

August 4, 2006

NRC 2006-0068  
10 CFR 50.46

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington DC 20555

Point Beach Nuclear Plant, Units 1 and 2  
Dockets 50-266 and 50-301  
License Nos. DPR-24 and DPR-27

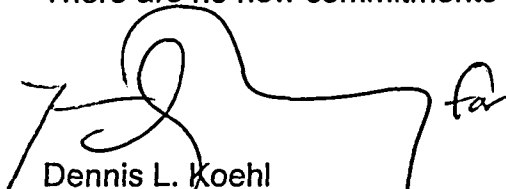
Error Identified in ECCS Evaluation Model, 10 CFR 50.46

As required by 10 CFR 50.46(a)(3)(ii), Nuclear Management Company, LLC (NMC), is submitting this 30-day report of an error discovered in an emergency core cooling system (ECCS) evaluation model for Point Beach Nuclear Plant (PBNP) Units 1 and 2. The affected evaluation model is the 1999 Westinghouse Best Estimate Large Break loss of coolant accident (LOCA) Evaluation Model, Application to Pressurized Water Reactors (PWRs) with Upper Plenum Injection.

The error was identified during the course of a best estimate large break LOCA analysis. A factor of  $\frac{1}{2}$  had been missed from the downcomer nominal gap width (GAPN) calculations from the Point Beach Units 1 and 2 analysis, resulting in downcomer GAPN values twice as big as they should be. The error has been corrected and the effect on peak centerline temperature (PCT) was evaluated.

A representative reference transient was rerun using WCOBRA/TRAC analytical methodology to establish an estimated effect on the PCT. The estimated effect is -3°F for blowdown, and -59°F for the "Reflood 1" condition for Point Beach Units 1 and 2. The error was conservative, in that the margin to the PCT limit has increased relative to the analysis of record. This increased margin provides added assurance that compliance with 10 CFR 50.46 is met and no reanalysis is necessary. The technical summary of this condition and updated PCT rack-up sheets are provided in the enclosure to this letter.

There are no new commitments contained in this submittal.



Dennis L. Koehl  
Site Vice-President, Point Beach Nuclear Plant  
Nuclear Management Company, LLC

Enclosure: ECCS Evaluation Model Changes and Errors

cc: Regional Administrator, Region III, USNRC  
Project Manager, Point Beach Nuclear Plant, USNRC  
Resident Inspector, Point Beach Nuclear Plant, USNRC  
PSCW

**ENCLOSURE**

**ECCS EVALUATION MODEL CHANGES AND ERRORS**

**POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2**

(4 pages follow)

## PCT SUMMARY

### LARGE BREAK PEAK CLADDING TEMPERATURE MARGIN UTILIZATION FOR BELOCA

#### PBNP Units 1 & 2

Analysis of Record (11/2000)	PCT =	2128°F
A. Prior Permanent ECCS Model Assessments		
1. MONTECF Decay Heat Uncertainty Factor	$\Delta$ PCT =	4°F
2. Revised Blowdown Heatup Uncertainty Distribution	$\Delta$ PCT =	5°F
B. Planned Plant Change Evaluations		
1. 1.4% Uprate Evaluation	$\Delta$ PCT =	8°F
C. 2006 ECCS Model Assessments		
1. Inconsistent Vessel Vertical Level Modeling	$\Delta$ PCT =	0°F
2. Revised Downcomer Gap Inputs	$\Delta$ PCT =	-59°F
D. Other	$\Delta$ PCT =	
1. None		0°F
Licensing Basis PCT + Margin Allocations	PCT =	2086°F

### SMALL BREAK PEAK CLADDING TEMPERATURE MARGIN UTILIZATION

#### (Three Inch Cold Leg)

#### PBNP Units 1 & 2

Analysis of Record (11/2000)	PCT =	1157°F/1046°F
A. Prior Permanent ECCS Model Assessments		
1. NOTRUMP Mixture Level Tracking/Region Depletion	$\Delta$ PCT =	13°F
2. NOTRUMP Bubble Rise/ Drift Flux Model Inconsistency	$\Delta$ PCT =	35°F
B. Planned Plant Change Evaluations		
1. None	$\Delta$ PCT =	0°F
C. Permanent ECCS Model Evaluations		
1. None		0°F
D. Temporary ECCS Model Issues		
1. None		0°F
E. Other		
1. None		0°F
Licensing Basis PCT + Margin Allocations	PCT =	1205°F/1094°F

## **REVISED DOWNCOMER GAP INPUTS**

### **Background:**

An error was identified during the course of a Best Estimate large Break LOCA analysis. A factor of ½ had been missed from the downcomer nominal gap width (GAPN) calculations from the Point Beach Units 1 and 2 analysis, resulting in downcomer GAPN values twice as big as they should be. The error has been corrected and the effect on PCT was evaluated. This change represents a Non-Discretionary Change in accordance with Section 4.1.2 of WCAP-13451.

### **Affected Evaluation Model(s):**

1999 Westinghouse Best Estimate Large Break LOCA Evaluation Model, Application to PWRs with Upper Plenum Injection

### **Estimated Effect:**

A representative reference transient was rerun using WCOBRA/TRAC to establish an estimated effect on the PCT. The estimated effect is -3 °F for blowdown, and -59 °F for Reflood 1 for Point Beach Units 1 and 2.

