



November 19, 1999

C1199-26  
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Docket Nos.: 50-315  
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 Units 1 and 2  
RESPONSE TO REQUEST FOR ADDITIONAL CLARIFICATION  
INFORMATION ON LICENSE AMENDMENT REQUEST FOR  
CREDIT OF ROD CLUSTER CONTROL ASSEMBLIES FOR COLD LEG  
LARGE BREAK LOSS-OF-COOLANT ACCIDENT SUBCRITICALITY  
(TAC NOS. MA6473 AND MA6474)

- References: 1) I&M to NRC letter C0999-11, "License Amendment Request for Credit of Rod Cluster Control Assemblies for Cold Leg Large Break Loss-of-Coolant Accident Subcriticality," dated September 17, 1999
- 2) NRC to I&M letter, "Request for Additional Information Related to License Amendment Requesting Credit of Rod Cluster Control Assemblies for Cold Leg Large Break Loss-of-Coolant Accident (LOCA) Subcriticality (TAC Nos. MA6473 and MA6474)," dated October 26, 1999
- 3) I&M to NRC letter C1199-16, "Response to Request for Additional Information – License Amendment Request for Credit of Rod Cluster Control Assemblies for Cold Leg Large Break Loss-of-Coolant Accident Subcriticality (TAC Nos. MA6473 and MA6474)," dated November 10, 1999

In Reference 1, Indiana Michigan Power Company (I&M), the Licensee for Donald C. Cook Nuclear Plant Units 1 and 2, proposed to amend Facility Operating License DPR-58 and DPR-74 to allow credit in the applicable subcriticality analysis for the negative reactivity provided by insertion of the rod

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cluster control assemblies during realignment from a cold leg recirculation to a hot leg recirculation configuration.

In Reference 2, the Nuclear Regulatory Commission (NRC) provided a question related to the requested license amendment. Reference 3 provided the I&M response to the NRC question and transmitted Westinghouse Electric Company (WEC), WCAP-15131, Revision 1 (proprietary) and WCAP-15132, Revision 1 (nonproprietary), "Technical Justification for Eliminating Large Primary Loop Pipe Rupture as the Structural Design Basis for the D. C. Cook Units 1 and 2 Nuclear Power Plants," in support of the question response.

During the NRC review of WCAP-15131, Revision 1, the staff has requested clarifications related to its contents. These clarifications were requested during telecommunications held on November 15, 1999, and November 16, 1999. The clarification points are summarized and addressed in the attachment.

I&M has evaluated the attached information, and concludes that the evaluation of significant hazards considerations as contained in Attachment 4 to Reference 1 is not affected by the information provided.

Should you have any questions, please contact me or Mr. Walter T. MacRae, Acting Manager of Regulatory Licensing, at (616) 697-5633.

Sincerely,

Handwritten signature of R. C. Godley in black ink, appearing to read "R. C. Godley for".

R. C. Godley  
Director of Regulatory Affairs

Attachment

\dms

c: J. E. Dyer  
MDEQ - DW & RPD, w/o attachment  
NRC Resident Inspector  
R. Whale, w/o attachment

## ATTACHMENT TO C1199-26

### RESPONSE TO REQUEST FOR ADDITIONAL CLARIFICATION INFORMATION

Indiana Michigan Power Company (I&M), the Licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, provides the following response to the clarifications requested by the NRC during telecommunications held on November 15, 1999, and November 16, 1999. The clarification points are summarized and addressed below:

#### **NRC Clarification Point 1**

“How are torsional moments addressed in the WCAP-15131, Revision 1, (proprietary version) ‘Technical Justification for Eliminating Large Primary Loop Pipe Rupture as the Structural Design Basis for the D. C. Cook Units 1 and 2 Nuclear Power Plants,’ analysis?”

#### **I&M Response 1**

The torsional moments are not addressed by the WCAP-15131 analysis. In the leak-before-break analysis, the governing failure mode of the pipe is a bending failure mode.

Based on the staff’s request, I&M is providing the torsional loadings for the three governing locations discussed in the WCAP (locations 1, 10, and 11) and one additional location requested by the staff (location 5). These are provided in the following table:

Location	Total Faulted MX (in-kips)	Inside Diameter (in.)	Outside Diameter (in.)	Section Modulus Z	Torsional Stresses (psi)
1	1265.3	29.2	34.68	2036.8	310.6
5	2515.3	31.2	37.62	2754.2	456.6
10	2912.8	31.2	37.62	2754.2	528.8
11	3238.2	27.7	32.90	1739.3	930.9

#### **NRC Clarification Point 2**

“Would Westinghouse Electric Company [WEC] release information contained in WCAP-15131, Revision 1, Tables 4-4 and 4-5 for analysis locations 1, 5, 10, and 11, and the results from Table 9-1, from proprietary status to enable the staff to use the information in a Safety Evaluation Report on the submittal, as appropriate?”

**I&M Response 2**

WEC has provided the information requested by the NRC from Tables 4-4, 4-5, and 9-1 to I&M as nonproprietary information to facilitate this response to the staff. This information is presented in the summary tables below:

Chemistry Properties of Selected Locations From Tables 4-4 and 4-5 Applicable to CNP, Units 1 and 2:

Loc.	Heat No.	Ni	C	Mn	Cr	Si	Mo	N	(Cr)e	(Ni)e	F( $\delta$ c)
5	57412	9.33	.07	.87	20.7	.9	2.75	.04	20.91	15.41	18.15
11	C1856	9.66	.08	.98	20.89	.90	2.85	.04	21.24	16.10	16.14
10	39344-2	9.11	.06	.72	20.69	1.41	2.46	.04	21.26	14.82	22.92
1	A355123456B	10.06	.06	.93	20.92	.73	2.73	.04	20.81	15.88	15.69

Information From Table 9-1:

Table 9-1 Leakage Flaw Sizes, Critical Flaw Size and Margins for CNP, Units 1 and 2			
Location	Leakage Flaw Size	Critical Flaw Size	Margin
1	3.87 in.	19.60 <sup>a</sup> in.	5.1 <sup>a</sup>
	3.87 in.	7.74 <sup>b</sup> in.	>2.0 <sup>b</sup>
10	7.79 in.	36.66 <sup>a</sup> in.	4.7 <sup>a</sup>
	7.79 in.	15.58 <sup>b</sup> in.	>2.0 <sup>b</sup>
11	7.04 in.	28.83 <sup>a</sup> in.	4.1 <sup>a</sup>
	7.04 in.	14.08 <sup>b</sup> in.	>2.0 <sup>b</sup>

a = based on limit load

b = based on J integral evaluation