

LICENSEE EVENT REPORT

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

9 I L Q A D 2 0 0 0 - 0 0 0 - 0 0 0 4 1 1 1 1 4 5
LICENSEE CODE LICENSE NUMBER LICENSE TYPE CAT 58

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

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES

0 2 While performing the operating cycle functional test of safety related mechanical
0 3 snubbers, a total of 14 snubbers failed to meet the acceptance criteria of the
0 4 functional tests. Although these snubbers failed the functional test, they would
0 5 have performed their design function of dampening any excessive pipe movement.
0 6 Thus, there was no degradation of plant safety due to this occurrence. This
0 7 supplemental report initiated to document the causes of the snubber failures
0 8 and the corrective actions taken.

0 9 7 8 9
SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP SUBCODE VALVE SUBCODE
C C X X S U P P O R T D Z

17 LER/RO REPORT NUMBER 8 3
EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.
8 3 - 0 2 4 / 0 3 L - 1

ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER
C Z Z Z 0 0 0 0 Y N A P 0 2 9

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS

1 0 Root causes of the snubber failures were extensive side loading, excessive interior
1 1 rust and corrosion, and inertia mass misalignment. All fourteen failed snubbers
1 2 were replaced like-for-like prior to unit startup.
1 3
1 4

1 5 7 8 9
FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION
H 0 0 0 NA B Routine Snubber Functional Test

1 6 7 8 9
ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY LOCATION OF RELEASE
Z Z NA NA

1 7 7 8 9
PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION
0 0 0 Z NA

1 8 7 8 9
PERSONNEL INJURIES NUMBER DESCRIPTION
0 0 0 NA

1 9 7 8 9
LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION
Z NA

2 0 7 8 9
PUBLICITY ISSUED DESCRIPTION
N NA

8411130267 841019
PDR ADDCK 05000265 PDR
S

NAME OF PREPARER W Leaverton

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GPO 91-7-226

- I. LER NUMBER: LER/RO 83-24/03L-1
- II. LICENSEE NAME: Commonwealth Edison Company
Quad-Cities Nuclear Power Station
- III. FACILITY NAME: Unit Two
- IV. DOCKET NUMBER: 050-265
- V. EVENT DESCRIPTION:

While performing the operating cycle functional testing of safety related mechanical snubbers on Unit Two, three snubbers failed to meet the acceptance criteria. As per Technical Specification 4.6.1.3, the Station proceeded to test three more sample batches; each sample batch consisted of 10 percent of the total number of safety related snubbers on the unit. The first of these sample batches exhibited four failures. At this point, the Station decided to test 100 percent of the snubbers on Unit Two.

When testing was completed, there were a total of fourteen snubbers that failed the functional test.

VI. PROBABLE CONSEQUENCES OF THE OCCURRENCE:

The probable consequences of this occurrence were minimal. An engineering analysis (letter from G. Frizzell of SNED to N. Kalivianakis dated April 16, 1984) was performed on these fourteen failed snubbers. It was determined that twelve of the fourteen snubbers were operable and would have performed their design function of dampening excess pipe movement. By the same analysis, the remaining two snubbers were determined to be inoperable. However, the analysis also concluded that the snubbers' mode of failure, running drag failure, did not impart significant effects on the associated piping systems.

VII. CAUSE:

The fourteen failed snubbers were sent to WYLE Laboratories in Huntsville, Alabama, to be disassembled, inspected, rebuilt, and re-tested. The inspection results were reviewed and certain generalities could be observed. Following are brief summaries of these generalities, presented according to the test failure mode.

1. Acceleration Failure: The snubbers that either failed the acceleration test or exhibited a grinding noise during the acceleration test were found, in most cases, to have evidence of side loading. Side loading may occur when a snubber is used as a foothold for climbing. Extensive side loading causes the inertia mass to become misaligned and, in some cases, rub against the snubber housing. This rubbing impairs the function of the mass during an applied or actual acceleration.

VII. CAUSE: (continued)

2. Running Drag Failure: The majority of the snubbers that failed the running drag portion of the functional test were found to have excessive interior rust and corrosion. This rust and corrosion, caused by a harsh environment, creates excessive friction which can cause a snubber to exhibit unacceptable forces during a running drag test.
3. Breakaway Drag Failure: The snubber that failed the breakaway drag portion of its functional test was found to have a flat spot on the outer edge of its inertia mass. Furthermore, the clutch spring was found to be improperly seated inside the inertia mass. These two findings indicate that the inertia mass may have been misaligned. This misalignment would cause the inertia mass to hang-up on the housing during a breakaway drag test, thus causing it to exhibit an unacceptable breakaway force and fail the test.

All of the fourteen snubbers involved in this report were manufactured by the Pacific Scientific Company. The model numbers involved were PSA-1, PSA-3, PSA-10, PSA-35 and PSA-100.

VIII. CORRECTIVE ACTION:

The corrective action for this occurrence was to replace all fourteen failed snubbers with new, like-for-like, mechanical snubbers prior to unit startup.

As mentioned earlier, the major causes for the test failures were (1) usage of the snubbers as a foothold, and (2) harsh environment. To alleviate the first of these, Station and contractor personnel were advised to refrain from the use of snubbers as footholds. The latter problem was mitigated by actions taken to improve the atmosphere in the Drywell. These actions include the tightening of packing leaks and improving pipe insulation.

This was the first time that Quad-Cities Station has experienced functional testing failures of safety related mechanical snubbers.



Commonwealth Edison

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DMB

NJK-84-332

October 19, 1984

J. Keppler, Regional Administrator
Office of Inspection and Enforcement
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-265, DPR-30, Unit Two
Appendix A, Section 4.6.1.3

Enclosed please find Reportable Occurrence Number (RO) 83-24/03L-1 for Quad-Cities Nuclear Power Station. Previous revision to this Reportable Occurrence has identified failed mechanical snubbers found during routine functional tests of safety related snubbers. This revision identifies the final disposition of these failed snubbers.

This report is submitted to you in accordance with the requirements of Technical Specification 6.6.B.2.b., a condition leading to operation in a degraded mode permitted by a limiting condition for operation.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

L. J. Gerner for
N. J. Kalivianakis
Station Superintendent

NJK:HQD/bb

Enclosure

cc B. Rybak
A. Morrongiello
INPO Records Center

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