



**Northeast
Nuclear Energy**

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The Northeast Utilities System

MAR 13 2000

Docket No. 50-336
B18021

Re: 10 CFR 50.46(a)

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

Millstone Nuclear Power Station, Unit No. 2
1999 Annual Reporting of Changes to and Errors in
Emergency Core Cooling System Models or Applications

In accordance with 10 CFR 50.46(a)(3)(ii), Northeast Nuclear Energy Company (NNECO) hereby submits changes to and errors in the Emergency Core Cooling System (ECCS) evaluation models or applications of those models for Millstone Unit No. 2.

The last annual report was submitted to the Nuclear Regulatory Commission (NRC) Staff on February 18, 1999⁽¹⁾ and satisfied the annual reporting requirements for the calendar year 1998. The attached annual report covers the period from January 1999 through February 2000. The following is a synopsis of the information provided in Attachment 1.

1. Attachment 1 reports the Siemens Power Corporation (SPC) modifications in the ECCS models applicable to Millstone Unit No. 2. These modifications have resulted in permanent Peak Cladding Temperature (PCT) margin allocation for Unit No. 2. NNECO has previously reported the significant changes to the NRC in a letter dated May 20, 1999,⁽²⁾ to meet the 30-day reporting criterion of 10 CFR 50.46(a)(3)(ii).
2. Considering the changes summarized in Attachment 1, the corrected PCTs for the limiting Small Break Loss of Coolant Accident (SBLOCA) and Large Break Loss of Coolant Accident (LBLOCA) remain below the 2200°F limit as defined by 10 CFR 50.46(b)(1).

⁽¹⁾ R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2 - Annual Reporting of Changes to, and Errors in, Emergency Core Cooling System Models or Applications," dated February 18, 1999.

⁽²⁾ R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2 - Reporting of Changes to, and Errors in, Emergency Core Cooling System Models or Applications," dated May 20, 1999.

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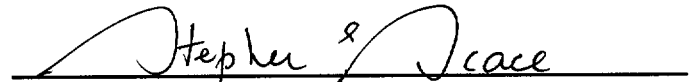
NNECO believes that this information satisfies the annual reporting requirements of 10 CFR 50.46(a)(3)(ii).

There are no regulatory commitments contained within this letter.

If you have any additional questions concerning this submittal, please contact Mr. Ravi G. Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

A handwritten signature in cursive script that reads "Stephen E. Scace". The signature is written in black ink and is positioned above a solid horizontal line.

Stephen E. Scace
Director - Nuclear Oversight and
Regulatory Affairs

Attachment

cc: H. J. Miller, Region I Administrator
J. I. Zimmerman, NRC Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2

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Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Reporting of 10 CFR 50.46 Margin Utilization

March 2000

**1999 Annual Reporting of 10 CFR 50.46 Margin Utilization
 Small Break LOCA**

Plant Name:	Millstone Unit No. 2
Utility Name:	Northeast Nuclear Energy Company

Analysis Information

EM:	EXEM/PWR Small Break	Limiting Break Size:	0.07 ft ²
Analysis Date:	08/98		
Vendor:	Siemens		
Peak Linear Power:	14.6 kW/ft		
Notes:	None		

	<u>Clad Temp(°F)</u>	<u>Notes</u>
LICENSING BASIS		
Analysis of Record PCT	1986	(1)

MARGIN ALLOCATIONS (Δ PCT)

**A. Prior Permanent ECCS Model Assessments
 (Through 12/1998)**

1. None	0	
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B. 10 CFR 50.59 Safety Evaluations

1. None	0	
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**C. Current 10 CFR 50.46 Model Assessments
 (Permanent Assessment of PCT Margin)**

1. Corrected Corrosion Enhancement Factor	+2	
2. Core Nodalization Non-Convergence	-268	(2)
3. Error in Flow Blockage Model in TOODEE2	+1	

D. Temporary ECCS Model Issues

1. None	0	
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E. Other Margin Allocations

1. None	0	
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LICENSING BASIS PCT + MARGIN ALLOCATIONS	PCT = 1721
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NOTES:

- (1) New Analysis of Record.
- (2) Re-evaluation included a break size spectrum analysis and determined that the limiting break size changed from 0.07 ft² to 0.1 ft².

**1999 Annual Reporting of 10 CFR 50.46 Margin Utilization
 Large Break LOCA**

Plant Name: Millstone Unit No. 2
Utility Name: Northeast Nuclear Energy Company

Analysis Information

EM: SEM/PWR-98 **Limiting Break Size:** 1.0 DECLG
Analysis Date: 11/98
Vendor: Siemens
Peak Linear Power: 15.1 kW/ft
Notes: None

	<u>Clad Temp(°F)</u>	<u>Notes</u>
LICENSING BASIS		
Analysis of Record PCT	1814	(1)

MARGIN ALLOCATIONS (Δ PCT)

A. Prior Permanent ECCS Model Assessments

(Through 12/1998)

1. None 0

(Through 01/1999)

2. Corrected Corrosion Enhancement Factor -1 (2)

B. 10 CFR 50.59 Safety Evaluations

1. None 0

C. Current 10 CFR 50.46 Model Assessments

(Permanent Assessment of PCT Margin)

1. ICECON Coding Errors 0

2. Setting RFPAC Fuel Temperatures at Start of Reflood -2

3. SISPNCH/ujun98 Code Error 0

4. Error in Flow Blockage Model in TOODEE2 0

(Through 02/08/2000)

5. Change in TOODEE2-Calculation of QMAX 0

6. Change in Gadolinia Modeling 0

D. Temporary ECCS Model Issues

1. None 0

E. Other Margin Allocations

1. None 0

LICENSING BASIS PCT + MARGIN ALLOCATIONS	PCT = 1811
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NOTES:

(1) New Analysis of Record with SEM/PWR-98 LOCA Evaluation Model

(2) Previously reported in 1998 Annual 10 CFR 50.46 Report.