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Buchanan, MI 49107 1395



December 13, 2002

AEP:NRC:2573-01

Operating License DPR-74  
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  
LICENSEE EVENT REPORT 316/2002-007-00  
UNIT 2 TECHNICAL SPECIFICATION 3.8.1.1  
ALLOWED OUTAGE TIME EXCEEDED

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

LER 316/2002-007-00: "Technical Specification 3.8.1.1 Allowed Outage Time Exceeded."

There are no new commitments identified in this submittal.

Should you have any questions, please contact Mr. Brian A. McIntyre, Manager of Regulatory Affairs, at (269) 697-5806.

Sincerely,

A handwritten signature in black ink, appearing to read 'Joseph E. Pollock', is written over the typed name.

Joseph E. Pollock  
Site Vice President

RAM/jen

Attachment

JE22

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

bc: A. C. Bakken, III  
M. J. Finissi  
S. A. Greenlee  
D. W. Jenkins, w/o attachment  
J. A. Kobyra, w/o attachment  
B. A. McIntyre, w/o attachment  
J. E. Newmiller  
T. P. Noonan  
J. E. Pollock  
D. J. Poupard  
M. K. Scarpello, w/o attachment  
T. K. Woods, w/o attachment

<p>NRC Form 366 U.S. NUCLEAR REGULATORY COMMISSION (7-2001)</p> <h2 style="text-align: center;">LICENSEE EVENT REPORT (LER)</h2> <p style="text-align: center;">(See reverse for required number of digits/characters for each block)</p>	<p>APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004</p> <p><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), US 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></p>
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4. TITLE  
Unit 2 Technical Specification 3.8.1.1 Allowed Outage Time Exceeded

5. EVENT DATE			6. LER NUMBER				7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
11	5	2002	2002	-- 007 --	00	12	13	2002	FACILITY NAME	DOCKET NUMBER	

9. OPERATING MODE	1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
10. POWER LEVEL	100	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)					

**12. LICENSEE CONTACT FOR THIS LER**

NAME Richard A. Meister, Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) (616) 465-5901, 1707
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	EK	65	Woodward	Yes					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>				<b>15. EXPECTED SUBMISSION DATE</b>		
YES (If Yes, complete EXPECTED SUBMISSION DATE)			X	NO		MONTH DAY YEAR

**16. Abstract (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)**

On November 2, 2002, at 0827 hours, the Unit 2 CD Emergency Diesel Generator (EDG), was declared inoperable and Technical Specification (TS) 3.8.1.1, Action "b", was entered in preparation for routine surveillance testing in accordance with TS 4.8.1.1.2.a.5. Within approximately 10 minutes after reaching full load of 3500 kilowatts (kW) during the surveillance test, the CD EDG load began oscillating approximately 150 kW. The amount of time required to correct this condition exceeded the 72-hour allowed outage time requirements of TS 3.8.1.1, Action "b". Donald C. Cook Nuclear Plant (CNP) requested and received enforcement discretion from the Nuclear Regulatory Commission (NRC), to extend the 72-hour allowed outage time by an additional 72 hours. The purpose of this extension was to allow sufficient time to restore the Unit 2 CD EDG to operable status and exit TS 3.8.1.1, Action "b". CNP evaluated the described condition and determined that the risk of operating an additional 72 hours with the Unit 2 CD EDG unavailable was less than the risk associated with a plant shutdown. The apparent cause of the load oscillations was a failure of the electronic governing module in the EDG speed governing system. Corrective actions include replacement of the governor. A formal root cause analysis is in progress to ensure adequate corrective actions to prevent recurrence are identified and implemented.

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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 1, 100 percent power  
Unit 2 - Mode 1, 100 percent power

Description of Event

On November 2, 2002, at 0827 hours, the Unit 2 CD Emergency Diesel Generator (EDG) was declared inoperable and Technical Specification (TS) 3.8.1.1, Action "b", was entered in preparation for routine surveillance testing in accordance with TS 4.8.1.1.2.a.5.

During the test, approximately 10 minutes after the EDG reached full load of 3500 kilowatts (kW), the Unit 2 CD EDG load began oscillating approximately 150 kW. Load on the Unit 2 CD EDG was reduced to approximately 2500 kW and the oscillations ceased. Subsequently, Donald C. Cook Nuclear Plant (CNP) began maintenance activities to troubleshoot and correct the cause of the load oscillations.

On November 2, 2002, at approximately 2120 hours, CNP attempted to "tune" the Unit 2 CD EDG governor [EK - 65]. Following tuning, the EDG was loaded to 3500 kW. Upon reaching full load, the Unit 2 CD EDG load began oscillating approximately 200 kW. The load was again reduced to approximately 2500 kW and the oscillations ceased. At this time, CNP determined the probable cause of the load oscillation was an equipment malfunction associated with the EDG speed control circuitry. To correct the cause of the load oscillations, CNP replaced both the electronic governing module (EGM) and the governor hydraulic actuator (EGB).

