

FINAL SUPPORTING STATEMENT
FOR
FINAL RULE
APPENDIX E TO 10 CFR PART 52
DESIGN CERTIFICATION RULE FOR THE ESBWR DESIGN
(3150-0151)

REVISION

Description of the Information Collection

The U.S. Nuclear Regulatory Commission (NRC or Commission) is amending its regulations at Title 10 of the *Code of Federal Regulations* (10 CFR), Part 52 to certify the Economic Simplified Boiling-Water Reactor (ESBWR) standard plant design. This action is necessary so that applicants or licensees intending to construct and operate an ESBWR design may do so by referencing this design certification rule (DCR), and need not demonstrate in its application the safety of the certified design as amended. Subpart B of 10 CFR Part 52 establishes the process for obtaining design certifications. The addition of Appendix E to 10 CFR Part 52 allows interested parties to reference the ESBWR design in an application for a combined license (COL). The information collection requirements of 10 CFR Part 52 were based largely on the requirements for licensing nuclear facilities under 10 CFR Part 50. Therefore, the burden for 10 CFR Part 52 resulting from the addition of a design certification is minimal.

A. JUSTIFICATION

Part 52 of 10 CFR, "Licenses, Certifications, and Approvals for Nuclear Power Plants," Subpart B, presents the process for obtaining standard design certifications. Section 52.63, "Finality of standard design certifications," provides criteria for determining when the Commission may amend the certification information for a previously certified standard design in response to a request for amendment from any person.

On August 24, 2005 (70 FR 56745), GE-Hitachi Nuclear Energy (GEH) tendered its application for certification of the ESBWR standard plant design with the NRC in accordance with Subpart B of 10 CFR Part 52. The NRC formally accepted the application as a docketed application for design certification (Docket No. 52-010) on December 1, 2005 (70 FR 73311).

The NRC is seeking clearance with respect to the changes to 10 CFR Part 52 related to issuance of this DCR for the ESBWR design.

1. Need for and Practical Utility of the Collection of Information

This appendix to 10 CFR Part 52 constitutes design certification for the ESBWR standard plant design, under Subpart B of 10 CFR Part 52, and allows interested parties to reference this design in an application for a COL. This new appendix represents an increase in burden, some of which is covered under 10 CFR Parts 50 and 52, as described below and shown in Tables 1 and 2.

Section IV.A.2.a requires a plant-specific design control document (DCD) as part of a COL application. This section partially fulfills the requirements for contents of applications for a COL (10 CFR 52.79) and ensures that the COL applicant commits to complying with the DCD.

- Section IV.A.2.b requires reports on departures from and updates to the DCD, under Section X.B of Appendix E, in the COL application. This section ensures that the COL application is up-to-date.
- Section IV.A.2.c requires plant-specific technical specifications (10 CFR 50.36 and 50.36a). This information collection is the same as for 10 CFR 50.36, but the timing of the burden is earlier.
- Section IV.A.2.d requires information demonstrating compliance with site parameters and interface requirements. This section fulfills part of the requirements for a COL (10 CFR 52.79).
- Section IV.A.2.e requires the COL applicant to address action items in the generic DCD. This section fulfills part of the requirements for a COL (10 CFR 52.79).
- Section IV.A.2.f requires information required by 10 CFR 52.47(a) that is not within the scope of this design certification. This section fulfills part of the requirements for a COL (10 CFR 52.79).
- Section IV.A.2.g requires the applicant to include 1) information demonstrating that hurricane loads on those structures, systems, and components described in Section 3.3.2 of the generic DCD are either bounded by the total tornado loads analyzed in Section 3.3.2 of the generic DCD or will meet applicable NRC requirements with consideration of hurricane loads in excess of the total tornado loads; and 2) hurricane generated missile loads on those structures, systems, and components described in Section 3.5.2 of the generic DCD are either bounded by tornado generated missile loads analyzed in Section 3.5.1.4 of the generic DCD or will meet applicable NRC requirements with consideration of hurricane generated missile loads in excess of the tornado generated missile loads. (The estimated burden to address this requirement is 800 hours per respondent and belongs under 10 CFR 52.79. Current COL applicants are bounded by the DCD tornado loads and no additional burden is expected. The NRC is not aware of prospective applicants to reference the ESWR DCR over the next 3 years.)
- Section IV.A.2.h requires the applicant to include information demonstrating that the spent fuel pool level instrumentation is designed to allow the connection of an independent power source, and that the instrumentation will maintain its design accuracy following a power interruption or change in power source without recalibration. (The estimated burden to address this requirement is 20 hours per respondent and belongs under 10 CFR 52.79. This requirement is a post-Fukushima lessons learned action for which the Commission issued an Order to all power reactor licensees and holders of construction permits in active or deferred status. Current COL applicants are addressing this matter in their applications.)

