



**HITACHI**

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M190164

Dockets 52-001 and 52-045  
10 CFR 50.46  
10 CFR 50.46(a)(3)(iii)  
10 CFR Part 52, Appendix A

October 8, 2019

US Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555-0001

**Subject: ABWR Design Certification Annual 10 CFR 50.46 Report for 2019**

Reference:

1. Letter, M.P. Catts (GEH) to Document Control Desk (NRC), M180187, ABWR Design Certification Annual 10 CFR 50.46 Report for 2018, October 29, 2018

GE Hitachi Nuclear Energy (GEH), as the applicant for the ABWR Design Certification (10 CFR Part 52, Appendix A) and its renewal, submits this annual report under 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Reactors." Specifically, Enclosure 1 is the 2019 annual report for the ABWR Design Certification for emergency core cooling system (ECCS) evaluation model changes or errors that affect the peak cladding temperature (PCT) calculation.

This annual report identifies changes, errors, and errors in the application of the ECCS-Loss-of-Coolant Accident (LOCA) evaluation model from the date of issuance of the ABWR design certification in 1997 (per 10 CFR Part 52 Appendix A) to October 1, 2019.

Please contact me if you have any questions regarding this information.

Sincerely,

A handwritten signature in dark ink that reads "Michelle P. Catts". The signature is written in a cursive, flowing style.

Michelle P. Catts  
Senior Vice President, Regulatory Affairs

Commitments: No additional commitments are made.

Enclosure:

1. ABWR Design Certification 10 CFR 50.46 Annual Report – 2019

cc: A. Muniz, NRC  
S. Head, STP  
DBR-0033158 R3

**Enclosure 1**

**M190164**

**ABWR Design Certification 10 CFR 50.46 Annual Report – 2019**

**Advanced Boiling Water Reactor Design Certification**  
**2019 Annual Report Under 10 CFR 50.46(a)(3)(iii)**  
**Emergency Core Cooling System Model**

Plant Name:	Advanced Boiling Water Reactor (ABWR) Design Certification (Docket 52-001; 10 CFR Part 52, Appendix A) and Renewal Application (Docket 52-045)			
Utility Name:	GE Hitachi (as holder of the final ABWR Design Certification)			
Reporting Year: <u>2019</u>				
This ABWR 2019 annual report identifies changes, errors, and errors in the application of the ECCS-LOCA evaluation model from the date of issuance of the ABWR design certification in 1997 (per 10 CFR Part 52 Appendix A) to October 1, 2019.				
	Evaluation Model: SAFER/GESTR (SAFER03)			
		<b><u>LBPCT</u></b>	<b><u>Net PCT Effect</u></b>	<b><u>Absolute PCT Effect</u></b>
	Analysis of Record Licensing Basis PCT	1,149°F		
A.	Prior 10 CFR 50.46 Changes or Error Corrections – Previous Years (itemized below)			
	1999-02 CCFL in Upper Tie Plate, Pre-GE11		+ 25	
	2001-02 Time Step Change for Convergence		+ 25	
	2001-04 Steam Condensed by ECCS Injection		+ 10	
	2002-03 GESTR Input File Interpolation		0	
	2003-01 SAFER Level/Volume Table		+ 10	
	2003-03 Steam Separator Pressure Drop		+ 5	
	2014-01: SAFER04A E4 Revision - Code Changes of Neutral Impact		0	
	2014-02: SAFER04A E4 Revision - Mass Non-Conservatism		0	
	2014-04: SAFER04A E4 Revision – Lower Plenum CCFL Restriction		0	
		ΔPCT =	+ 75°F	+ 75°F
B.	Prior 10 CFR 50.46 Changes or Error Corrections – This Year (itemized below):			
	None		0	
		ΔPCT =	+ 0°F	+ 0°F
C.	Cumulative and Absolute Sum of 10 CFR 50.46 Changes	ΔPCT =	+ 75°F	+ 75°F
	Projected Licensing Basis PCT Based on These Changes	1,224°F		

Most Recent Previous Report (2018): Letter, M. P. Catts (GEH) to Document Control Desk (NRC), "ABWR Design Certification Annual 10 CFR 50.46 Report for 2018," M180187, October 29, 2018.