On November 3, 2002, at approximately 1108 hours, the Unit 2 CD EDG governor EGM and EGB modules were replaced and post maintenance testing (PMT) of the new equipment was performed. The PMT activities included tuning of the new governor. During the tuning activity, the Unit 2 CD EDG speed was increased using the EGB. At approximately 2222 hours on November 3, 2002, the EGM was placed in service and the EDG speed began swinging, resulting in high field amperage and voltage. The Unit 2 CD EDG was subsequently tripped.

On November 4, 2002, at approximately 0318 hours, the EGM was replaced again and PMT testing was resumed. During preparations for paralleling the Unit 2 CD EDG to the "A" train of the 4 kV distribution system to perform a full load test, a 1-ampere fuse opened in the EDG synchronizing circuit and the EDG test was terminated at 0942 hours on November 4, 2002. Additionally, the synchronizing circuitry is not necessary for the EDG to perform it's safety function. Upon returning the Unit 2 CD EDG to full load, the load began oscillating approximately 500 kW. Additionally, hydraulic actuator governor oil level was not visible in the sightglass. The Unit 2

CD EDG was tripped at 1749 hours on November 4, 2002. The cause of the failure of the newly installed EGB is under investigation.

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

On November 4, 2002, at 2007 hours, CNP contacted the NRC to request enforcement discretion to preclude entry into MODE 3 for Unit 2 at 1427 hours on November 5, 2002. To accomplish this, CNP requested that the Unit 2 72-hour allowed outage time for TS 3.8.1.1, Action "b", be extended by an additional 72 hours. At 2235 hours on November 4, 2002, CNP was granted enforcement discretion.

On November 5, 2002, a 1-ampere fuse and the original EGB were installed and PMT was resumed at approximately 1126 hours. The Unit 2 CD EDG load was again raised to 3500 kW and remained stable. PMT and operability testing were satisfactorily completed at 2159 hours on November 5, 2002, and the Unit 2 CD EDG was declared "available."

On November 6, 2002, at 0049 hours the Unit 2 CD EDG was declared "operable," and TS 3.8.1.1, Action "b" was exited. The Unit 2 CD EDG was inoperable for approximately 88 hours.

Because the amount of time required to correct this condition exceeded the 72-hour allowed outage time requirements of TS 3.8.1.1, Action "b", this condition is reportable in accordance with 50.73(a)(2)(i)(B).

Cause of Event

CNP is conducting a formal root cause investigation into the failure of the Unit 2 CD EDG governor. This root cause investigation is ongoing, and includes hardware failure analysis at the vendor facility. CNP has completed an apparent cause evaluation and concluded the probable cause of the surveillance test failure was failure of the EGM.

Unforeseen difficulties were experienced during the governor replacement and associated post-maintenance testing. These difficulties included an apparent failure of the replacement (EGM and EGB), failure of a 1-ampere fuse in the EDG synchronizing circuitry, and the associated post-installation governor tuning activities. The results of these difficulties required greater time than that provided for in the allowed outage time requirements of TS 3.8.1.1, Action "b".

In accordance with the guidance established in NUREG-1022, Revision 2, "Event Reporting Guidelines," Part 5.1.5, "Supplemental Information and Revised LERs", CNP will issue a supplement to this LER if the final root cause determination for this event differs significantly from the apparent cause.

Analysis of Event

The EDGs provide an automatic onsite source of emergency power for accident mitigation and safe shutdown in the event normal offsite power is lost. At the time of the event, normal offsite power was available and no adverse weather or system outages that could affect its availability were anticipated. Further, the redundant Unit 2 AB EDG was operable.

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

CNP performed an evaluation using the updated 2001 CNP probabilistic risk assessment model. The results of the evaluation indicated there was no net increase in risk due to operating the plant for an additional 72 hours with the Unit 2 CD EDG unavailable when compared with the risk associated with a plant shutdown. A detailed discussion of the analysis is contained in letter AEP:NRC:2016-04, "Request For Notice Of Enforcement Discretion From Technical Specification 3.8.1.1 Limiting Condition for Operation for the CD Emergency Diesel Generator," dated November 6, 2002. CNP concluded that no act was taken or condition established that presented a common-mode failure threat to the redundant Unit 2 AB EDG. This conclusion was based on the fact that no maintenance or testing common to both the Unit 2 AB and CD EDGs was performed and no other common work activity in the vicinity of the Unit 2 AB and CD EDG speed regulators was performed. In addition, the Unit 2 AB and CD EDG EGMs were not installed at the same time.

Corrective Actions

The Unit 2 CD EDG governor was replaced, tested, and declared operable.

CNP is conducting a formal root cause investigation into the failure of the Unit 2 CD EDG governor. This root cause investigation is ongoing, and includes hardware failure analysis at the vendor facility.

Previous Similar Events

LER 50-315/78-017-00, documents a governor failure as a result of water spray.

LER 50-315/75-026-00, documents an input fuse failure due to excessive ambient temperature during battery equalizing charge.

CNP has reviewed the corrective actions associated with the above LERs and determined that the corrective actions implemented could not have prevented the occurrence of this event.