

NUCLEAR REGULATORY COMMISSION

10 CFR PART 52

RIN 3150 - AG23

**AP600 Design Certification**

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC or Commission) is amending its regulations to certify the AP600 standard plant design under Subpart B of 10 CFR Part 52. This action is necessary so that applicants or licensees intending to construct and operate an AP600 design may do so by referencing this regulation [AP600 design certification rule (DCR)]. The applicant for certification of the AP600 design was Westinghouse Electric Company LLC (hereinafter referred to as Westinghouse).

EFFECTIVE DATE: The effective date of this rule is [Insert date 30 days after publication in the Federal Register]. The incorporation by reference of certain documents listed in this regulation is approved by the Director of the Office of the Federal Register as of [Insert date 30 days after publication in the Federal Register].

FOR FURTHER INFORMATION CONTACT: Jerry N. Wilson, Mail Stop O-12 G15, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or telephone (301) 415-3145, or e-mail: [jnw@nrc.gov](mailto:jnw@nrc.gov).

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#### I. Background

The NRC added 10 CFR Part 52 to its regulations to provide for the issuance of early site permits, standard design certifications, and combined licenses for nuclear power reactors. Subpart B of 10 CFR Part 52 established the process for obtaining design certifications. On June 26, 1992, Westinghouse tendered its application for certification of the AP600 design with the NRC. Westinghouse submitted this application in accordance with Subpart B and Appendix O of 10 CFR Part 52. The NRC formally accepted the application as a docketed application for design certification (Docket No. 52-003) on December 31, 1992 (58 FR 3982, January 12, 1993). Information submitted before that date can be found under Project No. 676.

The NRC staff issued a final safety evaluation report (FSER) related to certification of the AP600 standard plant design in September 1998 (NUREG-1512, 63 FR 48772). The FSER documents the results of the staff's safety review of the AP600 design against the requirements of 10 CFR Part 52, Subpart B, and delineates the scope of the technical details considered in evaluating the design. Subsequently, Westinghouse submitted some changes to the AP600 design documentation [AP600 Design Control Document (DCD) 9/99 revision]. The NRC staff reviewed these changes and determined that they did not affect the findings in the FSER. The NRC staff's evaluation of the changes to the DCD will be provided in Supplement No. 1 to the FSER. A notice of availability for Supplement No. 1 will be published in the Federal Register. The FSER and Supplement No. 1 provide the bases for Commission approval of the AP600 standard plant design through design certification. A copy of the FSER may be obtained from the Superintendent of Documents, U. S. Government Printing Office, P.O. Box 37082, Washington, DC 20402-9328 or the National Technical Information Service, Springfield, VA 22161-0002. The final design approval (FDA) for the AP600 design was issued on September 3, 1998, and published in the Federal Register on September 11, 1998 (63 FR 48772).

#### II Public Comment

Subpart B of 10 CFR Part 52 provides for Commission approval of standard designs for nuclear power facilities (e.g., design certification) through rulemaking. In accordance with the Administrative Procedure Act (APA), Part 52 provides the opportunity for the public to submit written comments on the proposed design certification rule. However, Part 52 goes beyond the requirements of the APA by providing the public with an opportunity to request a hearing before the Atomic Safety and Licensing Board Panel in a design certification rulemaking. Therefore, on May 20, 1999, the NRC published a proposed rule in the Federal Register (64 FR 27626) that invited public comment and provided the public with the opportunity to request an informal hearing before an Atomic Safety and Licensing Board.

The period for requesting an informal hearing or submitting comments on the proposed DCR, AP600 DCD, or draft environmental assessment expired on August 3, 1999. The NRC did not receive any requests for an informal hearing during this period, but it did receive a comment from a member of the public. This individual did not comment on the AP600 DCD, draft environmental assessment, or proposed DCR. Rather, the commenter expressed views on new nuclear power plants and nuclear waste. Therefore, the Commission did not change the proposed DCR, AP600 DCD, or draft environmental assessment [except for editorial revisions] and has adopted this rule [Appendix C to 10 CFR Part 52] as final.

### III. Section-By-Section Discussion of Design Certification Rule

The final rule for the AP600 standard plant design is nearly identical to the two design certification rules (DCRs) for the U.S. ABWR and the System 80+ designs, which the NRC previously adopted. These DCRs are set forth in 10 CFR Part 52, Appendix A (U.S. ABWR, 62 FR 25800, May 12, 1997) and Appendix B (System 80+, 62 FR 27840, May 21, 1997). The AP600 DCR emulates the U.S. ABWR and System 80+ DCRs, inasmuch as the three designs were reviewed contemporaneously against the same technical requirements. Furthermore, many of the procedural issues and their resolutions for the ABWR and the System 80+ DCRs (e.g., the two-tier structure, Tier 2\*, the scope of issue resolution) were developed after extensive discussions with nuclear industry representatives, and Westinghouse participated in those discussions. It was the NRC's intent and Westinghouse's expectation that the resolutions for these issues in the ABWR and System 80+ rulemakings would also be applied to the AP600 design certification. Accordingly, the NRC has modeled the AP600 DCR on the existing DCRs for the ABWR and System 80+ designs, with certain departures. These departures were necessary to acknowledge that Westinghouse is the applicant for the AP600 DCR, and to account for differences in the AP600 design documentation (including Tier 2\* information), design features, and environmental assessment (including severe accident mitigation design alternatives). The only significant change was the inclusion of the investment protection short-term availability controls in Sections II, III, and VI of the AP600 DCR.