**Westinghouse LOCA Peak Clad Temperature Summary for Best Estimate Large Break****Plant Name:** Point Beach Unit 1**Utility Name:** Nuclear Management Company, LLC**Revision Date:** 7 /10/06**Composite****Analysis Information****EM:** UPI (1999)**Analysis Date:** 9/1/97**Limiting Break Size:** Split**FQ:** 2.6**FdH:** 1.8**Fuel:** 422 Vantage +**SGTP (%):** 25**Notes:** Uprate

	Clad Temp (°F)	Ref.	Notes
<b>LICENSING BASIS</b>			
<b>Analysis-Of-Record PCT</b>	2128	1	
<b>PCT ASSESSMENTS (Delta PCT)</b>			
<b>A. PRIOR ECCS MODEL ASSESSMENTS</b>			
1 . MONTECF Decay Heat Uncertainty Error	4	2	
2 . Revised Blowdown Heatup Uncertainty Distribution	5	4	
<b>B. PLANNED PLANT MODIFICATION EVALUATIONS</b>			
1 . 1.4% Uprate Evaluation	8	3	
<b>C. 2006 ECCS MODEL ASSESSMENTS</b>			
1 . Inconsistent Vessel Vertical Level Modeling	0	5	
2 . Revised Downcomer Gap Inputs	-59	6	
<b>D. OTHER*</b>			
1 . None	0		

**LICENSING BASIS PCT + PCT ASSESSMENTS****PCT =** 2086

- \* It is recommended that the licensee determine if these PCT allocations be considered with respect to 10 CFR 50.46 reporting requirements.

**References:**

- 1 . 99WE-G-0034, "Wisconsin Electric Power Company, Point Beach Units 1 and 2, Final BE UPI LBLOCA Engineering Report (WCAP-15220) for Point Beach Units 1 and 2 (WEP/WIS)," June 24, 1999.
- 2 . WEP-01-008, "10 CFR 50.46 Annual Notification and Reporting for 2000," March 2001.
- 3 . OC-WES-B1-29-2003-006, "Point Beach Unit 1, Cycle 29; Final Reload Safety & Licensing Checklist," November 2003.
- 4 . WEP-05-84, "10 CFR 50.46 Annual Notification and Reporting for 2004," April 2005.
- 5 . LTR-LIS-06-209, "Plant Specific Reporting Text for Various Errors for IR-04-337-M012.08," April 2006.
- 6 . LTR-LIS-06-334, "Updates to the Best Estimate Large Break LOCA PCT Rackup Sheets for Kewaunee (WPS) and Point Beach Units 1 (WEP) and 2 (WIS)," July 2006.

**Notes:**

None

**Westinghouse LOCA Peak Clad Temperature Summary for Best Estimate Large Break****Plant Name:** Point Beach Unit 2**Utility Name:** Nuclear Management Company, LLC**Revision Date:** 7/10/06**Composite****Analysis Information****EM:** UPI (1999)**Analysis Date:** 9/1/97**Limiting Break Size:** Split**FQ:** 2.6**FdH:** 1.8**Fuel:** 422 Vantage +**SGTP (%):** 25**Notes:** Uprate

	Clad Temp (°F)	Ref.	Notes
<b>LICENSING BASIS</b>			
<b>Analysis-Of-Record PCT</b>	2128	1	
<b>PCT ASSESSMENTS (Delta PCT)</b>			
<b>A. PRIOR ECCS MODEL ASSESSMENTS</b>			
1 . MONTECF Decay Heat Uncertainty Error	4	2	
2 . Revised Blowdown Heatup Uncertainty Distribution	5	4	
<b>B. PLANNED PLANT MODIFICATION EVALUATIONS</b>			
1 . 1.4% Uprate Evaluation	8	3	
<b>C. 2006 ECCS MODEL ASSESSMENTS</b>			
1 . Inconsistent Vessel Vertical Level Modeling	0	5	
2 . Revised Downcomer Gap Inputs	-59	6	
<b>D. OTHER*</b>			
1 . None	0		

**LICENSING BASIS PCT + PCT ASSESSMENTS****PCT =** 2086

- \* It is recommended that the licensee determine if these PCT allocations be considered with respect to 10 CFR 50.46 reporting requirements.

**References:**

- 1 . 99WE-G-0034, "Wisconsin Electric Power Company, Point Beach Units 1 and 2, Final BE UPI LBLOCA Engineering Report (WCAP-15220) for Point Beach Units 1 and 2 (WEP/WIS)," June 24, 1999.
- 2 . WEP-01-008, "10 CFR 50.46 Annual Notification and Reporting for 2000," March 2001.
- 3 . NPL 2003-0071, "Final RS&LC Point Beach Nuclear Plant, Unit 2 Cycle 27", February 2003
- 4 . WEP-05-84, "10 CFR 50.46 Annual Notification and Reporting for 2004," April 2005.
- 5 . LTR-LIS-06-209, "Plant Specific Reporting Text for Various Errors for IR-04-337-M012.08," April 2006.
- 6 . LTR-LIS-06-334, "Updates to the Best Estimate Large Break LOCA PCT Rackup Sheets for Kewaunee (WPS) and Point Beach Units 1 (WEP) and 2 (WIS)," July 2006.

**Notes:**

None