



Nuclear Management Company, LLC  
Point Beach Nuclear Plant  
6610 Nuclear Road  
Two Rivers, WI 54241

NPL 2000-0370

August 16, 2000

10CFR50, Appendix A, GDC 4

Document Control Desk  
U.S. NUCLEAR REGULATORY COMMISSION  
Mail Station P1-137  
Washington, DC 20555

Ladies/Gentlemen:

DOCKETS 50-266 AND 50-301  
DYNAMIC EFFECTS DESIGN BASIS REVIEW REQUEST  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

By letter dated December 2, 1999, Wisconsin Electric Power Company (WE), then licensee for Point Beach Nuclear Plant Units 1 and 2, submitted analyses demonstrating the acceptability of applying leak-before-break methodology to exclude the dynamic effects associated with the postulated rupture of certain piping systems, including portions of the residual heat removal system, pressurizer surge line and accumulator injection piping. The analyses were submitted pursuant to the requirements of 10CFR50, Appendix A, General Design Criterion (GDC) 4, "Environmental and dynamic effects design basis."

Additional information was provided in support of the NRC staff's review in WE letters dated February 21 and July 7, 2000.

During a conference call with NRC staff on July 26, 2000, and in a letter dated August 14, 2000, NRC staff requested additional information regarding the data supplied in the WE letter dated July 7, 2000, concerning Point Beach Leak-Before-Break (LBB) Reports WCAP-15065, WCAP-15105, and WCAP-15107. The attached information is provided in response to this request.

If you require any additional information or have further questions, please contact us.

Sincerely,

A. J. Cayia  
Manager, Site Services & Assessment

Attachment

A001

cc: NRC Resident Inspector NRC Project Manager NRC Regional Administrator PSCW

DOCKETS 50-266 AND 50-301  
DYNAMIC EFFECTS DESIGN BASIS REVIEW REQUEST  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

The following information is provided in response to the Nuclear Regulatory Commission (NRC) staff's request for additional information dated August 14, 2000, related to Wisconsin Electric's review request dated December 2, 1999, and to additional information provided in WE's letter dated July 7, 2000. The purpose of the requested review was for the NRC staff to evaluate the acceptability of applying leak-before-break (LBB) methodology to exclude the dynamic effects associated with the postulated rupture of certain piping systems, including portions of the residual heat removal system, pressurizer surge line and accumulator injection piping.

Responses to the NRC staff's questions were prepared by Westinghouse Electric Company (reference Westinghouse letters dated July 5 and August 4, 2000) and reviewed by Nuclear Management Company (NMC – licensee) personnel. Each question is summarized below with NMC's response following.

Normal (by algebraic summation method) and faulted (by absolute summation method) combined moments, M (including torsion) are provided for the locations requested by the NRC. Normal and faulted axial forces are also included.

Moment, M is combined as follows:

$$M = (M_1^2 + M_2^2 + M_3^2)^{0.5}$$

where  $M_1$  and  $M_2$  are the transverse bending moments and  $M_3$  is the torsional moment.

**Section I: Regarding WCAP-15107 on Accumulator Injection Line Piping LBB**

Provide loading information for the requested nodes, consistent with the format of the response to Question #3 in this section of the July 7, 2000 WE letter.

**Response:**

The following table supplements the corresponding table in the July 7, 2000 WE letter.

**WCAP-15107 on Accumulator Injection Line Piping LBB**

Node	Location	Normal		Faulted	
		Axial Force (lb)	Moment (M) (in-lbs)	Axial Force (lb)	Moment (M) (in-lbs)
10	Unit 1 Tank A	129657	231985	130884	360123
110	Unit 1 Tank A	110047	34191	112158	267360
165	Unit 1 Tank A	47377	23166	49187	217415
225	Unit 1 Tank A	57069	23112	58418	137426
5	Unit 1 Tank B	37747	139237	38537	291400
175	Unit 1 Tank B	38738	60255	40850	196545
310	Unit 1 Tank B	90929	496610	134417	565332
340	Unit 1 Tank B	89113	564670	132777	640210
380	Unit 1 Tank B	104875	678603	153189	763369
400	Unit 1 Tank B	104382	630326	153682	756637

**Section II: Regarding WCAP-15105 on RHR System Piping LBB**

Provide loading information consistent with the format of the response to Question #1 in this section of the July 7, 2000 WE letter, for the requested nodes and conditions as identified in the response to Question #3 of this section.

**Response:**

The following table supplements the corresponding table in the July 7, 2000 letter.

**WCAP-15105 on RHR System Piping LBB**

Normal (with no thermal stratification)			Faulted (with no thermal stratification)		
Node	Axial Force (lb)	Moment (M) (in-lb)	Node	Axial Force (lb)	Moment (M) (in-lb)
Unit 1					
105	131721	311047	105	133109	536256
115	123818	431744	115	127834	574931
130	123554	572910	130	127900	703502
40	122317	361313	40	130696	466218
470	37590	38830	470	40797	453490
Unit 2					
40	122208	375698	40	130935	484547
105	131910	310777	105	133313	488352
115	123174	437662	115	128504	583557
120	123174	545552	120	128506	683183
130	123692	616717	130	127913	753657
135	117922	691843	135	122149	838369

Normal (with thermal stratification)			Faulted (with thermal stratification)		
Node	Axial Force (lb)	Moment (M) (in-lb)	Node	Axial Force (lb)	Moment (M) (in-lb)
Unit 1					
40	128134	916257	40	129299	1016287
50	116646	1084907	50	135080	1174133
65	116646	1232600	65	134784	1299123
75	123556	1130594	75	129132	1215828
Unit 2					
20	123226	121213	20	131813	393526
40	127784	966680	40	128919	1068919
50	116456	1133582	50	135208	1222951
65	116456	1264142	65	134899	1328351
75	123945	1153748	75	128618	1230152
115	117664	689417	115	134014	843563
120	117664	713204	120	134016	864600

Note: The analysis temperature for Node 50 of the Unit 2 RHR line (with thermal stratification) is 290° F.

**Section III: Regarding WCAP-15065 on Surge Line Piping LBB**

Provide loading information consistent with the format of the response to Question #1 in this section of the July 7, 2000 WE letter, for the requested nodes and cases as identified in the response to Question #2 of this section.

**Response:**

The following table supplements the corresponding table in the July 7, 2000 WE letter.

**WCAP-15065 on Surge Line Piping LBB**

Node	Case	Axial Force (lbs)	Moment M (in-lbs)
1030	A	143318	651350
1030	B	143167	709490
1030	C	28375	1231810
1030	D	144496	778290
1030	E	144345	875800
1030	F	28765	1325560
1030	G	29943	1462660
1040	A	143056	625580
1040	B	142905	600810
1040	C	28117	1100980
1040	D	144198	702430
1040	E	144047	743130
1040	F	28529	1211940
1040	G	29671	1339260
1150	A	152611	729910
1150	B	152584	753610
1150	C	34823	1212260
1150	D	152997	767700
1150	E	152970	820460
1150	F	34823	1212280
1150	G	35209	1281170

JG/tat

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