The following discussion sets forth the purpose and key aspects of each portion of the final AP600 design certification rule. All section, paragraph, and subparagraph references are to the provisions in Appendix C to 10 CFR Part 52.

#### A. Introduction.

The purpose of Section I of Appendix C to 10 CFR Part 52 ("this appendix") is to identify the standard plant design that is approved by this design certification rule and the applicant for certification of the standard design. Identification of the design certification applicant is necessary to implement this appendix, for two reasons. First, the implementation of 10 CFR 52.63(c) depends on whether an applicant for a combined license (COL) contracts with the design certification applicant to provide the generic DCD and supporting design information. If the COL applicant does not use the design certification applicant to provide this information, then the COL applicant must meet the requirements in 10 CFR 52.63(c). Also, subparagraph X.A.1 of this appendix imposes a requirement on the design certification applicant to maintain the generic DCD throughout the time period in which this appendix may be referenced.

#### B. Definitions.

The terms Tier 1, Tier 2, Tier 2\*, and COL action items (license information) are defined in this appendix because these concepts were not envisioned when 10 CFR Part 52 was developed. The design certification applicants and the NRC staff used these terms in implementing the two-tiered rule structure that was proposed by representatives of the nuclear industry after issuance of 10 CFR Part 52. During consideration of the comments received on Appendices A and B to Part 52, the Commission determined that it would be useful to distinguish between the "plant-specific DCD" and the "generic DCD," the latter of which is incorporated by reference into this appendix and remains unaffected by plant-specific departures. This distinction is necessary in order to clarify the obligations of applicants and licensees that reference this appendix. Also, the technical specifications that are located in Section 16.1 of the generic DCD are designated as "generic technical specifications" in order to facilitate the special treatment of this information under this appendix. Therefore, appropriate

definitions for these additional terms are included in this appendix.

The Tier 1 portion of the design-related information contained in the DCD is *certified* by this appendix and, therefore, subject to the special backfit provisions in paragraph VIII.A of this appendix. An applicant who references this appendix is required to incorporate by reference and comply with Tier 1, under paragraph III.B and subparagraph IV.A.1 of this appendix. This information consists of an introduction to Tier 1, the system based and non-system based design descriptions and corresponding inspections, tests, analyses, and acceptance criteria (ITAAC), significant interface requirements, and significant site parameters for the design. The design descriptions, interface requirements, and site parameters in Tier 1 were derived entirely from Tier 2, but may be more general than the Tier 2 information. The NRC staff's evaluation of the Tier 1 information is provided in Section 14.3 of the FSER. Changes to or departures from the Tier 1 information must comply with paragraph VIII.A of this appendix.

The Tier 1 design descriptions serve as design commitments for the lifetime of a facility referencing the design certification. The ITAAC verify that the as-built facility conforms with the approved design and applicable regulations. In accordance with 10 CFR 52.103(g), the Commission must find that the acceptance criteria in the ITAAC are met before operation. After the Commission has made the finding required by 10 CFR 52.103(g), the ITAAC do not constitute regulatory requirements for licensees or for renewal of the COL. However, subsequent modifications to the facility must comply with the design descriptions in the plant-specific DCD unless changes are made in accordance with the change process in Section VIII of this appendix. The Tier 1 interface requirements are the most significant of the interface requirements for systems that are wholly or partially outside the scope of the standard design, which were submitted in response to 10 CFR 52.47(a)(1)(vii) and must be met by the site-specific design features of a facility that references this appendix. The Tier 1 site parameters are the most significant site parameters, which were submitted in response to 10 CFR 52.47(a)(1)(iii). An application that references this appendix must demonstrate that the site parameters (both Tier 1 and Tier 2) are met at the proposed site (refer to III.D of this SOC).

Tier 2 is the portion of the design-related information contained in the DCD that is *approved* by this appendix but is not certified. Tier 2 information is subject to the backfit provisions in paragraph VIII.B of this appendix. Tier 2 includes the information required by 10 CFR 52.47 (with the exception of generic technical specifications, conceptual design information, and the evaluation of severe accident mitigation design alternatives) and the supporting information on inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met. As with Tier 1, paragraph III.B and subparagraph IV.A.1 of this appendix require an applicant who references this appendix to incorporate Tier 2 by reference and to comply with Tier 2, except for the COL action items, including the investment protection short-term availability controls in Section 16.3 of the generic DCD. The definition of Tier 2 makes clear that Tier 2 information has been determined by the Commission, by virtue of its inclusion in this appendix and its designation as Tier 2 information, to be an approved ("sufficient") method for meeting Tier 1 requirements. However, there may be other acceptable ways of complying with Tier 1. The appropriate criteria for departing from Tier 2 information are specified in paragraph VIII.B of this appendix. Departures from Tier 2 do not negate the requirement in paragraph III.B to reference Tier 2.

