

Enclosure 4

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Technical Report NEDO-33875, Revision 0

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HITACHI

GE Hitachi Nuclear Energy

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Non-Proprietary Information – Class I (Public)

ABWR US Certified Design

Aircraft Impact Assessment

Licensing Basis Information and Design Details for Key Design
Features

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NEDO-33875P Revision 0
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Rev #	Preparer	Date	Revision Summary
0	GEH	11/2016	Initial Issue

INTRODUCTION

GE-Hitachi Nuclear Energy (GEH) submitted an application to renew the Advanced Boiling Water Reactor (ABWR) design certification on December 7, 2010 (MFN 10-343; NRC ADAMS Accession Number ML110040176). The application included a revised Design Control Document (DCD), Revision 5. The application review includes changes to the DCD to address Nuclear Regulatory Commission (NRC) Requests for Additional Information (RAI) and issues that GEH may identify as necessary.

Subsequent to the original design certification (1997), the NRC added to its regulations specific requirements to perform a design-specific assessment of the effects on the facility of the impact of a large, commercial aircraft, as set forth in 10 CFR 50.150. As specified in 10 CFR 50.150(a)(3)(iii)(B), renewal of a standard design certification is to address the requirements by the time of application for renewal. An Aircraft Impact Assessment (AIA) was performed for the renewal application. In the DCD, Revision 5, Appendix 3H and Appendix 19G identified key design features for the aircraft impact assessment. Updates to the ABWR AIA have been made to address NRC RAIs and revised NRC regulatory guidance. The ABWR DCD is revised as necessary to conform to the AIA results.

RESULTS

A design-specific assessment of the effects on the GEH-ABWR certified design (with modifications as part of the renewal of the certified design, including design changes identified as necessary to address the aircraft impact assessment) of the impact of a large, commercial aircraft on the ability to maintain cooling of fuel in the reactor and spent fuel pool (SFP) was performed. The assessment was based on the Commission's specified aircraft characteristics used to define the beyond-design-basis impact of a large, commercial aircraft.

The assessment concludes that cooling of the core is maintained for all postulated strikes by at least one division of core cooling equipment, with limited reliance on operator actions. SFP integrity is maintained for all postulated strike locations. Thus, the GEH ABWR design satisfies the acceptance criteria of 10 CFR 50.150 with reduced use of operator actions.