



July 3, 2007

NRC 2007-0055
10 CFR 50.46

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

Point Beach Nuclear Plant, Units 1 and 2
Docket 50-266 and 50-301
Renewed License No. DPR-24 and DPR-27

Error Identified in ECCS Evaluation Model
30-Day Report Required by 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 HOTSPOT corrected code was used to reanalyze peak center-line temperature (PCT) for the large break loss-of-coolant-accident. The plant-specific PCT penalty is 5°F for blowdown and 45°F for Reflood 1. The resultant estimated PCT, including all assessments, is 2131°F, which is within 3°F of the analysis of record PCT of 2128 °F. Therefore, PBNP continues to comply with the requirements of 10 CFR 50.46. Enclosure 1 provides the revised PCT summary. Enclosure 2 provides the rack-up sheets supporting this PCT change. This issue has been entered into the PBNP Corrective Action Program.

In accordance with a discussion held on July 2, 2007, between the PBNP Regulatory Affairs Supervisor and the PBNP Nuclear Reactor Regulation Project Manager, the proposed schedule for reanalysis of the ECCS Evaluation Model will be submitted by September 14, 2007.

Summary of Commitments

The proposed schedule for reanalysis of the PBNP ECCS Evaluation Model will be submitted by September 14, 2007.

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

Enclosures (2)

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

ENCLOSURE 1

PCT SUMMARY
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Large Break Peak Cladding Temperature
Margin Utilization for BELOCA

Analysis of Record (November 2000)	PCT =	2128°F
A. Prior Permanent ECCS Model Assessments		
1. MONTECF Decay Heat Uncertainty Error	Δ PCT =	4°F
2. Revised Blowdown Heatup Uncertainty Distribution	Δ PCT =	5°F
3. Revised Downcomer Gap Inputs	Δ PCT =	- 59°F
B. Planned Plant Change Evaluations		
1. 1.4% Uprate Evaluation	Δ PCT =	8°F
C. 2007 ECCS Model Assessments		
1. HOTSPOT Fuel Relocation Error	Δ PCT =	45°F
D. Other		
1. None	Δ PCT =	0°F
Licensing Basis PCT + Margin Allocations	PCT =	2131°F

Small Break Peak Cladding Temperature Margin Utilization
(Three-Inch Cold Leg)

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

HOTSPOT Fuel Relocation (Non-Discretionary Change)

Background

In the axial node where burst is predicted to occur, a fuel relocation model in HOTSPOT is used to account for the likelihood that additional fuel pellet fragments above that elevation may settle into the burst region. It was discovered that the effect of the fuel relocation on local linear heat rate was being calculated, but then canceled out later in the coding. This change represents a Non-Discretionary Change in accordance with Section 4.1.2 of WCAP-13451.

Affected Evaluation Model(s)

- 1996 Westinghouse Best Estimate Large Break LOCA Evaluation Model
- 1999 Westinghouse Best Estimate Large Break LOCA Evaluation Model, Application to pressurized water reactors with upper plenum injection
- 2004 Westinghouse Realistic Large Break LOCA Evaluation Model Using ASTRUM

Estimated Effect

1996 and 1999 BELOCA EMs analyses were assessed on a plant-specific basis, via the HOTSPOT reanalysis of a representative of WCOBRA/TRAC case using the corrected code version at the burst elevation/burst model enabled sub-case. The HOTSPOT 95% probability PCT results were used to establish the plant-specific PCT penalty.

2004 ASTRUM EM analyses were assessed on a plant-specific basis, via the reanalysis of all of the burst cases from the original HOTSPOT calculations using the corrected HOTSPOT code version.

Plant-Specific Text

The plant-specific PCT penalty was 5°F for Blowdown and 45°F for Reflood 1.

ENCLOSURE 2

**PCT RACKUP SHEETS FOR
POINT BEACH NUCLEAR PLANT, 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: 6/4/2007

Composite**Analysis Information**

EM: UPI (1999) **Analysis Date:** 9/1/1997 **Limiting Break Size:** Split
FQ: 2.6 **FdH:** 1.8
Fuel: 422 Vantage + **SGTP (%):** 25
Notes: Uprate

	Clad Temp (°F)	Ref.	Notes
LICENSING BASIS			
Analysis-Of-Record PCT	2128	1	
PCT ASSESSMENTS (Delta PCT)			
A. PRIOR ECCS MODEL ASSESSMENTS			
1 . MONTECF Decay Heat Uncertainty Error	4	2	
2 . Revised Blowdown Heatup Uncertainty Distribution	5	4	
3 . Inconsistent Vessel Vertical Level Modeling	0	5	
4 . Revised Downcomer Gap Inputs	-59	6	
B. PLANNED PLANT MODIFICATION EVALUATIONS			
1 . 1.4% Uprate Evaluation	8	3	
C. 2007 ECCS MODEL ASSESSMENTS			
1 . HOTSPOT Fuel Relocation Error	45	7	
D. OTHER*			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	PCT = 2131		

* 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.
- 7 . LTR-LIS-07-381, "10 CFR 50.46 Reporting Text for HOTSPOT Fuel Relocation Error and Revised PCT Rackup Sheets for Point Beach Units 1 and 2," June 2007.

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: 6/4/2007

Composite**Analysis Information**

EM:	UPI (1999)	Analysis Date:	9/1/1997	Limiting Break Size:	Split
FQ:	2.6	FdH:	1.8		
Fuel:	422 Vantage +	SGTP (%):	25		
Notes:	Uprate				

	Clad Temp (°F)	Ref.	Notes
LICENSING BASIS			
Analysis-Of-Record PCT	2128	1	
PCT ASSESSMENTS (Delta PCT)			
A. PRIOR ECCS MODEL ASSESSMENTS			
1 . MONTECF Decay Heat Uncertainty Error	4	2	
2 . Revised Blowdown Heatup Uncertainty Distribution	5	4	
3 . Inconsistent Vessel Vertical Level Modeling	0	5	
4 . Revised Downcomer Gap Inputs	-59	6	
B. PLANNED PLANT MODIFICATION EVALUATIONS			
1 . 1.4% Uprate Evaluation	8	3	
C. 2007 ECCS MODEL ASSESSMENTS			
1 . HOTSPOT Fuel Relocation Error	45	7	
D. OTHER*			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	PCT =	2131	

* 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.
- 7 . LTR-LIS-07-381, "10 CFR 50.46 Reporting Text for HOTSPOT Fuel Relocation Error and Revised PCT Rackup Sheets for Point Beach Units 1 and 2," June 2007.

Notes:

None