A definition of "combined license (COL) action items" (combined license information), which is part of the Tier 2 information, has been added to clarify that COL applicants, who reference this appendix, are required to address these matters in their license application, but the COL action items are not the only acceptable set of information. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the

FSAR. After issuance of a construction permit or combined license, these items are not requirements for the licensee unless such items are restated in its FSAR.

The investment protection short-term availability controls, which are set forth in Section 16.3 of the generic DCD, were added to the list of information that is part of Tier 2. This set of requirements was added to Tier 2 to make it clear that the availability controls are not operational requirements for the purposes of paragraph VIII.C of this appendix. Rather, the availability controls are associated with specific design features, and the availability controls may be changed in the same manner as other Tier 2 information.

Certain Tier 2 information has been designated in the generic DCD with brackets and italicized text as "Tier 2\*" information and, as discussed in greater detail in the section-by-section explanation for paragraph VIII.B, a plant-specific departure from Tier 2\* information requires prior NRC approval. However, the Tier 2\* designation expires for some of this information when the facility first achieves full power after the finding required by 10 CFR 52.103(g). The process for changing Tier 2\* information and the time at which its status as Tier 2\* expires is set forth in subparagraph VIII.B.6 of this appendix. Some Tier 2\* requirements, concerning special preoperational tests, are designated to be performed only for the first plant or first three plants referencing the AP600 DCR. The Tier 2\* designation for these selected tests will expire after the first plant or first three plants complete the specified tests. However, a COL action item requires that subsequent plants shall also perform the tests or justify that the results of the first-plant-only or first-three-plants-only tests are applicable to the subsequent plant. The Commission is interested in comments addressing whether the first-plant-only or first-three-plants-only limitations should be part of the Tier 2\* information for these specified tests.

During development of Appendices A and B to Part 52, the Commission decided that there would be both generic (master) DCDs maintained by the NRC and the design certification applicant, as well as individual plant-specific DCDs, maintained by each applicant and licensee who references this appendix. The generic DCDs (identical to each other) would reflect generic changes to the version of the DCD approved in this design certification rulemaking. The generic changes would occur as the result of generic rulemaking by the Commission (subject to the change criteria in Section VIII of this appendix). In addition, the Commission understood that each applicant and licensee referencing this appendix would be required to submit and maintain a plant-specific DCD. This plant-specific DCD would contain (not just incorporate by reference) the information in the generic DCD. The plant-specific DCD would be updated as necessary to reflect the generic changes to the DCD that the Commission may adopt through rulemaking, any plant-specific departures from the generic DCD that the Commission imposed on the licensee by order, and any plant-specific departures that the licensee chose to make in accordance with the relevant processes in Section VIII of this appendix. Thus, the plant-specific DCD would function akin to an updated Final Safety Analysis Report, in the sense that it would provide the most complete and accurate information on a plant's licensing basis for that part of the plant within the scope of this appendix. Therefore, this appendix defines both a generic DCD and plant-specific DCD. Also, the Commission decided to treat the technical specifications in Section 16.1 of the generic DCD as a special category of information and to designate them as generic technical specifications. A COL applicant must submit plant-specific technical specifications that consist of the generic technical specifications, which may be modified under paragraph VIII.C of this appendix, and the remaining plant-specific information needed to complete the technical specifications, including bracketed values. The Final Safety Analysis Report (FSAR) that is required by § 52.79(b) will consist of the plant-specific DCD, the site-specific portion of the FSAR, and the plant-specific technical specifications.

### C. Scope and contents.

The purpose of Section III of this appendix is to describe and define the scope and contents of this design certification and to set forth how documentation discrepancies or inconsistencies are to be resolved. Paragraph A of this section is the required statement of the Office of the Federal Register (OFR) for approval of the incorporation by reference of Tier 1, Tier 2, and the generic technical specifications into this appendix and paragraph B requires COL applicants and licensees to comply with the requirements of this appendix. The legal effect of incorporation by reference is that the material is treated as if it were published in the Federal Register. This material, like any other properly-issued regulation, has the force and effect of law. Tier 1 and Tier 2 information, as well as the generic technical specifications, have been combined into a single document called the generic design control document, in order to effectively control this information and facilitate its incorporation by reference into the rule. The generic DCD was prepared to meet the requirements of the OFR for incorporation by reference (1 CFR Part 51). One of the requirements of OFR for incorporation by reference is that the design certification applicant must make the generic DCD available upon request after the final rule becomes effective. Therefore, paragraph III.A of this appendix identifies a representative of Westinghouse who can be contacted to obtain a copy of the generic DCD.

