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 I L D R S 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
LICENSEE CODE LICENSE NUMBER LICENSE TYPE ST CAT 58

0 1 REPORT SOURCE L 6 0 5 0 0 0 2 3 7 7 0 4 1 0 0 3 3 0 4 2 9 8 3 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
DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 During the refueling outage, a primary containment integrated leak rate test
0 3 was being performed. Air leaks were found at the actuating arms for 6 torus-
0 4 to-drywell vacuum breakers. These leaks were later quantified at 1778.28 scfh,
0 5 which exceeds the Tech. Spec. 3.7.A.2.b.(1).(a) operational limit of 1.2
0 6 weight percent per day. Safety significance was considered minimal since
0 7 off-site dose calculations were less than 10 CFR Part 100 limits. There are
0 8 no previous integrated leak rate test failures at Dresden Unit 2 or 3.
7 8 9 30

0 9 SYSTEM CODE S A 11 CAUSE CODE B 12 CAUSE SUBCODE A 13 COMPONENT CODE V A L V E X 14 COMP SUBCODE C 15 VALVE SUBCODE C 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
17 LER NO REPORT NUMBER 8 3 21 22 SEQUENTIAL REPORT NO 0 2 9 23 24 OCCURRENCE CODE 0 1 25 26 REPORT TYPE T 27 28 REVISION NO 0 29 30
ACTION TAKEN F 18 FUTURE ACTION Z 19 EFFECT ON PLANT C 20 SHUTDOWN METHOD Z 21 HOURS 0 0 0 0 22 ATTACHMENT SUBMITTED Y 23 NPRO-4 FORM SUB N 24 PRIME COMP SUPPLIER N 25 COMPONENT MANUFACTURER A 5 8 5 26
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The leaks were caused by failure of the vacuum breaker actuating arm seals.
1 1 The integrated leak rate test was aborted, and the leaks quantified per
1 2 10 CFR 50, app. J. All torus-to-drywell vacuum breaker arm seals were
1 3 replaced with an improved design and no further leakage problems observed.
1 4
7 8 9 30

1 5 FACILITY STATUS H 28 % POWER 0 0 0 29 OTHER STATUS N/A 30 METHOD OF DISCOVERY B 31 DISCOVERY DESCRIPTION Integrated Leak Rate Test 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
1 6 ACTIVITY CONTENT Z 33 Z 34 AMOUNT OF ACTIVITY N/A 35 LOCATION OF RELEASE N/A 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

1 7 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

1 8 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

1 9 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

2 0 PUBLICITY ISSUED N 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

NAME OF PREPARER Robert J. Whalen

PHONE: (815) 942-2920 x523

ATTACHMENT TO LICENSEE EVENT REPORT #83-29/01E-0
COMMONWEALTH EDISON COMPANY (CWE)
DRESDEN UNIT 2
DOCKET # 50-237

Event Description

During the refueling outage, a primary containment integrated leak rate test was being performed. At 0400 hours 4/17/83, pressurizing of the containment was begun. In accordance with Station Procedure DTS 1600-7, the containment isolation boundaries were checked with soap solution as pressure rose from 2 to 15 psig. This was completed by 0615 hours; no leakage was identified. At 0624, pressurizing was stopped and containment pressure held steady. At 1112 hours, 48 psig containment pressure was reached. At 1230 hours, containment pressure was observed to fall approximately 0.08 psi over the course of 30 minutes. At 1330, it was decided to repressurize the containment because it was unclear whether the pressure drop was due to stabilization effects or leakage. At 1430, the following torus-to-drywell vacuum breaker actuating arm shafts were observed to be leaking: 32B, 33A, 33C, 33D, 33E, and 33F. The 32B was leaking at the packing on the left end of the shaft; the others were leaking at both shaft ends. At 1615 hours, checking of all the containment boundaries was restarted. This was finished at 1740; no other significant leakage was found. The containment was blown down and local leak rate testing was begun of the items in question. Total through leakage of all the failed items was quantified at 1778.28 scfh at 1900 hours 4/18/83. This is in excess of the Technical Specification 3.7.A.2.b.(1).(a). operational limit of 1.2 weight percent per day, or 616.392 scfh. There have been no previous failures of the integrated leak rate test at Dresden units 2 and 3. However, there have been isolated cases of torus-to-drywell vacuum breaker arm shaft packing local leak rate test failures. These include the following: R.O. 75-23, 82-01 on Docket 50-249 and R.O. 76-14 on Docket 50-237.

Cause Description and Consequences

The leakage was caused by failure of the actuating arm shaft packing (Atwood and Morrill Co., Inc.) to provide a sufficient seal. This material was apparently designed for a higher pressure application, which would have required a pressure higher than the test value in order to sufficiently expand the chevron seals. Additionally, there had been a manufacturing change in the seals wherein only one internal chevron was provided in

(cont.)

