



**HITACHI**

**GE Hitachi Nuclear Energy**

**Kent Halac, PE**

Senior Engineer, Regulatory Affairs

P.O. Box 780, M/C A60  
Wilmington, NC 28401 USA

T 910 819-5307  
Kent.Halac@ge.com

**M230131**

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

October 4, 2023

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

Subject: **ABWR Design Certification Annual 10 CFR 50.46 Report for 2023**

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 2023 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 4, 2023.

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

Sincerely,

Kent Halac

Project 710 / Docket No. 99902024

M230131  
October 4, 2023

Page 2 of 2

Commitments: No additional commitments are made.

Enclosure:

1. ABWR Design Certification 10 CFR 50.46 Annual Report – 2023

cc: E. Lenning, NRC  
A. Muniz, NRC  
DBR-0033158 R7

**Enclosure 1**

**M230131**

**ABWR Design Certification 10 CFR 50.46 Annual Report – 2023**

**Advanced Boiling Water Reactor Design Certification  
2023 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>2023</u>				
This ABWR 2023 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 4, 2023.				
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)			
		ΔPCT =	+ 75°F	+ 75°F
B.	Prior 10 CFR 50.46 Changes or Error Corrections – Recent Year (itemized below):			
	None			
		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		

The sum of the peak cladding temperature (PCT) from the most recent analysis using an acceptable evaluation model and the estimates of PCT effect for changes and errors identified since this analysis is less than 2,200°F.

Most Recent Previous Report (2022): Letter, M. P. Catts (GEH) to Document Control Desk (NRC), “ABWR Design Certification Annual 10 CFR 50.46 Report for 2022,” M220128, October 4, 2022.