Paragraphs A and B of Section III also identify the investment protection short-term availability controls in Section 16.3 of the generic DCD as part of the Tier 2 information. During its review of the AP600 design, the NRC determined that residual uncertainties associated with passive safety system performance increased the importance of non-safety-related active systems in providing defense-in-depth functions that back-up the passive systems. As a result, Westinghouse developed some administrative controls to provide a high level of confidence that active systems having a significant safety role are available when challenged. Westinghouse named these additional controls "investment protection short-term availability controls," and the Commission included this statement in Section III to ensure that these availability controls are binding on applicants and licensees that reference this appendix and will be enforceable by the NRC. The NRC's evaluation of the availability controls is provided in Chapter 22 of the FSER.

The generic DCD (master copy) for this design certification will be archived at NRC's central file with a matching copy at OFR. Copies of the up-to-date generic DCD will also be available at the NRC's Public Document Room. Questions concerning the accuracy of information in an application that references this appendix will be resolved by checking the master copy of the generic DCD in NRC's central file. If a generic change (rulemaking) is made to the DCD pursuant to the change process in Section VIII of this appendix, then at the completion of the rulemaking the NRC will request approval of the Director, OFR for the changed incorporation by reference and change its copies of the generic DCD and notify the OFR and the design certification applicant to change their copies. The Commission is requiring that the design certification applicant maintain an up-to-date copy under subparagraph X.A.1 of this appendix because it is likely that most applicants intending to reference the standard design will obtain the generic DCD from the design certification applicant. Plant-specific changes to and departures from the generic DCD will be maintained by the applicant or licensee that references this appendix in a plant-specific DCD, under subparagraph X.A.2.

In addition to requiring compliance with this appendix, paragraph B clarifies that the conceptual design information and Westinghouse's evaluation of severe accident mitigation design alternatives are not considered to be part of this appendix. The conceptual design information is for those portions of the plant that are outside the scope of the standard design and are intermingled throughout Tier 2. As provided by 10 CFR 52.47(a)(1)(ix), these conceptual designs are not part of this appendix and, therefore, are not applicable to an

application that references this appendix. Therefore, the applicant does not need to conform with the conceptual design information that was provided by the design certification applicant. The conceptual design information, which consists of site-specific design features, was required to facilitate the design certification review. Conceptual design information is neither Tier 1 nor Tier 2. Section 1.8 of Tier 2 identifies the location of the conceptual design information. Westinghouse's evaluation of various design alternatives to prevent and mitigate severe accidents does not constitute design requirements. The Commission's assessment of this information is discussed in Section IV of this SOC on environmental impacts. The detailed methodology and quantitative portions of the design-specific probabilistic risk assessment (PRA), as required by 10 CFR 52.47(a)(1)(v), were not included in the generic DCD, as requested by NEI and the applicant for design certification. The NRC agreed with the request to delete this information because conformance with the deleted portions of the PRA is not necessary. Also, the NRC's position is predicated in part upon NEI's acceptance, in conceptual form, of a future generic rulemaking that will require a COL applicant or licensee to have a plant-specific PRA that updates and supersedes the design-specific PRA supporting this rulemaking and maintain it throughout the operational life of the facility.

Paragraphs C and D of Section III set forth the manner in which potential conflicts are to be resolved. Paragraph C establishes the Tier 1 description in the DCD as controlling in the event of an inconsistency between the Tier 1 and Tier 2 information in the DCD. Paragraph D establishes the generic DCD as the controlling document in the event of an inconsistency between the DCD and either the application for certification of the AP600 design (AP600 Standard Safety Analysis Report) or the final safety evaluation report for the certified standard design.

Paragraph E makes it clear that design activities that are wholly outside the scope of this design certification may be performed using site-specific design parameters, provided the design activities do not affect Tier 1 or Tier 2, or conflict with the interface requirements in the DCD. This provision applies to site-specific portions of the plant, such as the administration building. Because this statement is not a definition, the Commission decided that the appropriate location is in Section III of this appendix.

#### D. Additional requirements and restrictions.

Section IV of this appendix sets forth additional requirements and restrictions imposed upon an applicant who references this appendix. Paragraph IV.A sets forth the information requirements for these applicants. This appendix distinguishes between information and/or documents which must actually be *included* in the application or the DCD, versus those which may be *incorporated by reference* (i.e., referenced in the application as if the information or documents were actually included in the application), thereby reducing the physical bulk of the application. Any incorporation by reference in the application should be clear and should specify the title, date, edition, or version of a document, and the page number(s) and table(s) containing the relevant information to be incorporated by reference.

Subparagraph A.1 requires an applicant who references this appendix to incorporate by reference this appendix in its application. The legal effect of such incorporation by reference is that this appendix is legally binding on the applicant or licensee. Subparagraph A.2.a is intended to make clear that the initial application must include a plant-specific DCD. This assures, among other things, that the applicant commits to complying with the DCD. This paragraph also requires the plant-specific DCD to use the same format as the generic DCD and to reflect the applicant's proposed departures and exemptions from the generic DCD as of the time of submission of the application. The Commission expects that the plant-specific DCD will

become the plant's final safety analysis report (FSAR), by including within its pages, at the appropriate points, information such as site-specific information for the portions of the plant outside the scope of the referenced design, including related ITAAC, and other matters required to be included in an FSAR by 10 CFR 50.34 and 52.79. Integration of the plant-specific DCD and remaining site-specific information into the plant's FSAR, will result in an application that is easier to use and should minimize "duplicate documentation" and the attendant possibility for confusion. Subparagraph A.2.a is also intended to make clear that the initial application must include the reports on departures and exemptions as of the time of submission of the application.

