

Indiana Michigan  
Power Company  
500 Circle Drive  
Buchanan, MI 49107 1395



June 25, 2003

AEP:NRC:2573-09

Docket No. 50-316

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Stop O-P1-17  
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Unit 2  
**WEIGHT OF ICE BASKET BELOW MINIMUM ALLOWED  
IN TECHNICAL SPECIFICATION 3.6.5.1**

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

LER 316/2003-004-00: "Weight of Ice Basket Below Minimum Allowed in Technical Specification 3.6.5.1."

There are no commitments included in this submittal.

Should you have any questions regarding this correspondence, please contact Mr. Brian A. McIntyre, Regulatory Affairs Manager, at (269) 697-5086.

Sincerely,

A handwritten signature in black ink that reads "Joseph E. Pollock".

Joseph E. Pollock  
Site Vice President

RAM/jen

Attachment

- c: L. Brandon – Michigan Department of Health  
H. K. Chernoff – NRC Washington DC  
K. D. Curry – AEP Ft. Wayne  
J. E. Dyer – NRC Region III  
J. T. King - MPSC  
MDEQ – DW & RPD  
NRC Resident Inspector  
Records Center - INPO  
J. F. Stang, Jr. – NRC Washington DC

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<b>NRC Form 366</b> <b>U.S. NUCLEAR REGULATORY COMMISSION</b> <b>(7-2001)</b>				<b>APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004</b>  <small>Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.</small>								
<b>LICENSEE EVENT REPORT (LER)</b>  (See reverse for required number of digits/characters for each block)												
<b>1. FACILITY NAME</b>  Donald C. Cook Nuclear Plant Unit 2				<b>2. DOCKET NUMBER</b>  50-316				<b>3. PAGE</b>  1 of 4				
<b>4. TITLE</b>  Weight of Ice Basket Below Minimum Allowed in Technical Specification 3.6.5.1												
<b>5. EVENT DATE</b>			<b>6. LER NUMBER</b>				<b>7. REPORT DATE</b>			<b>8. OTHER FACILITIES INVOLVED</b>		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME Unit 1		DOCKET NUMBER 50-316	
04	26	2003	2003	— 004 —	00	06	25	2003	FACILITY NAME		DOCKET NUMBER	
<b>9. OPERATING MODE</b>			4	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>								
<b>10. POWER LEVEL</b>			00	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)		
				20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)		
				20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)		
				20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)		
				20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A		
				20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)				
				20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)				
				20.2203(a)(2)(v)		X	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)				
				20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)				
				20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)				
<b>12. LICENSEE CONTACT FOR THIS LER</b>												
<b>NAME</b>  Michael Scarpello, Regulatory Affairs								<b>TELEPHONE NUMBER (Include Area Code)</b>  (269) 466-2430				
<b>13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT</b>												
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX			
<b>14. SUPPLEMENTAL REPORT EXPECTED</b>								<b>15. EXPECTED SUBMISSION DATE</b>		MONTH	DAY	YEAR
YES (If Yes, complete EXPECTED SUBMISSION DATE).				X	NO							
<b>16. Abstract (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)</b> On April 26, 2003, Donald C. Cook Nuclear Plant (CNP), during the performance of a routine inspection of the ice bed within the Unit 2 ice condenser, identified that ice basket 11-7-1 weighed 1125 pounds (lbs.). Technical Specification (TS) 3.6.5.1d requires that the ice bed shall be OPERABLE with each ice basket containing at least 1144 lbs. of ice (end-of-cycle). Therefore, the weight of ice basket 11-7-1 did not meet the minimum required weight specified in TS 3.6.5.1d. This condition is reportable pursuant 10 CFR 50.73(a)(2)(i)(B). During the extent of condition evaluation for this event, CNP discovered that during the Unit 1 2002 refueling outage ice basket 24-1-7 fell below the minimum TS weight limit. Ice basket 24-1-7 was emptied and refilled with 1445 lbs. of ice. This condition was not recognized as being reportable at that time. The failure to initiate an LER for ice basket 24-1-7 has been entered into the CNP corrective action program and will be reported in LER 50-315/2002-008-00. Ice basket 11-7-1 was emptied, inspected for damage, and refilled with 1484 lbs. of borated ice. Additionally, in accordance with TS 4.6.5.1.b.2, upon discovery of the low weight in ice basket 11-7-1, an additional 20 ice baskets within the same bay were weighed. The average weight of the 20 additional ice baskets and the discrepant basket (ice basket 11-7-1) was greater than 1144 lbs. Additional administrative requirements will be added to the ice basket inspection procedure to ensure discrepant conditions are evaluated prior to the basket being emptied.												

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## 17. TEXT (If more space is required, use additional copies of NRC Form (366A))

Conditions Prior to Event

Unit 1, MODE 4

Unit 2, MODE 4

Description of Event

On April 26, 2003, Donald C. Cook Nuclear Plant (CNP), during the performance of a routine inspection of the ice bed within the Unit 2 ice condenser, identified that ice basket 11-7-1 weighed 1125 pounds (lbs.). Technical Specification (TS) 3.6.5.1d requires that the ice bed shall be OPERABLE with each ice basket containing at least 1144 lbs. of ice (end-of-cycle). Therefore, the weight of ice basket 11-7-1 did not meet the minimum required weight specified in TS 3.6.5.1d.

