RULEMAKING ISSUE
(Notation Vote)

January 7, 2011 SECY-11-0006

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: PROPOSED RULE—ECONOMIC SIMPLIFIED BOILING-WATER REACTOR DESIGN CERTIFICATION

PURPOSE:

To obtain the Commission's approval to publish in the *Federal Register* the enclosed proposed rule that would amend Title 10 of the *Code of Federal Regulations* (10 CFR), Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," to certify the Economic Simplified Boiling-Water Reactor (ESBWR) standard design.

BACKGROUND:

GE-Hitachi Nuclear Energy (GEH) submitted an application for certification of its ESBWR standard design on August 24, 2005. The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the ESBWR standard design and issued an advanced final version of its "Safety Evaluation Report Related to Certification of the ESBWR Standard Design" at Agencywide Documents Access and Management System (ADAMS) Accession No. ML103070392. The final version of the safety evaluation report (SER), which will only make editorial (correction of typographic, grammatical, and cross-referencing errors) and conforming changes to the final revision of the design control document (DCD) and reflect the Commission's staff requirements memorandum on this paper, will be issued prior to publishing the proposed rule in the *Federal Register*.

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301-415-0016

As of July 29, 2010, the standard design application has been referenced in the following combined license (COL) applications:

COL Name	Docket Date	Docketing *Federal Register* Citation	Projected Safety Evaluation Report Completion Date
Fermi Unit 3	December 2, 2008	73 FR 73350	March 31, 2012

DISCUSSION:

Technical, Regulatory, and Policy Issues

Human Factors Engineering (HFE) Operational Program Elements Exclusion from Finality

The staff is implementing existing Commission policy, that operational programs should be excluded from finality except where necessary to find design elements acceptable, in a manner different from other existing design certification rules. This policy is described in the December 6, 1996, staff requirements memorandum to SECY-96-077, "Certification of Two Evolutionary Designs," dated April 15, 1996. The staff proposes to exclude the two HFE operational program elements in Chapter 18 of the ESBWR DCD from the scope of the design approved in the rule. There are 12 elements in the HFE program. Two of the elements concern operational programs (procedures and training) that are not used to assess the adequacy of the HFE design. However, the GEH description of these two HFE operational programs addresses existing NRC guidelines in NUREG-0711, Revision 2, "Human Factors Engineering Program Review Model," which are comprehensive, and go beyond the operational program information needed as input to the HFE design. In addition, the training and procedure elements included in the HFE program are redundant to what is reviewed as part of the operational programs described in Chapter 13 of the Standard Review Plan. Accordingly, the staff is revising the HFE regulatory guidance in NUREG-0711 to address this overlap, but the revised guidance is not expected to be completed until late 2011. In keeping with the established Commission policy of not approving operational program elements through design certification except where necessary to find design elements acceptable, the staff proposes to exclude the two HFE operational program elements in the ESBWR DCD from the scope of the design approved in the rule. This would be done explicitly in Section VI, Issue Resolution, of the rule, by excluding the two HFE operational program elements from the finality accorded to the design. In keeping with the Commission policy on this matter, the two HFE operational program elements in the ESBWR DCD are excluded from the scope of the design approved in the rule. This would be done explicitly in Section VI, Issue Resolution, of the rule, by excluding the two HFE operational programs from the finality accorded to the design. This exclusion would be unique to the ESBWR design because all other DCDs for the previously certified designs do not include operational program descriptions of HFE training and procedures and the respective design certification rules (DCRs) did not include specific exclusions from finality for it. The staff is coordinating with other design certification applicants to ensure that other DCRs need not include similar exclusions.

Aircraft Impact Inspection Results

On July 26-28, 2010, and August 30 to September 1, 2010, the staff conducted an inspection of GEH's aircraft impact assessment (AIA) performed in support of its proposed certification of the ESBWR design. On October 5, 2010, the staff issued its inspection report and a Severity Level

IV Notice of Violation (NOV) (ADAMS Accession No. ML102740292) to GEH for failing to use realistic analyses for certain aspects of its AIA and failing to fully identify and incorporate those design features and functional capabilities credited in the AIA into the design. With the exception of the issues identified in the NOV, the staff concluded that the AIA complies with the applicable requirements of 10 CFR 50.150. GEH submitted its response to the NOV on October 26, 2010 (ADAMS Accession No. ML103010047), stating it has resolved the staff's concerns in its submission of Revision 8 to the DCD. On November 10, 2011, the staff informed GEH that certain aspects of their response to the NOV need to be addressed in further detail. GEH responded to the staff's concerns by letter dated December 3, 2010 (ADAMS Accession No. ML103400150), and by submitting Revision 9 to the DCD. The staff finds GEH's letter and DCD Revision 9 to be generally responsive to the findings described in the NOV and has found the resolution to be acceptable. The staff has no outstanding issues from the inspection of the ESBWR AIA.