Subparagraph A.2.b requires that the application include the reports required by paragraph X.B of this appendix for exemptions and departures proposed by the applicant as of the date of submission of its application. Subparagraph A.2.c requires submission of plant-specific technical specifications for the plant that consists of the generic technical specifications from Section 16.1 of the DCD, with any changes made under paragraph VIII.C of this appendix, and the technical specifications for the site-specific portions of the plant that are either partially or wholly outside the scope of this design certification. The applicant must also provide the plant-specific information designated in the generic technical specifications, such as bracketed values.

Subparagraph A.2.d makes it clear that the applicant must provide information demonstrating that the proposed site falls within the site parameters for this appendix and that the plant-specific design complies with the interface requirements, as required by 10 CFR 52.79(b). If the proposed site has a characteristic that exceeds one or more of the site parameters in the DCD, then the proposed site is unacceptable for this design unless the applicant seeks an exemption under Section VIII of this appendix and justifies why the certified design should be found acceptable on the proposed site. Subparagraph A.2.e requires submission of information addressing COL Action Items, which are identified in the generic DCD as Combined License Information, in the application. The Combined License Information identifies matters that need to be addressed by an applicant that references this appendix, as required by Subpart C of 10 CFR Part 52. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in its application (FSAR). Subparagraph A.2.f requires that the application include the information required by 10 CFR 52.47(a) that is not within the scope of this rule, such as generic issues that must be addressed, in whole or in part, by an applicant that references this rule. Subparagraph IV.A.3 requires the applicant to physically include, not simply reference, the proprietary and safeguards information referenced in the DCD, or its equivalent, to assure that the applicant has actual notice of these requirements.

Paragraph IV.B reserves to the Commission the right to determine in what manner this design certification may be referenced by an applicant for a construction permit or operating license under 10 CFR Part 50. This determination may occur in the context of a subsequent rulemaking modifying 10 CFR Part 52 or this design certification rule, or on a case-by-case basis in the context of a specific application for a 10 CFR Part 50 construction permit or operating license. This provision is necessary because the previous design certifications were not implemented in the manner that was originally envisioned at the time that 10 CFR Part 52 was created. The Commission's concern is with the manner in which ITAAC were developed and the lack of experience with design certifications in license proceedings. Therefore, it is appropriate to have some uncertainty regarding the manner in which this appendix could be referenced in a 10 CFR Part 50 licensing proceeding.

E. Applicable regulations.

The purpose of Section V of this appendix is to specify the regulations that were applicable and in effect at the time that this design certification was approved. These regulations consist of the technically relevant regulations identified in paragraph V.A, except for the regulations in paragraph V.B that are not applicable to this certified design (exempt).

Paragraph V.A identifies the regulations in 10 CFR Parts 20, 50, 73, and 100 that are applicable to the AP600 design. After the NRC staff issued its FSER for the AP600 design in September 1998, the Commission amended several existing regulations and adopted several new regulations. The Commission has reviewed these regulations to determine if they are applicable to this design and, if so, to determine if the design meets these regulations. The Commission finds that the AP600 design either meets the requirements of these regulations or that these regulations are not applicable to the design, as discussed below. The Commission's determination of the applicable regulations was made as of the date specified in paragraph V.A of this appendix. The specified date is the date that this appendix was approved by the Commission and signed by the Secretary of the Commission.

*10 CFR 20, Transfer for Disposal and Manifests; Minor Technical Conforming Amendment (63 FR 50127; September 21, 1998).*

This amendment to Part 20 removed expired provisions from the regulations on low-level waste shipment manifest information. The previous regulation included dual implementation procedures that allow use of one of two manifesting procedures. This is a procedural requirement that applies to licensees and, therefore, is not applicable to either NRC issuance of design certification or applicants for design certification.

*10 CFR 30 & 50, Financial Assurance Requirements for Decommissioning Nuclear Power Reactors (63 FR 50465; September 22, 1998).*

This amendment to the regulations requires power reactor licensees to report periodically on the status of their decommissioning funds, and on changes in their external trust agreements and other financial assurance mechanisms. This regulation applies to licensees and, therefore, is not applicable to either NRC issuance of design certification or applicants for design certification.

*10 CFR 50 & 70, Criticality Accident Requirements (63 FR 63127; November 12, 1998).*

This amendment to the regulations provides licensees of light-water nuclear reactors with greater flexibility in meeting the requirement to maintain a criticality monitoring system in each area in which special nuclear material is handled, used, or stored. The criticality monitoring system is not considered to be part of the plant design and, therefore, is not applicable to either NRC issuance of design certification or applicants for design certification.