- Section IV.A.3 requires the applicant to include, in the plant-specific DCD, the proprietary and safeguards information referenced in the generic DCD to ensure that the applicant has actual notice of these requirements. This section fulfills part of the requirements for contents of applications for a COL (10 CFR 52.79).
- Section X.A.1 requires the applicant for this design certification to maintain the generic DCD and the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information for the period that this certification may be referenced. This section ensures that the design information will be available to applicants that may reference this design certification and is similar to the requirements in 10 CFR 50.71(e).
- Section X.A.2 requires an applicant or licensee who references this design certification to maintain the plant-specific DCD throughout the period of the application and for the term of the license. This section is similar to the requirements in 10 CFR 50.71(e).
- Section X.A.3 requires an applicant or licensee to prepare and maintain the bases for its changes to this design certification throughout the period of the application and the term of the license. This section is similar to the requirements in 10 CFR 50.59(d).
- Section X.A.4.a requires an applicant to maintain a copy of the aircraft impact assessment (AIA) performed to comply with the requirements of 10 CFR 50.150(a) for the term of the certification (including any period of renewal).
- Section X.A.4.b requires applicants or licensees who reference this design certification to maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) throughout the pendency of the application and for the term of the license (including any period of renewal).
- Section X.B.1 requires applicants or licensees who reference this design certification to submit reports on departures from the plant-specific DCD. This section is similar to the requirements in 10 CFR 50.59(d)(2).
- Section X.B.2 requires applicants or licensees who reference this design certification to submit updates to its DCD which reflect generic changes to and plant-specific departures from the generic DCD. This section is similar to the requirements in 10 CFR 50.71(e).
- Section X.B.3 specifies the timing for the submittals required by Sections X.B.1 and X.B.2 of Appendix E.
- Section X.B.3.a requires submittal of reports and updates to the generic DCD with the initial COL application. This requirement ensures that the initial application is up-to-date and partially fulfills the requirements contents of applications in 10 CFR 52.79.

- Section X.B.3.b requires that during the period of review of the application and construction of a facility that references this design certification, summary reports on changes to the design must be submitted semi-annually. These reports are needed to provide timely notification of design changes during the critical period of application review and facility construction.
- Section X.B.3.c states that after the Commission has authorized operation of the nuclear plant, the frequency for submitting reports and updates returns to the frequency required by 10 CFR 50.59 and 50.71, respectively.

2. Agency Use of Information

In general, the information collections required by the above sections partially fulfill the requirements for a COL application that references this design certification and requires the applicant or licensee to maintain records in the same manner as 10 CFR Part 50. This information is needed by the NRC in order to fulfill its responsibilities in the licensing of nuclear power plants. The requirement to report changes to the certified design during the interval from the application for a COL until an authorization to operate is issued is to provide for NRC monitoring of changes to the facility and a common understanding of how the as-built facility conforms to the certified design. In addition, the NRC must make a finding pursuant to 10 CFR 52.103(g) that the inspections, tests, analyses, and acceptance criteria (ITAAC), which are described in the DCD, are met in the as-built design. To make its finding, the NRC will tailor its inspection program to monitor the construction and initial testing of the facility, and will adjust its program to accommodate these changes.

3. Reduction of Burden through Information Technology

There are no legal obstacles to reducing the burden associated with this information collection. The final rule does not prescribe the manner in which the information is reported. The licensee is at liberty to utilize advanced information technology to reduce the burden. The NRC encourages respondents to use automated information technology when it would be beneficial to them. NRC issued a regulation (68 FR 58792; October 10, 2003), consistent with the Government Paperwork Elimination Act, which allows its licensees, vendors, applicants, and members of the public the option to make submissions electronically via CD-ROM, e-mail, special Web-based interface, or other means. It is estimated that 100 percent of the applications will be submitted electronically.

4. Effort to Identify Duplication and Use Similar Information

There is no duplication of requirements and this information is not available from any source other than the applicants involved. The information required by the NRC in applications, reports, or records concerning the licensing of nuclear power plants does not duplicate other Federal information collection requirements. The NRC has in place an ongoing program to examine all information collections with the goal of eliminating duplication and/or unnecessary information collections.

