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FACIL: 50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
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RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-022-01: on 871007, as found data of two pressurizer level channels exceeded Tech Spec limiting condition for operation. Caused by transmitter calibr shift. Calibr checks for new transmitter installations plnned. W/880211 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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February 11, 1988

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Operating License DPR-58
Docket No. 50-315

Document Control Manager:

In accordance with the criteria established by 10 CFR 50.73 entitled Licensee Event Reporting System, the following report is being submitted:

87-022-01

Sincerely,

W. G. Smith, Jr.
Plant Manager

WGS:afh

Attachment

cc: D. H. Williams, Jr.
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NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

# LICENSEE EVENT REPORT (LER)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| D. C. COOK NUCLEAR PLANT - UNIT 1 | 0 5 0 0 0 3 1 5 | 1 OF 0 3 |

TITLE (4) VIOLATION OF ESF INSTRUMENTATION LIMITING CONDITIONS FOR OPERATION TOLERANCES DUE TO TRANSMITTERS CALIBRATION SHIFT

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | |
|---|---|---|---|---|---|---|---|---|---|---|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES | DOCKET NUMBER(S) |
| 1 0 | 0 7 | 8 7 | 8 7 | 0 2 2 | 0 1 | 0 2 | 1 1 | 8 8 | D.C. COOK PLANT-UNIT 2 | 0 5 0 0 0 3 1 6 |
| | | | | | | | | | | 0 5 0 0 0 |

| OPERATING MODE (9) | 6 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | |
|---|---|---|---|---|---|
| POWER LEVEL (10) | 0 0 0 | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 73.71(b) |
| | | 20.406(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c) |
| | | 20.406(a)(1)(ii) | 50.36(c)(2) | 50.73(a)(2)(vii) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| | | 20.406(a)(1)(iii) | X 50.73(a)(2)(i) | 50.73(a)(2)(viii)(A) | |
| | | 20.406(a)(1)(iv) | 50.73(a)(2)(ii) | 50.73(a)(2)(viii)(B) | |
| | | 20.406(a)(1)(v) | 50.73(a)(2)(iii) | 50.73(a)(2)(x) | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|---|
| T. P. BEILMAN<br>INSTRUMENTATION AND CONTROL DEPARTMENT SUPERINTENDENT | AREA CODE 6 1 6 — 4 6 5 - 5 9 0 1 |

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |

| SUPPLEMENTAL REPORT EXPECTED (14) | | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|---|---|---|---|---|
| YES (If yes, complete EXPECTED SUBMISSION DATE) | X NO | | | | |

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)


During the past Unit One Refueling Outage performed between June and October 1987, the as found data of two pressurizer level channels exceeded the Technical Specification Limiting Condition for Operation (LCO) values, although they remained within the Safety Analysis. The as found data was obtained during routine calibration evolutions, and the associated components (Foxboro transmitters) were adjusted and restored to acceptable as left conditions.

The cause of the drift is considered attributable to two factors. First, the two transmitters had been installed during the previous refueling outage as part of an Environmental Qualification upgrade. It is not considered unusual for new force balance transmitters to exhibit slightly higher drift during their first calibration cycle following installation. Secondly, the elapsed time between installation and first recalibration was longer than normal due to an extension of the refueling outage start date. This may have contributed to the observed magnitude of the drift.

Corrective action to prevent recurrence will be to perform calibration checks for new transmitter installations between outages as plant conditions allow. The "wear in" period has elapsed for transmitters installed since the previous outage, and further drifting is not expected.



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NRC Form 366

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| D. C. COOK NUCLEAR PLANT - UNIT 1 | 0 5 0 0 0 3 1 5 | 8 7 | — 0 2 2 | — 0 1 | 0 2 OF 0 3 |

TEXT (If more space is required, use additional NRC Form 366A's) (17)

## Conditions Prior to Occurrence

Unit One was in Mode 6 (Refueling).

Unit Two was in Mode 5 (Cold Shutdown).

## Description of Event

While Unit One was in a refueling outage between June and October 1987, routine calibrations were performed on various Technical Specification transmitters (EIIS/XFMR). Initial evaluation of the "as found" data indicated that 16 transmitters had exceeded our internal accuracy requirements (i.e., 0.5% accuracy). During the same time period, Unit Two was shut down for a maintenance outage. Calibrations were performed on Unit Two transmitters, 20 of which exhibited calibration shifts similar to those found on Unit One. All transmitters were recalibrated within specifications at the time they were found in error. Note that while the units were operating, there had been no indications of significant transmitter drift based on the results of Technical Specification required Channel Checks.

An investigation was initiated to determine if a problem existed with transmitters manufactured by Foxboro Corporation. As-found data from the most recent calibrations, the maintenance histories of the transmitters, and the past calibration records were reviewed. Engineering review determined that there were 24 instances of calibration shift on Unit One with four of those most likely due to a data collection error. Also, there were 25 instances of calibration shift on Unit Two. It was concluded that this characteristic could be considered a normal occurrence for force balance transmitters during their initial installation period.

The conclusion of the analysis showed that two of the three channels for the Unit One pressurizer levels (EIIS/JB-LT) had exceeded the Technical Specification LCO limit. Other channels had exceeded the LCO values, however, the redundancy criteria was not compromised.

Other than the transmitters described, there were no other inoperable components, systems, or structures which contributed to this event.

## Cause of the Event

We believe that the majority of the transmitters affected were not defective and are, in retrospect, exhibiting normal characteristics. New Foxboro force balance transmitters were installed during the previous outages for both units. Because the transmitters are primarily mechanical devices with moving parts, the transmitters are expected to exhibit a certain "wear in"

time before they fully stabilize. Further, the elapsed time between the initial installation and the first calibration of the Unit One transmitters due to an extension of the refueling outage start date may have contributed to the overall magnitude of the drift factor.

In general, the Unit 1 transmitters were in service 9 months longer than those in Unit 2 and exhibited drifts of greater magnitude. This is attributed to the greater time interval between initial calibrations and the subsequent calibration checks.

## Analysis of Event

The condition of having less than the minimum number of pressurizer level channels operable is reportable under the provisions of 10CFR50.73, Section (a)(2)(i)(B).

The impact of the transmitter calibration drifts was evaluated. The calculated Channel Statistical Allowance (CSA) was compared to the Total Allowance which represents the allowance between the setpoint and the safety analysis value. The evaluation showed none of the observed transmitter calibration drifts exceeded the safety analysis bounds.

Therefore, it is concluded that the event did not constitute an unreviewed safety question as defined in 10 CFR 50.59 (a)(2), nor did it adversely impact health and safety.

## Corrective Action

Corrective action to prevent recurrence will be to perform calibration checks for new transmitter installations between outages as plant conditions allow. We believe that the transmitters have had a reasonable period to "wear in," and therefore excessive future drift would not be expected or considered acceptable performance.

## Failed Component Identification

None.

## Previous Similar Events

None.