*10 CFR 50, Changes to Quality Assurance Programs (64 FR 9030; February 23, 1999).*

This amendment to 10 CFR 50.54(a) allows licensees to make routine or administrative quality assurance (QA) program changes, which do not have an adverse impact on the effectiveness of their QA program, without obtaining NRC approval in advance. This is a procedural requirement that can be utilized after issuance of a license and, therefore, is not applicable to either NRC issuance of design certification or applicants for design certification.

*10 CFR 50 & 73, Frequency of Reviews and Audits for Emergency Preparedness Programs, Safeguards Contingency Plans, and Security Programs for Nuclear Power*

*Reactors (64 FR 14814; March 29, 1999).*

This amendment to the regulations allows licensees to change the frequency of independent reviews and audits of their emergency preparedness programs, safeguards contingency plans, and security programs. This is a procedural requirement that can be utilized after issuance of a license and, therefore, is not applicable to either NRC issuance of design certification or applicants for design certification.

*10 CFR 50, Codes and Standards: IEEE National Consensus Standard (64 FR 17944; April 13, 1999).*

This amendment to 10 CFR 50.55a incorporates IEEE Std. 603-1991 by reference, a national consensus standard for power, instrumentation, and control portions of safety systems in nuclear power plants. The NRC staff reviewed the AP600 design against this IEEE standard and, therefore, the Commission has determined that the AP600 design meets the applicable portions of this new requirement.

*10 CFR 50, Monitoring the Effectiveness of Maintenance at Nuclear Power Plants (64 FR 38551; July 19, 1999).*

This amendment to 10 CFR 50.65 requires nuclear power plant licensees to assess the effect of equipment maintenance on the plant's capability to perform safety functions before beginning maintenance activities on structures, systems, and components within the scope of the maintenance rule. This requirement applies only to licensees and, therefore, is not applicable to either NRC issuance of design certification or applicants for design certification.

In paragraph V.B of this appendix, the Commission identified the regulations that do not apply to the AP600 design. The Commission has determined that the AP600 design should be exempt from portions of 10 CFR 50.34, 50.62, and Appendix A to Part 50, as described in the FSER (NUREG-1512) and summarized below:

*(1) Paragraph (a)(1) of 10 CFR 50.34 - whole body dose criterion.*

This regulation sets forth dose criteria to be used in siting determinations. The NRC staff performed its evaluation of the radiological consequences of postulated design basis accidents for the AP600 design against the dose criterion specified in 10 CFR 50.34(a)(1)(ii)(D) because it was the Commission's intent that the new dose criterion be used for future nuclear power plants. However, when the NRC codified the new reactor site criteria for nuclear power plants (61 FR 65157; December 11, 1996), it made an error in the assignment of applicants that could use the new dose criterion [25 rem TEDE], versus those that must use the whole body criterion. The assignment of applicants in 10 CFR 50.34(a)(1), who must use the whole body criterion, should not have included applicants for a design certification or combined license who applied prior to January 10, 1997 (refer to 61 FR 65158). The Commission adopted 25 rem TEDE as the new dose criterion for future plant evaluation purposes, because this value is essentially the same level of risk as the current criterion (61 FR 65160). Therefore, the Commission has determined that the special circumstances described in 10 CFR 50.12(a)(2)(ii) exist in that application of the 25 rem whole body criterion is not necessary to achieve the underlying purpose of the rule because 25 rem TEDE is essentially the same level of risk. On this basis, the Commission concludes that the AP600 design review can be performed pursuant to the new dose criterion [25 rem TEDE] and an exemption from the requirements of 10 CFR 50.34(a)(1) is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security.

*(2) Paragraph (f)(2)(iv) of 10 CFR 50.34 - Plant Safety Parameter Display Console.*

10 CFR 50.34(f)(2)(iv) requires that an application provide a plant safety parameter display console that will display to operators a minimum set of parameters defining the safety status of the plant, be capable of displaying a full range of important plant parameters and data trends on demand, and be capable of indicating when process limits are being approached or exceeded. Westinghouse answered this requirement, in Section 18.8.2 of the DCD, with an integrated design rather than a stand-alone, add-on system, as is used at most current operating plants. Specifically, Westinghouse integrated the SPDS requirements into the design requirements for the alarm and display systems. In NUREG-0800, the NRC staff indicated that, for applicants who are in the early stages of the control room design, the "function of a separate SPDS may be integrated into the overall control room design" (p. 18.0-1). Therefore, the Commission has determined that the special circumstances described in 10 CFR 50.12(a)(2)(ii) exist in that the requirement for an SPDS console need not be applied in this particular circumstance to achieve the underlying purpose because Westinghouse has provided an acceptable alternative that accomplishes the intent of the regulation. On this basis, the Commission concludes that an exemption from the requirements of 10 CFR 50.34(f)(2)(iv) is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security.