Cause Description and Consequences (cont.)

the assembly whereas previously two had been supplied. The one-chevron assemblies were apparently installed on the "32" series vacuum breakers during the 1981 refueling outage. All of the vacuum breakers were successfully local leak rate tested at the beginning of the 1983 refueling outage. (This is done by pressurizing the small area between the two seal assemblies that are used on each end of the shaft). However, when the entire containment was pressurized for a period of time, the seals were found to progressively fail. In the unlikely event that a LOCA had occurred during the time the vacuum breaker sleeves were leaking, the safety significance was considered minimal since off-site dose calculations for a flow rate of 32.03 scfm (48 psig continuous containment pressure) and assuming no dilution in the secondary containment was less than 10 CFR Part 100 limits. Various redundant ECCS systems were continuously available to prevent such conditions from developing. Additionally, secondary containment and the standby gas treatment systems were available.

Corrective Actions and Conclusion

A new type of seal (John Crane Co.) was installed on all the torus-to-drywell vacuum breakers. It uses one chevron per assembly, but is designed for the appropriate pressure (design-basis accident conditions). The vacuum breakers were again local leak rate tested with no failures. The integrated leak rate test was restarted and the containment leakage was found to be well within Technical Specification limits. The vacuum breaker arms were carefully checked with soap solution periodically during the ILRT and no leakage was found. Although Dresden Unit 3 successfully passed an ILRT during its 1982 refueling outage, 25 percent of its torus-to-drywell vacuum breaker arms will be disassembled and checked during the next shutdown of sufficient duration. Action Item Record 12-83-32 has been issued to track the completion of the Unit 3 inspection.



Commonwealth Edison

DEVIATION REPORT

 DVR NO. 12 - 2 - 83 - 61
 STA UNIT YEAR NO.

PART 1 TITLE OF DEVIATION

OCCURRED

Excessive Leakage Found During Integrated Leak Rate Test

4/18/83

1919

DATE

TIME

SYSTEM AFFECTED 1600

PLANT STATUS AT TIME OF EVENT

Primary Containment

MODE Shutdown

PWR(MWT) 0

LOAD(MWE) 0

TESTING

☒ YES ☐ NO

DESCRIPTION OF EVENT

While performing primary containment integrated leak rate test per

 procedure DTS 1600-7, total primary containment leakage was found to be in
 excess of the maximum allowable operational leak rate of 1.2 weight percent

per day as stated by Technical Specification 3.7.A.2.b.(1).(a). Initial

pressurization of the containment was begun at 0400 hours 4/17/83 and 43 psig

was reached at 1112 hours 4/17/83. At 1230 hours, review of the data showed

that pressure was dropping slightly;(over)

10 CFR50.72 NRC RED PHONE

☐ YES☒ NO

NOTIFICATION MADE

YES

NO

EQUIPMENT FAILURE 27226

☒ YES☐ NO

WORK REQUEST NO.

RESPONSIBLE SUPERVISOR

Robert J. Whalen

DATE 4/18/83

PART 2 OPERATING ENGINEER'S COMMENTS

None

☐ EVENT OF PUBLIC INTEREST☐ TECH. SPEC. VIOLATION☐ NON REPORTABLE OCCURRENCE☒ 14 DAY REPORTABLE/T.S. 6.6.B.1.c☐ 30 DAY REPORTABLE/T.S.☐ ANNUAL/SPECL REPORT REQ'D☒ 24-HOUR NRC NOTIFICATION REQ'D

TELEPH T. Tongue

REGION III

4/19/83 1300

DATE TIME

TELEGM/TELECOPY J. Keppler

REGION III

4/19/83 1410

DATE TIME

☐ CECO CORPORATE NOTIFICATION MADE

IF ABOVE NOTIFICATION IS PER 10CFR21

☐ 5-DAY WRITTEN REPORT REQ'D PER 10CFR21

Telecopy

~~TELETYPE~~

Dennis P. Galle

CECO CORPORATE OFFICER

4/19/83 1401

DATE TIME

A.I.R. #

L.E.R. # 83-29/01T-0

PRELIMINARY REPORT

COMPLETED AND REVIEWED

John M. Almer

OPERATING ENGINEER

4/19/83

DATE

INVESTIGATED REPORT & RESOLUTION
ACCEPTED BY STATION REVIEWRESOLUTION APPROVED AND
AUTHORIZED FOR DISTRIBUTION

86-5176 (FORM 15-52-1) 10-81

J. Brunner
4/28/83Douglas J. Wicks
STATION SUPERINTENDENTJ. A. Cusla
4-29-834/27/83
DATE