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)
Donald C. Cook Nuclear Plant, Unit 1	0 5 0 0 0 3 1 5	1 OF 0 4

TITLE (4) Radioactive Liquid Effluent Monitor Calibration Did Not Literally Comply With Technical Specification Due to Misinterpretation of Calibration Requirements

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)
0 1	1 2	8 7	8 7	— 0 0 1	— 0 0	0 2	0 6	8 7	D. C. Cook - Unit 2	0 5 0 0 0 3 1 6
										0 5 0 0 0

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

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
T. A. Kriesel Technical Physical Sciences 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)

On January 12, 1987, during a review of radioactive liquid effluent monitor calibration practices, it was determined that the calibration of the Monitors did not literally comply with Technical Specification Surveillance requirement 4.3.3.9.2. It was discovered that calibration of the monitors over their measurement range had not been satisfied.

The root cause of this event was the misinterpretation of the term "measurement range". The procedure used to calibrate these monitors (12 THP 6010.RAD.592) was deficient, in that it did not address calibration over the "measurement range" (maximum span that meter is capable of indicating).

The channel calibration procedure (12 THP 6010.RAD.592) was revised to incorporate the calibration of these monitors over the measurement range. Recalibration of the monitors using the revised procedure, was completed by January 23, 1987.

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Conditions Prior to Event

Unit 1 at 90 percent reactor thermal power, Unit 2 at 80 percent reactor thermal power.

Description of Event

On January 12, 1987, during a review of radioactive liquid effluent monitor (EIIS/MON) calibration practices, it was determined that the calibration of the Monitors did not literally comply with Technical Specification Surveillance requirements.

The involved Technical Specification Surveillance Requirement (4.3.3.9.2, Table 4.3-8 notation 3) states: "The initial Channel Calibration shall be performed using one or more sources with traceability back to the National Bureau of Standards. These sources shall permit calibrating the system over its intended range of energy and measurement range. For subsequent Channel Calibrations, sources that have been related to initial calibration may be used."

While the sources used were traceable to the National Bureau of Standards, it was discovered that the calibration of the monitors over their "measurement range" had not been satisfied (not required by calibration procedure). Initial Channel Calibrations were performed to only 40 percent of the instrument measurement range while subsequent Channel Calibrations tested the monitors to approximately 10 percent of their measurement range.

Initial administrative action (January 12, 1987 at 1742) was to declare the following Radioactive Liquid Effluent Monitors inoperable:

12-R-18	Liquid Waste Effluent Monitor
1-R-19	Unit 1 Steam Generator Blowdown Effluent Monitor
1-R-20	Unit 1 Essential Service Water Effluent Monitor - (Containment Spray Heat Exchanger Outlet)
1-R-24	Unit 1 Steam Generator Blowdown Treatment Monitor
1-R-28	Unit 1 Essential Service Water Effluent Monitor
2-R-19	Unit 2 Steam Generator Blowdown Effluent Monitor
2-R-20	Unit 2 Essential Service Water Effluent Monitor - (Containment Spray Heat Exchanger Outlet)
2-R-24	Unit 2 Steam Generator Blowdown Treatment Monitor
2-R-28	Unit 2 Essential Service Water Effluent Monitor

The applicable action required by Technical Specification Table 3.3-12 was promptly initiated.

With the exception of the affected Radioactive Liquid Effluent Monitors there were no inoperable structures, components, or systems that contributed to this event.

Cause of Event

The root cause of this event was the misinterpretation of the term "measurement range". The procedure used to calibrate these monitors (12 THP 6010 RAD.592) was deficient, in that it did not address calibration over the "measurement range" (maximum span that meter is capable of indicating).

Analysis of Event

This event is considered reportable under the criteria of 10 CFR 50.73 (a)(2)(i).

While the involved monitors (12-R-18, 1-R-19, 1-R-20, 1-R-24, 1-R-28, 2-R-19, 2-R-20, 2-R-24, 2-R-28) were not tested over the measurement range, it is noted that these monitors are normally operated below 1 percent of their measurement range with exception of 12-R-18. Furthermore, the high alarm setpoints for these monitors are set below 2 percent of their measurement range (with exception of 12-R-18) and in the event of a high alarm, isolation of the pathway occurs or sampling is initiated. Although 12-R-18 may be operated at levels exceeding 10 percent of measurement range, samples of liquid effluents are obtained (per procedure) prior to discharge through this pathway.

The operating characteristics of these radiation monitors is such that although the calibration was tested to only 10 percent of range, there is a very high probability that operation was satisfactory. Of the nine monitors all but two of the monitors (2-R-24, 1-R-20) passed the detector linearity test (less than 20 percent roll off). (NOTE: This test ensures the calibration is acceptable over the measurement range of the monitor). These two monitors (2-R-24, 1-R-20) showed drift in linearity above the acceptable limits called for in the test (23 and 50 percent roll off, respectively). However, this drift was in the measurement range above that which this monitor is normally operated. Based on the above, it is our belief that the involved monitors were capable of performing their intended function in the measurement range that they were normally operated and that this event did not pose a threat to the health and safety of the public.

Corrective Actions

To fulfill the requirements of the Technical Specifications, the channel calibration procedure (12 THP 6010.RAD.592) was revised to incorporate the calibration of these monitors over the measurement range. Recalibration of the monitors, using the revised procedure, was completed by January 23, 1987.

Failed Component Identification

None

Previous Similar Events

None

American Electric Power System
INDIANA & MICHIGAN ELECTRIC COMPANY
Donald C. Cook Nuclear Plant
P.O. Box 458, Bridgman, Michigan 49106

February 6, 1987

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 10CFR50.73 entitled Licensee Event Reporting System, the following report is being submitted:

87-001-0

Sincerely,

W. G. Smith, Jr.
Plant Manager

/afh

Attachment

cc: John E. Dolan
J. G. Keppler, Region III
M. P. Alexich
R. F. Kroeger
H. B. Brugger
R. W. Jurgensen
NRC Resident Inspector
R. C. Callen, MPSC
G. Charnoff, Esq.
D. Hahn
INPO
PNSRC
A. A. Blind
Dottie Sherman, ANI Library
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