*(3) Paragraphs (f)(2)(vii), (viii), (xxvi), and (xxviii) of 10 CFR 50.34 - Accident Source Terms in TID 14844.*

Pursuant to 10 CFR 52.47(a)(ii), an applicant for design certification must demonstrate compliance with any technically relevant TMI requirements in 10 CFR 50.34(f). The TMI requirements in 10 CFR 50.34(f)(2)(vii), (viii), (xxvi), and (xxviii) refer to the accident source term in TID 14844. Specifically, 10 CFR 50.34(f)(2)(xxviii) requires the evaluation of pathways that may lead to control room habitability problems "under accident conditions resulting in a TID 14844 source term release." Similar wording appears in requirements (vii), (viii), and (xxvi). Westinghouse has adopted the new source term technology summarized in NUREG-1465, "Accident Source Terms for Light-Water Nuclear Power Plants," dated February 1995, not the old TID 14844 source term cited in 10 CFR Part 50.34(f). The new source term is a more realistic representation of the source term resulting from postulated design basis accidents, therefore, the Commission has determined that the special circumstances described in 10 CFR 50.12(a)(ii) exist in that these regulations need not be applied in this particular circumstance to achieve the underlying purpose because Westinghouse has adopted acceptable alternatives that accomplish the underlying intent of the regulations that specify TID 14844. On this basis, the Commission concludes that a partial exemption from the requirements of paragraphs (f)(2)(vii), (viii), (xxvi), and (xxviii) of 10 CFR 50.34 is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security.

*(4) Paragraph (c)(1) of 10 CFR 50.62 - Auxiliary feedwater system.*

The AP600 design relies on the passive residual heat removal system (PRHR) in lieu of an auxiliary or emergency feedwater system as its safety-related method of removing decay heat. Westinghouse requested an exemption from a portion of 10 CFR 50.62(c)(1), which requires auxiliary or emergency feedwater as an alternate system for decay heat removal during an ATWS event. The NRC staff concluded that Westinghouse met the intent of the rule by relying on the PRHR system to remove the decay heat and, thereby, met the underlying purpose of the rule. Therefore, the Commission has determined that the special circumstances

described in 10 CFR 50.12(a)(2)(ii) exist in that the requirement for an auxiliary or emergency feedwater system is not necessary to achieve the underlying purpose of 10 CFR 50.62(c)(1), because Westinghouse has adopted acceptable alternatives that accomplish the intent of this regulation, and the exemption is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security.

*(5) Appendix A to 10 CFR Part 50, GDC 17 - Offsite Power Sources.*

Westinghouse requested a partial exemption from the requirement in GDC 17 for a second offsite power supply circuit. The AP600 plant design relies on safety-related "passive" systems. Unlike operating plants with active safety-related systems, the AP600 safety-related systems only require a small amount of electric power for valves and related instrumentation. The onsite Class 1E batteries and associated dc and ac distribution systems can provide the power for these valves and instrumentation. In addition, if no offsite power is available, it is expected that the non-safety-related onsite diesel generators would be available for important plant functions; however, this non-safety-related ac power is not relied on to maintain core cooling or containment integrity. Therefore, the Commission has determined that the special circumstances described in 10 CFR 50.12(a)(2)(ii) exist in that the requirement need not be applied in this particular circumstance to achieve the underlying purpose of having two offsite power sources because the AP600 design includes an acceptable alternative approach to accomplish safety functions that does not rely on power from the offsite system and, therefore, accomplishes the intent of the regulation. On this basis, the Commission concludes that a partial exemption from the requirements of GDC 17 is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security.

*(6) Appendix A to 10 CFR Part 50, GDC 19 - whole body dose criterion.*

The NRC staff used a criterion of 5 rem TEDE for evaluating the radiological consequences of design basis accidents in the control room of the AP600 design. The NRC staff used the 5 rem TEDE criterion to be consistent with the new reactor site criteria in 10 CFR 50.34(a)(1) [61 FR 65157], although GDC 19 specifies . . . "5 rem whole body, or its equivalent to any part of the body". . . The Commission has determined that the special circumstances described in 10 CFR 50.12(a)(2)(ii) exist in that application of the 5 rem whole body criterion is not necessary to achieve the underlying purpose of the rule because a TEDE dose provides essentially the same level of risk as a whole body dose (see 61 FR 65160). On this basis, the Commission concludes that a partial exemption from GDC 19 is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security.

F. Issue resolution.

The purpose of Section VI of this appendix is to identify the scope of issues that are resolved by the Commission in this rulemaking and; therefore, are "matters resolved" within the meaning and intent of 10 CFR 52.63(a)(4). The section is divided into five parts: (A) the Commission's safety findings in adopting this appendix, (B) the scope and nature of issues which are resolved by this rulemaking, (C) issues which are not resolved by this rulemaking, (D) the backfit restrictions applicable to the Commission with respect to this appendix, and (E) the availability of secondary references.

Paragraph A describes in general terms the nature of the Commission's findings, and makes the finding required by 10 CFR 52.54 for the Commission's approval of this design certification rule. Furthermore, paragraph A explicitly states the Commission's determination

that this design provides adequate protection of the public health and safety.

