March 9, 2011

Mr. Jerald G. Head
Senior Vice President, Regulatory Affairs
GE Hitachi Nuclear Energy
3901 Castle Hayne Road MC A-18
Wilmington, NC 28401

SUBJECT: FINAL DESIGN APPROVAL FOR THE ECONOMIC SIMPLIFIED BOILING WATER REACTOR

Dear Mr. Head:

This letter provides the final design approval (FDA) for the economic simplified boiling water reactor (ESBWR) standard design (Enclosure 1) and the U.S. Nuclear Regulatory Commission's (NRC's) Notice of Issuance of an FDA (Enclosure 2). This FDA allows the ESBWR design to be referenced in an application for a construction permit or operating license under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," or an application for a combined license or manufacturing license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." However, this FDA does not constitute a commitment to issue a permit, design certification, or license or in any way affect the authority of the Commission, the Atomic Safety and Licensing Board, or other presiding officers in any proceeding under 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders."

Issuance of this FDA signifies completion of the NRC staff's technical review of General Electric (GE) Hitachi Nuclear Energy's ESBWR design. The NRC staff performed its technical review of the ESBWR design control document in accordance with the standards for review of standard design approval applications set forth in 10 CFR 52.139, "Standards for Review of Applications," as modified by the exemptions identified in Section 1.8 of the NRC's final safety evaluation report (FSER) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML103470210).

On the basis of its evaluation and independent analyses, as described in the FSER, the NRC staff concludes that GE Hitachi Nuclear Energy's application for standard design approval meets the applicable portions of 10 CFR 52.137, "Contents of Applications; Technical Information," and the review standards in 10 CFR 52.139.

The duration of this FDA is 15 years in accordance with 10 CFR 52.147, “Duration of Design Approval.” If the ESBWR design is subsequently certified, then this FDA will be updated, as needed, to conform to any changes resulting from the design certification rulemaking. If you have questions about this approval, please contact Amy E. Cubbage at 301-415-2875.

Sincerely,

/RA/

Michael R. Johnson, Director
Office of New Reactors

Docket No. 52-010

Enclosures:
As stated

cc: w/encls: See next page

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/RA/

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ADAMS Accession No: ML110540310 *via e-mail NRO-002

OFFICE	PM:BWR:DNRL:NRO	LA:BWR:DNRL:NRO	Tech Ed:ADM	BC:BWR:DNRL:NRO
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DATE	03/03/2011	02/23/2011	02/23/2011	02/24/2011
OFFICE	D:DNRL:NRO	OGC:NLO*	D:NRO	
NAME	DMatthews (FAsktulewicks for)	RWeisman	MJohnson	
DATE	03/09/2011	02/25/2011	3/09/2011	

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DOCKET NO. 52-010

ECONOMIC SIMPLIFIED BOILING WATER REACTOR STANDARD DESIGN

FINAL DESIGN APPROVAL

PURSUANT TO SUBPART E OF 10 CFR PART 52

(1) On August 24, 2005, GE Hitachi Nuclear Energy (GEH) submitted a standardized design for a major portion of a nuclear power facility of the type described in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.22, "Class 103 Licenses; for Commercial and Industrial Facilities," to the U.S. Nuclear Regulatory Commission (NRC) staff for its review. Revision 9 of the design control document (DCD) for the economic simplified boiling water reactor (ESBWR) describes GEH's standard design (Agencywide Documents Access and Management System (ADAMS) Accession No. ML103440266).

(2) The DCD and its references contain design information that Subpart E, "Standard Design Approvals," of 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," requires for a standard plant design. The ESBWR standard design is a nuclear power facility with a rated reactor core power level of 4,500 megawatts thermal; Section 1.1.2.1 of the DCD defines the scope of this design.

(3) The NRC staff and the Advisory Committee on Reactor Safeguards (ACRS) reviewed the ESBWR standard design. The final safety evaluation report dated March 9, 2011, presents the findings of the staff's evaluation of the ESBWR standard design (ADAMS Accession No. ML103470210). The ACRS reported on the ESBWR design in a letter dated October 20, 2010 (ADAMS Accession No. ML102850376).

(4) On the basis of its review and the findings reported in the final safety evaluation report, the NRC staff concludes that the information in the DCD about the ESBWR design described in item (2) above complies with the requirements in Subpart E of 10 CFR Part 52.

(5) The staff finds the ESBWR standard design acceptable for use as a reference design for a construction permit, operating license, or combined license application for a facility that is located at a site whose characteristics fall within the site parameters specified in the DCD and provided that portions of the facility that are outside the scope of the approved standard design and interface with the approved standard design conform to the interface requirements given in the DCD.

(6) This final design approval (FDA) and all applications that reference it are subject to all applicable provisions of the Atomic Energy Act of 1954, as amended, and to the rules, regulations, and orders of the Commission now or hereafter in effect. In addition, an applicant who references this FDA shall incorporate into its application the operational requirements specified in the DCD, including the technical specifications and availability controls in Chapter 19 of the DCD.

(7) This FDA does not constitute a commitment to issue a permit, design certification, or license or in any way affect the authority of the Commission, the Atomic Safety and Licensing Board, or other presiding officers in any proceeding under 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders."

(8) This FDA is effective on March 9, 2011, and will expire on March 9, 2026, unless the NRC staff extends the date. The expiration of the FDA shall not affect its use in applications docketed before such date.

Dated in Rockville, Maryland, this 9th day of March, 2011.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Michael R. Johnson, Director
Office of New Reactors

cc:

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