Design Acceptance Criteria (DAC)

The use of DAC for the ESBWR design is consistent with the policy implemented in all previous design certifications. The ESBWR includes DAC in the areas of piping, digital instrumentation and controls (I&C), and HFE. The DAC provided in Tier 1 of the DCD, combined with design information and appropriate design methodologies, codes, and standards provided in Tier 2 of the DCD, provide sufficient detail to provide an adequate basis for the NRC to make a final safety determination. The use of DAC for ESBWR is described in Section 14.3 of the DCD Tier 2. Chapters 3, 7, and 18 of the DCD describe the piping, digital I&C, and HFE design methodologies, codes, and standards, respectively.

Access to Safeguards Information (SGI) and Sensitive Unclassified Non-Safeguards Information (SUNSI)

Consistent with proposed rule for amending the Advanced Boiling Water Reactor (ABWR) design certification (ref. SECY-10-0142, page 6), the staff is proposing to include in this rule paragraph E of Section VI, "Issue Resolution," which describes the procedure that an interested member of the public must follow to obtain access to SGI and SUNSI for the ESBWR design to request and participate in proceedings that involve licenses and applications that reference the ESBWR design.

Rulemaking Procedure

The standard design certification is being conducted under the applicable requirements of Subpart B of 10 CFR Part 52, "Standard Design Certifications," and 10 CFR Parts 2 and 51, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders" and "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions." The rulemaking package includes the *Federal Register* notice of proposed rulemaking and the ESBWR environmental assessment. In addition, the *Federal Register* notice provides a 75-day period for the public to comment on those documents as well as the ESBWR DCD, which would be incorporated by reference into the DCR. The DCD is available on the NRC's public Web site at http://www.nrc.gov/reactors/new-reactors/design-cert/esbwr.html. Consistent with the ABWR proposed rule described above, the ESBWR proposed rule *Federal Register* notice provides the procedure for a member of the public to request access to SGI and SUNSI in order to comment on the ESBWR proposed rule.

RESOURCES:

The Office of New Reactors has budgeted 0.6 full-time equivalent (FTE) to manage this rulemaking in its fiscal year (FY) 2011 budget. The Office of the General Counsel and the Office of Administration have budgeted a total of 0.1 FTE each in FY 2011 for this rulemaking. The Office of Information Services has budgeted <0.1 FTE for FY 2011 for this rulemaking. Resources for FY 2012 and beyond, if necessary, will be requested through the planning, budget, and performance management process.

RECOMMENDATIONS:

That the Commission:

1. Approve the proposed amendment to 10 CFR Part 52 for publication in the *Federal Register*, including the proposed exclusion of HFE procedures and training from design certification finality.

2. Certify that this rule, if promulgated, will not have a negative economic impact on a substantial number of small entities in order to satisfy requirements of the Regulatory Flexibility Act (5 U.S.C. 605(b)).

3. Determine that neither the backfit rule (10 CFR 50.109, "Backfitting"), nor any of the finality provisions in 10 CFR Part 52, apply to this proposed design certification rule.
4. Note:

    a. The proposed DCR (Enclosure 1) will be published in the *Federal Register* for a 75-day comment period.

    b. An environmental assessment and finding of no significant impact has been prepared (Enclosure 2).

    c. This proposed rule contains new information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). The information collection requirements must be submitted to the Office of Management and Budget for approval on or immediately after the date of publication of the proposed rule in the *Federal Register*.

    d. The Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification regarding the economic impact on small entities and the reasons for it as required by the Regulatory Flexibility Act (Section XIII of Enclosure 1).

    e. The appropriate congressional committees will be informed.

    f. The Office of Public Affairs will issue a press release.

    g. The staff will use a communications plan with frequently asked questions prepared specifically for the ESBWR standard design.

COORDINATION:

The Office of the General Counsel (OGC) has no legal objection to the proposed ESBWR design certification rulemaking. The Chief Financial Officer has reviewed this paper for resource implications and has no objections. The Office of Information Services has reviewed this paper for information technology and information management implications and concurs on it. The staff briefed the Advisory Committee on Reactor Safeguards (ACRS) on the ESBWR draft final safety evaluation report on October 7, 2010. The ACRS issued a letter dated October 20, 2010 (ADAMS Accession No. ML102850376), to the Commission stating that the ESBWR design is robust and there is reasonable assurance that it can be built and operated without undue risk to the health and safety of the public. An information copy of the enclosed *Federal Register* notice will be provided to the ACRS after publication.

/RA by Martin J. Virgilio for/

R. W. Borchardt
Executive Director
for Operations

Enclosures:
1. *Federal Register* Notice
2. Environmental Assessment

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1. *Federal Register* Notice
2. Environmental Assessment

EDATS: NRO-2010-0020

ADAMS Accession No.: ML102210471 (pkg) *via email SECY-012

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