

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8807250418 DOC.DATE: 88/07/14 NOTARIZED: NO DOCKET #  
 FACIL:50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316  
 AUTH.NAME AUTHOR AFFILIATION  
 POSTLEWAIT,T.K. Indiana Michigan Power Co.  
 SMITH,W.G. Indiana Michigan Power Co.  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-007-00:on 871224,use of incorrect ISI ref valves.  
 Caused by personnel error.

W/8 ltr.

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

## NOTES:

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD3-1 LA	1 1	PD3-1 PD	1 1
STANG,J	1 1		
INTERNAL: ACRS MICHELSON	1 1	ACRS MOELLER	2 2
AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
ARM/DCTS/DAB	1 1	DEDRO	1 1
NRR/DEST/ADS 7E	1 0	NRR/DEST/CEB 8H	1 1
NRR/DEST/ESB 8D	1 1	NRR/DEST/ICSB 7	1 1
NRR/DEST/MEB 9H	1 1	NRR/DEST/MTB 9H	1 1
NRR/DEST/PSB 8D	1 1	NRR/DEST/RSB 8E	1 1
NRR/DEST/SGB 8D	1 1	NRR/DLPQ/HFB 10	1 1
NRR/DLPQ/QAB 10	1 1	NRR/DOEA/EAB 11	1 1
NRR/DREP/RAB 10	1 1	NRR/DREP/RPB 10	2 2
NRR/DRIS/SIB 9A	1 1	NUDOCS-ABSTRACT	1 1
<u>REG FILE</u> 02	1 1	RES TELFORD,J	1 1
RES/DSIR DEPY	1 1	RES/DSIR/EIB	1 1
RGN3 FILE 01	1 1		
EXTERNAL: EG&G WILLIAMS,S	4 4	FORD BLDG HOY,A	1 1
H ST LOBBY WARD	1 1	LPDR	1 1
NRC PDR	1 1	NSIC HARRIS,J	1 1
NSIC MAYS,G	1 1		

TOTAL NUMBER OF COPIES REQUIRED: LTTR 45 ENCL 44

## 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) Use of Incorrect ISI Reference Values due to Personnel Error Results in Literal Violation of Technical Specification Action Statement																																									
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 2			2 4			8 7			8 8			0 0			7 0			0 0			7 1			4 8			8 8			D. C. Cook Unit 1						0 5 0 0 0 3 1 5					
1 2			2 4			8 7			8 8			0 0			7 0			0 0			7 1			4 8			8 8									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 8 0						20.402(b)						20.405(c)						50.73(a)(2)(iv)						73.71(b)																	
						20.405(a)(1)(i)						50.38(c)(1)						50.73(a)(2)(v)						73.71(c)																	
						20.405(a)(1)(ii)						50.38(c)(2)						50.73(a)(2)(vii)						OTHER (Specify in Abstract below and in Text, NRC Form 366A)																	
						20.405(a)(1)(iii)						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)(ix)																													
LICENSEE CONTACT FOR THIS LER (12)																																									
NAME T. K. Postlewait - Technical Engineering Superintendent																TELEPHONE NUMBER AREA CODE 6 1 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 NPDs				CAUSE		SYSTEM		COMPONENT		MANUFACTURER		REPORTABLE TO NPDs																					
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 June 13, 1988, it was reported that incorrect ISI reference differential pressure (dP) values were being used for the Safety Injection (SI) Pumps. Due to cognitive personnel error new reference values were not established after completion of a Design Change. Data review identified two occasions when the ISI allowable deviation for high dP had been exceeded. Contrary to ASME XI LWP-3112, the pumps were not declared inoperable and retested. On July 13, 1988, it was determined that Plant operation had not been in literal compliance with Technical Specification 3.5.2 and the associated action statements were not met.

Although the pumps' recorded dP's exceeded the ISI allowable deviation for high dP, the dP's were acceptable during the next monthly tests without any physical changes to the systems having been made. It is therefore evident that the high readings were not the result of actual changes in pump performance, but rather, indication of such possible factors as instrumentation deviation and/or errors in reading the instrumentation. At no time were the SI pumps degraded or not able to perform their intended safety function. The associated ISI documents have been revised to reflect the correct reference values.

8807250418 880714  
PDR ADDCK 05000316  
S PNU

## 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 8	— 0 0 7	— 0 0	0 2	OF	0 3	

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Conditions Prior to Occurrence

Unit 2 in Mode 1 (Power Operation) at 80 percent Rated Thermal Power on December 24, 1987.

