

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8907060240 DOC. DATE: 89/06/23 NOTARIZED: NO DOCKET #
 FACIL: 50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316
 AUTH. NAME AUTHOR AFFILIATION
 BEILMAN, T.P. Indiana Michigan Power Co.
 SMITH, W.G. Indiana Michigan Power Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-010-00: on 890524, plant operating outside LCO due to
 inability to determine RCS loop delta-T.

W/8 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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INTERNAL:	ACRS MICHELSON		1	1		ACRS MOELLER		2	2
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	L ST LOBBY WARD		1	1		LPDR		1	1
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Indiana Michigan
Power Company
Cook Nuclear Plant
P.O. Box 458
Bridgman, MI 49106
616 465 5901



June 23, 1989

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

Operating License DPR-74
Docket No. 50-316

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:

89-010-00

Sincerely,

A handwritten signature in dark ink, appearing to read 'W. G. Smith, Jr.', with a stylized flourish at the end.

W. G. Smith, Jr.
Plant Manager

WGS:clw

Attachment

cc: D. H. Williams, Jr.
A. B. Davis, Region III
M. P. Alexich
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J. E. Borggren
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11

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) D. C. COOK NUCLEAR PLANT - UNIT 2														DOCKET NUMBER (2) 0 5 0 0 0 3 1 6										PAGE (3) 1 OF 0 3							
TITLE (4) PLANT OPERATING OUTSIDE LCO DUE TO INABILITY TO DETERMINE RCS LOOP DELTA-T (AND REQUIRED CHANNEL CALIBRATION VALUES) PRIOR TO ENTRY INTO APPLICABLE MODE																															
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	5	2	4	8	9	8	9	0	1	0	0	0	6	2	3	8	9								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) 1 0 0		20.402(b)					20.406(a)					50.73(a)(2)(iv)					73.71(b)														
		20.406(a)(1)(i)					50.36(e)(1)					50.73(a)(2)(v)					73.71(e)														
		20.406(a)(1)(ii)					50.36(e)(2)					50.73(a)(2)(vii)					OTHER (Specify in Abstract below and in Text, NRC Form 358A)														
		20.406(a)(1)(iii)					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 T. P. BEILMAN																	TELEPHONE NUMBER														
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 NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		
SUPPLEMENTAL REPORT EXPECTED (14)																	EXPECTED SUBMISSION DATE (15)														
YES (If yes, complete EXPECTED SUBMISSION DATE)																	MONTH DAY YEAR														
X NO																															

On May 24, 1989, it was observed by the control room operators that the Loop 2 Delta-T reactor power indication was approximately 4 percent lower than the remaining loops. This condition resulted in approximately 4 percent deviation between the maximum and nominal trip values for the Loop 2 overpower and overtemperature Delta-T reactor trip channel.

During the previous outage, steam generators were replaced which caused a change in flow distribution among the Reactor Coolant System loops. The resulting change in Delta-T could not be measured until the unit reached full power. These measurements were taken (and the deviations noted) when the unit achieved 100 percent power on March 31, 1989, but the reportability of the deviation was not discovered until review on May 24, 1989.

The Loop 2 Delta-T instrumentation channel was calibrated to the new value of Delta-T reactor power. We are pursuing a Technical Specification 4.0.4 exemption for the Delta-T channels to allow measurement at power and recalibration as necessary.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
D. C. COOK NUCLEAR PLANT - UNIT 2	0 5 0 0 0 3 1 6	8 9	0 1 0	0 0	0 2	OF 0 3	

TEXT (If more space is required, use additional NRC Form 388A's) (17)

Conditions Prior To Occurrence

Unit Two operating at 100 percent Rated Thermal Power.

Description of Event

On May 24, 1989, it was observed by the control room operators that the Loop 2 Delta-T reactor power indication (EIIS/JC-TIS) was approximately 4 percent lower than the remaining loops. The deviation was not limited to indication alone, but found to exist throughout the Loop 2 instrumentation channel, including input to the overpower and overtemperature Delta-T reactor trip circuits. The channel was declared inoperable and placed into the trip condition.

The deviation would have resulted in approximately a 4 percent deviation between the maximum and nominal trip values for the Loop 2 overpower and overtemperature Delta-T reactor trip channel. The Technical Specifications (T.S.) limit the maximum deviation to 2.6 percent for the overpower Delta-T function and to 3.3 percent for the overtemperature Delta-T function.

Cause of the Event

The cause of the deviation was that the actual Loop 2 Delta-T differed from the value of nominal full power Delta-T used in the Loop 2 instrument calibration. This deviation is due primarily to the replacement of Unit 2 steam generators (EIIS/AB-SG), which caused a change in flow distribution among the Reactor Coolant System loops (EIIS/AB). The resulting change in Delta-T could not be measured until the unit reached full power. The overpower and overtemperature Delta-T trips are required, however, to be operable in Modes 1 and 2. These measurements were taken (and the deviation noted) when the unit achieved 100 percent power on March 31, 1989, but the reportability of the deviation was not discovered until review on May 24, 1989.

Analysis of Event

This event is reportable per 10 CFR 50.73(a)(2)(i)(B), as operation prohibited by the plant's Technical Specifications. The Technical Specifications require that all 4 channels for the overtemperature and overpower Delta-T function be operable in Modes 1 and 2. The action statement allows operation with less than the required channels operable, provided the inoperable channel is placed in trip within one hour. Although this action was taken upon discovery of the deviation to T.S. requirements, the unit operated for a time period in excess of one hour with the setpoints exceeding the allowable values.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-3104

EXPIRES: 8/31/88

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

D. C. COOK NUCLEAR PLANT - UNIT 2

0 5 0 0 0 3 1 6 8 9 - 0 1 0 - 0 0 0 3 OF 0 3

NOTE: If more space is required, use additional NRC Form 305A's (17)

The overtemperature and overpower Delta-T functions each have 4 channels. Only 2 of the 4 channels are necessary for a trip. The remaining 3 operable channels are adequate to provide the trip function even under the assumption of an additional failure. It is also noted that the Loop 2 channel deviations from their allowable values were small, being less than 2 percent for the overpower Delta-T and less than 1 percent for the overtemperature Delta-T functions. Therefore, the event is not considered to be of a significant safety concern.

Corrective Action

On May 25, 1989, the Loop 2 Delta-T instrumentation channel was calibrated to the new value of Delta-T reactor power. Correct operation of the overpower and overtemperature Delta-T reactor trip bistables were also verified. Because the Delta-T value could change over time due to steam generator tubing plugging, reactor coolant pump flow changes, or other changes in plant parameters, we will measure the Delta-T at the beginning of each cycle and adjust the calibration as necessary. In order to prevent a recurrence of this event, an exemption to the requirements of T.S. 4.0.4 is being pursued to allow these adjustments to be made at full power. Without the exemption, T.S. requires channel operability prior to entry into Mode 2 which cannot be assured until the measurements are taken at power. The Technical Specifications currently have a T.S. 4.0.4 exemption for calibration of the F (Delta-I) portion of the overtemperature and overpower Delta-T functions, but the exemption does not extend to the rest of the functions.

Failed Component Identification

None.

Previous Similar Events

None.