5. Effort to Reduce Small Business Burden

The information collection required by this regulation is not expected to be a burden on small business because only large companies appear to have the technical and financial resources to support the large capital investment required to design and construct these nuclear power plants. Therefore, small businesses are not expected to be seeking a design certification, COL, or manufacturing license made available by 10 CFR Part 52. No small entities are expected to be impacted by the final rule.

6. Consequences to Federal Program or Policy Activities if the Collection is not Conducted or is Conducted Less Frequently

This information is not collected on a repetitive basis from a single applicant. Indeed, the idea of design certification is to make it unnecessary to collect the same information from multiple applicants for COLs. Thus, the rule provides for less frequent collection. However, the NRC cannot collect the information any less frequently than provided in this rule. Less frequent collection of the information required by this regulation would compromise NRC ability to make appropriate licensing decisions and adversely affect the administration of the duties of the NRC under the law. Applications, and thus information collections, are required only when licensing is sought.

7. Circumstances Which Justify Variation from OMB Guidelines

The information collections mentioned in this rule contain no variation from the Office of Management and Budget (OMB) guidelines contained in 5 CFR 1320.6.

8. Consultations Outside the NRC

The NRC coordinated this effort with GE-Hitachi Nuclear Energy (the applicant) for this certification, as well as the Nuclear Energy Institute. The NRC also held public workshops on issues pertinent to DCRs and the procedures under which such rules will be promulgated.

Opportunity for public comment on the information collection requirements for this clearance package was published in the *Federal Register* concurrent with issuance of the proposed rule on March 24, 2011 (76 FR 16549). The NRC received 10 comment submissions on this rulemaking. The comments addressed topics including the design's capability to withstand floods and station blackout conditions, as well as lessons learned from the Fukushima Dai-ichi accident. No changes from the proposed rule have been made in the final rule as a result of public comments. There were no public comments submitted on the information collection requirements for this rulemaking.

9. Payments or Gifts to Respondents

Not applicable.

10. Confidentiality of Information

Confidential and proprietary information is protected in accordance with NRC regulations at 10 CFR 9.17(a) and 10 CFR 2.390(b).

11. Justification for Sensitive Questions

No sensitive questions are asked in this rule.

12. Estimate of Annualized Burden and Burden Hour Cost

See the attached tables. Most of the information collection requirements for licensing nuclear plants are covered under 10 CFR Part 50 (3150-0011) and 10 CFR Part 52 (3150-0151). The application for certification of the ESBWR design has been referenced in five COL applications. Only two of those COL applications are currently active. The COL application review period is estimated to be approximately 2.5 years and the construction period is estimated to be approximately 4 years in duration. Therefore, the only burden associated with this rule will be for reporting under Sections X.B.1 and X.B.2 and recordkeeping under Sections X.A.1 and X.A.4. Although the frequency of reporting can be as often as 4 times that required by 10 CFR 50.59(d)(2) (once every 24 months) vs. semi-annually, the information to be reported is unchanged. The remaining burden is associated with the operations phase of the license and will be captured under the 10 CFR Part 50 clearance.

Total Burden and Burden Hour Cost

The burden for the annualized reporting burden is given in Table 1. The burden for the annualized recordkeeping burden is given in Table 2. The total annualized burden for all information collections is 383.7 hours, broken down as follows:

- 340.7 hours for annual reporting burden
- 43 hours for annual recordkeeping burden

The annual estimated cost for the collection is \$104,366 (383.7 hours x \$272/hr.).

13. Estimate of Other Additional Costs

The NRC has determined that the records storage cost is roughly proportional to the recordkeeping burden cost. Based on a typical clearance, the recordkeeping storage cost has been estimated to be equal to .0004 percent of the recordkeeping burden. Therefore, the annual recordkeeping storage cost for this collection is estimated to be \$5 (43 recordkeeping hours x \$272 x 0.0004).

14. Estimated Annualized Cost to the Federal Government

The NRC anticipates that two COL applicants will reference this design certification over the next 3 years. The information collection requirements for this final rule will fulfill a portion of the information collections for a COL, which is covered under OMB Clearance Nos. 3150-0011 and 3150-0151. Therefore, the majority of the cost to the Federal Government is covered under other clearances. The NRC's review of the information

collected under this final rule is a portion of those estimates and the cost is fully recovered through fee assessments to the applicant under 10 CFR Parts 170 and 171.