Unit 1 in Mode 1 (Power Operation) at 90 percent Rated Thermal Power on January 7, 1988.

Description of Event

On June 13, 1988, it was reported that during a review of ISI pump test data, it was discovered that incorrect reference differential pressure (dP) values were being used for the Safety Injection (SI) Pumps (EIIS-BQ/P). A complete review of past ISI data determined that the error occurred in June 1984 for Unit 2 and September 1985 for Unit 1, when new reference values were not established after completion of a Design Change which resulted in modified test conditions for the SI pumps. During the period between the above dates it was determined, when using the correct reference values, that on two occasions (December 24, 1987, for the Unit 2 South SI pump and January 7, 1988, for the Unit 1 North SI pump) the ISI allowable deviation for high dP had been exceeded.

Contrary to ASME XI 1WP-3112, the pumps were not declared inoperable nor was corrective action taken. On July 13, 1988, it was determined that Plant operation had not been in literal compliance with Technical Specification 3.5.2, ECCS Subsystems - Tavg  $\geq$  350°F, which requires that two independent ECCS subsystem be operable. Since the inoperable condition of the pumps was not identified, the associated action statements were not met. The next monthly ISI tests for each unit [on January 21, 1988, (Unit 2) and February 4, 1988 (Unit 1)], indicated that dP's were within the allowable range of test quantities.

There were no inoperable components, systems or structures that contributed to this event.

Cause of Event

The root cause of the event was determined to be cognitive personnel error. In June 1984 and September 1985, for Units 2 and 1 respectively, a design change was made to the SI systems which altered the test flow characteristics. During the procedural impact review process, Plant Engineering personnel failed to identify that the design change would result in modified test conditions that would require that new ISI reference values, and allowable ranges of test quantities, be established. This resulted in test data obtained subsequent to the modification incorrectly being compared to reference values established prior to the modification.

## 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 8	— 0 0 7	— 0 0	0 3	OF	0 3

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

Analysis of Event

This event is considered reportable under the provisions of 10CFR50.73.a.2.i.B, Operations or Condition Prohibited by T/S.

Although the pumps' recorded dP's exceeded the ISI allowable deviation for high dP, they were acceptable during the next monthly test without any physical changes to the systems having been made. It is therefore evident that the high readings were not the result of actual changes in pump performance, but rather, indicative of such possible factors as instrumentation deviation and/or errors in reading the instrumentation. The instrumentation situation has been experienced/analyzed on numerous occasions with various pumps in the ISI program and in none of these cases were the pump dP's actually determined to be high or their performance changed. This event is considered a literal violation of Technical Specification requirements. At no time were any of the SI pumps degraded or not able to perform their intended safety function.

Low dP is also tracked by the ISI program to monitor for degraded pump performance. The use of incorrect dP reference values was conservative in that the ISI program requirements would have caused the pumps to be declared inoperable before actual degradation could have exceeded the allowable deviation.

Based on the details above, it is concluded that no risk to the public health and safety existed.

Corrective Actions

The associated ISI documents have been revised to reflect the correct reference values. A review of ISI Pump data encompassing all pumps in the ISI program was performed and no additional examples of incorrect reference values being used were identified. Therefore, it is concluded that this error was limited to the SI Pumps. Furthermore, the cognitive error that occurred as a result of the Design Change review process is concluded to be an isolated occurrence and not indicative of a program deficiency.

The current ISI program requires trending of ISI data to identify adverse trends or abnormal data. This trend program would identify any anomalies for further investigation and would ensure prompt identification and resolution of any similar occurrences.

Failed Component Identification

None

Previous Similar Events

None



Indiana Michigan  
Power Company  
Cook Nuclear Plant  
P.O. Box 458  
Bridgman, MI 49106  
616 465 5901



July 14, 1988

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

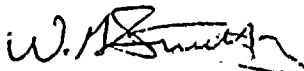
Operating License DPR-58  
Docket No. 50-316

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:

88-007-00

Sincerely,

  
W. G. Smith, Jr.  
Plant Manager

WGS:clw

Attachment

cc: D. H. Williams, Jr.  
A. B. Davis, Region III  
M. P. Alexich  
P. A. Barrett  
J. E. Borggren  
R. W. Jurgensen  
NRC Resident Inspector  
J. F. Stang, NRC  
R. C. Callen  
G. Charnoff, Esq.  
Dottie Sherman, ANI Library  
D. Hahn  
INPO  
PNSRC  
A. A. Blind  
S. J. Brewer/B. P. Lauzau

IE22  
11