Based upon these TS requirements, the discrepant basket and the 20 additional representative baskets were evaluated. This evaluation was performed in accordance with the requirements of 12-EHP-4030-010-262, "Ice Condenser Surveillance and Operability Evaluation," Revision 1. The representative sample of 20 additional baskets were from the same bay and were adjacent to the discrepant basket in order to be representative of the discrepant basket. The result of this data collection revealed the average weight of the 21 ice baskets was 1423 lbs. and the standard deviation was 92.92 lbs. The 95% level of confidence was calculated to be 1388 lbs. This 95% level of confidence value is greater than the 1144 lbs./basket required by TS Surveillance Requirement 4.6.5.1.b.2.

Ice basket 11-7-1 was filled prior to restart of Unit 2 in June 2000. The original weight of the ice in this basket in April 2000 was 1518 lbs. The as-found weight during the Unit 2 2002 refueling outage (U2C13) was 1525 lbs. The as-left weight in January 2002 was 1518 lbs. The as-found weight in the Unit 2 2003 refueling outage (U2C14) was 1125 lbs.

Baskets in row 1 of this part of the ice condenser typically range between losing a maximum of ten pounds to gaining a maximum of fifteen pounds during a cycle. In this case, the basket lost 393 pounds, which is highly unusual. Obtaining an improper weight or some unknown loss of ice could cause this. The surrounding baskets performed as expected without any unexpected results. During U2C13, 13 of the 27 baskets refurbished were row 1 ice baskets from which ice was removed and the baskets re-weighed, including ice basket 11-7-1.

Ice basket 11-7-1 was subsequently emptied, inspected and found undamaged, and refilled in accordance with 12-MHP-5021-010-002, "Ice Condenser Ice Removal and Filling," Revision 1, and ISP-5021-010-005, "Ice Condenser Ice Baskets Removal, Inspection, Repair and Installation." The U2C14 as-left weight of ice basket 11-7-1 was 1484 lbs.

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## 17. TEXT (If more space is required, use additional copies of NRC Form (366A))

Concerns associated with the weight of ice basket 11-7-1 were first identified on April 26, 2003. At that time, CNP considered the weight, as measured, to be suspect. The rate of ice loss due to sublimation appeared excessive. CNP had planned to re-weigh the basket; however, the basket was emptied prior to the request for re-weighing being issued. The causal evaluation for this concern was completed in early June of 2003. Upon completion of the causal evaluation, CNP determined the suspect weight of ice basket 11-7-1 was reportable and the reportability process was entered.

During the extent of condition evaluation for this event, CNP discovered that during the Unit 1 2002 refueling outage, ice basket 24-1-7 fell below the minimum TS weight limit. Ice basket 24-1-7 was emptied and refilled, at that time, with 1445 lbs. of ice. This condition was not recognized as being reportable at that time. This event will be reported to the Nuclear Regulatory Commission in LER 50-315/2002-008-00. The failure to initiate an LER for ice basket 24-1-7 has been entered into the CNP corrective action program.

Cause of Event

The apparent cause of the loss of 393 lbs. of ice from ice basket 11-7-1 cannot be definitively explained. The most likely cause is an error in the weighing process. This event is considered an isolated case.

Analysis of Event

The safety functions associated with this condition are:

1. The ability to absorb thermal energy resulting from a loss of coolant accident or a main steam line break to limit containment pressure rise to less than design pressure immediately following an accident, and to support longer term heat removal (until the ice bed has completely melted).
2. Remove iodine from the containment atmosphere.
3. Provide an inventory source for the containment recirculation sump to support sump recirculation level requirements, sump pH, and sump boron requirements.

There is no safety significance consequence of the condition. The representative sample of 20 additional ice baskets in the same bay revealed the 95% level of confidence weight was 1388 lbs. of ice, which is greater than the minimum of 1144 lbs. The ice condenser would have performed all of its safety functions. The overall mass of ice met the needs of each of the safety functions.

Corrective Actions

Ice basket 11-7-1 was emptied, inspected for damage, and refilled with 1484 lbs. of borated ice.

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## 17. TEXT (If more space is required, use additional copies of NRC Form (366A))

In accordance with TS 4.6.5.1.b.2, upon discovery of the low weight in ice basket 11-7-1, an additional 20 ice baskets within the same bay were weighed. The average weight of the 20 additional ice baskets and the discrepant basket (ice basket 11-7-1), was greater than 1144 lbs.

Procedure 12-EHP-4030-010-262, "Ice Condenser Surveillance and Operability Evaluation," will be revised. This revision will incorporate an engineering verification to ensure as-found weights are consistent with previous as-left weights prior to actions being implemented to correct discrepant conditions.

Previous Similar Events

- LER 50-315/98-007-01, Ice Condenser Weights Used to Determine Technical Specification Compliance Not Representative
- LER 50-315/98-015-01, Ice Weight Requirements Potentially Not Met Due To Nonconservative Assumptions In Software Program
- LER 50-315/98-026-00, T/S Surveillance Requirement 4.6.5.1.b.2 Not Met Due To Failure To Accurately Transfer Requirements Into Plant Procedures
- LER 50-315/2002-008-00, Weight of Ice Basket Below Minimum Allowed in Technical Specification 3.6.5.1

CNP has reviewed the above docketed LERs and has determined that the events associated with the identified LERs were sufficiently different. Therefore, the corrective actions associated with these events would not be expected to prevent the event being reported in LER 50-316/2003-004-00.

During the 2002 Unit 1 refueling outage, CNP identified ice basket 24-1-7 did not meet the minimum weight requirements of TS 3.6.5.1d. This condition was not recognized to be reportable at the time of discovery, but is now considered as a failure to comply with TS 3.6.5.1d and was included in LER 50-315/2002-008-00 to meet the reporting criteria of 10 CFR 50.73(a)(2)(i)(B). The discrepant condition was corrected at the time of discovery.