15. Reasons for Change in Burden or Cost

This final rulemaking constitutes design certification for the ESBWR standard plant design through the addition of Appendix E to 10 CFR Part 52. This appendix allows interested parties to reference the ESBWR design in an application for a COL. The addition of Appendix E increases the total annual burden by 383.7 hours (from 198,842 to 199,226), which includes an increase by 340.7 burden hours for reporting (from 194,867 to 195,208) and 43 burden hours for recordkeeping (from 3,975 to 4,018). It also results in the addition of three respondents (from five to eight) and five responses (from 11 to 16). The new respondents are GE-Hitachi Nuclear Energy (the design certification applicant), Detroit Edison Company (COL applicant), and Dominion Virginia Power (COL applicant). There is a corresponding cost increase of \$104,366 (383.7 hours x \$272/hr.).

In the final rule the NRC is adding Section IV.A.2.g and IV.A.2.h to this information collection to address two issues raised after the publication of the proposed rule. Paragraph IV.A.2.g excludes from finality the narrow issue of loads on applicable SSCs from hurricane and hurricane-generated missiles, but only to the extent that such loads are not bounded by other loads analyzed in the ESBWR DCD. Paragraph IV.A.2.h requires demonstrating that the spent fuel pool level instrumentation is designed to allow the connection of an independent power source, and that the instrumentation will maintain its design accuracy following a power interruption or change in power source without recalibration. The burden for each of these additions is covered under the burden for 10 CFR 52.79 and thus does not affect the increase in burden due to the addition of Appendix E as estimated in this supporting statement.

16. Publication for Statistical Use

This information is not published for statistical use.

17. Reason for not Displaying Expiration Date

The requirement will be contained in a regulation. Amending the *Code of Federal Regulations* to display information that, in an annual publication, could become obsolete would be unduly burdensome and too difficult to keep current.

18. Exceptions to the Certification Statement

None.

COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

Not applicable.

TABLE 1**ANNUALIZED REPORTING BURDEN FOR APPENDIX E TO 10 CFR PART 52**

Section	No. of Respondts	Responses / Respondt	Total No. of Responses	Burden per Response	Total Annual Burden (Hrs)	Cost @ \$272/Hr
IV.A.2.a (Burden covered 10 CFR 52.79)						
IV.A.2.b (Burden included in X.B below)						
IV.A.2.c (Burden covered 10 CFR 52.79)						
IV.A.2.d (Burden covered 10 CFR 52.79)						
IV.A.2.e (Burden covered 10 CFR 52.79)						
IV.A.2.f (Burden covered 10 CFR 52.79)						
IV.A.2.g (Burden covered 10 CFR 52.79)						
IV.A.2.h (Burden covered 10 CFR 52.79)						
IV.A.3 (Burden covered 10 CFR 52.79)						
X.B.1	2	0.67*	1.34	8	10.7	\$2,910
X.B.2	2	0.33**	0.66	500	330	\$89,760
X.B.3.a (Burden covered 10 CFR 52.79)						
X.B.3.b (Burden covered in X.B.1, X.B.2)						
X.B.3.c(Burden in 10 CFR 50.59(d) + 10 CFR 50.71(e)						
X.B.3.c(Burden in 10 CFR 50.59(d) + 10 CFR 50.71(e)						
Total	2***		2		340.7	\$92,670

*One respondent submitting two responses over a period of three years is annualized to 0.67 responses per year.

**One respondent submitting one response over a period of three years is annualized to 0.33 responses per year.

***The respondents in X.B.1 and X.B.2 are the same entity and thus count as two respondents in the total.

TABLE 2**ANNUALIZED RECORDKEEPING BURDEN FOR APPENDIX E TO 10 CFR PART 52**

Section	No. of Recordkeepers	Burden Hours per Recordkeeper	Total Annual Burden Hours	Cost @ \$272/Hr
X.A.1(similar burden to 10 CFR 50.71(e))	1	34	34*	\$9,248
X.A.2 (Burden covered under 10 CFR 50.71(e))				
X.A.3 (Burden covered under 10 CFR 50.59(d))				
X.A.4.a	1	3	3	\$816
X.A.4.b	2	3	6	\$1,632
Total	3**		43	\$11,696

* One recordkeeper incurring 103 burden hours over a period of three years, annualized at 34 hours.

** The recordkeeper in X.A.1 and X.A.4.a are the same entity and thus count as one recordkeeper in the total.

TOTAL BURDEN HOURS: 383.7 hours (340.7 hours reporting plus 43 hours recordkeeping)
TOTAL RESPONSES: 5 (2 responses + 3 recordkeepers)
TOTAL RESPONDENTS: 3