Paragraph B sets forth the scope of issues which may not be challenged as a matter of right in subsequent proceedings. The introductory phrase of paragraph B clarifies that issue resolution as described in the remainder of the paragraph extends to the delineated NRC proceedings referencing this appendix. The remainder of paragraph B describes the categories of information for which there is issue resolution. Specifically, subparagraph B.1 provides that all nuclear safety issues arising from the Atomic Energy Act of 1954, as amended, that are associated with the information in the NRC staff's FSER (NUREG-1512) and Supplement No. 1, the Tier 1 and Tier 2 information (including the availability controls in Section 16.3 of the generic DCD), and the rulemaking record for this appendix are resolved within the meaning of § 52.63(a)(4). These issues include the information referenced in the DCD that are requirements (i.e., "secondary references"), as well as all issues arising from proprietary and safeguards information which are intended to be requirements. Subparagraph B.2 provides for issue preclusion of proprietary and safeguards information. Subparagraphs B.3, B.4, B.5, and B.6 clarify that approved changes to and departures from the DCD which are accomplished in compliance with the relevant procedures and criteria in Section VIII of this appendix continue to be matters resolved in connection with this rulemaking. Subparagraph B.7 provides that, for those plants located on sites whose site parameters do not exceed those assumed in Westinghouse's evaluation of severe accident mitigation design alternatives (SAMDA), all issues with respect to SAMDA arising under the National Environmental Policy Act of 1969 associated with the information in the Environmental Assessment for this design and the information regarding SAMDA in Appendix 1B of the generic DCD are also resolved within the meaning and intent of § 52.63(a)(4). In the event an exemption from a site parameter is granted, the exemption applicant has the initial burden of demonstrating that the original SAMDA analysis still applies to the actual site parameters but, if the exemption is approved, requests for litigation at the COL stage must meet the requirements of § 2.714 and present sufficient information to create a genuine controversy in order to obtain a hearing on the site parameter exemption.

Paragraph C reserves the right of the Commission to impose operational requirements on applicants that reference this appendix. This provision reflects the fact that operational requirements, including generic technical specifications in Section 16.1 of the DCD, were not completely or comprehensively reviewed at the design certification stage. Therefore, the special backfit provisions of § 52.63 do not apply to operational requirements. However, all design changes will be controlled by the appropriate provision in Section VIII of this appendix. Although the information in the DCD that is related to operational requirements was necessary to support the NRC staff's safety review of this design, the review of this information was not sufficient to conclude that the operational requirements are fully resolved and ready to be assigned finality under § 52.63. As a result, if the NRC wanted to change a temperature limit and that operational change required a consequential change to a design feature, then the temperature limit backfit would be controlled by Section VIII (paragraph A or B) of this appendix. However, changes to other operational issues, such as in-service testing and in-service inspection programs, post-fuel load verification activities, and shutdown risk that do not require a design change would not be restricted by § 52.63 (see paragraph VIII.C of this appendix). Paragraph VI.C does allow the NRC to impose future operational requirements (distinct from design matters) on applicants who reference this design certification. Also, license conditions for portions of the plant within the scope of this design certification, e.g. start-up and power ascension testing, are not restricted by § 52.63. The requirement to perform these testing programs is contained in Tier 1 information. However, ITAAC cannot be specified

for these subjects because the matters to be addressed in these license conditions cannot be verified prior to fuel load and operation, when the ITAAC are satisfied. Therefore, another regulatory vehicle is necessary to ensure that licensees comply with the matters contained in the license conditions. License conditions for these areas cannot be developed now because this requires the type of detailed design information that will be developed after design certification. In the absence of detailed design information to evaluate the need for and develop specific post-fuel load verifications for these matters, the Commission is reserving the right to impose license conditions by rule for post-fuel load verification activities for portions of the plant within the scope of this design certification.

Paragraph D reiterates the restrictions (contained in Section VIII of this appendix) placed upon the Commission when ordering generic or plant-specific modifications, changes or additions to structures, systems or components, design features, design criteria, and ITAAC (subparagraph VI.D.3 addresses ITAAC) within the scope of the certified design.

Paragraph E provides the procedure for an interested member of the public to obtain access to proprietary or safeguards information for the AP600 design, in order to request and participate in proceedings identified in paragraph VI.B of this appendix, viz., proceedings involving licenses and applications which reference this appendix. As set forth in paragraph VI.E, access must first be sought from the design certification applicant. If Westinghouse refuses to provide the information, the person seeking access shall request access from the Commission or the presiding officer, as applicable. Access to the proprietary or safeguards information may be ordered by the Commission, but must be subject to an appropriate non-disclosure agreement.

#### G. Duration of this appendix.

The purpose of Section VII of this appendix is in part to specify the time period during which this design certification may be referenced by an applicant for a combined license, under 10 CFR 52.55. This section also states that the design certification remains valid for an applicant or licensee that references the design certification until the application is withdrawn or the license expires. Therefore, if an application references this design certification during the 15-year period, then the design certification continues in effect until the application is withdrawn or the license issued on that application expires. Also, the design certification continues in effect for the referencing license if the license is renewed. The Commission intends for this appendix to remain valid for the life of the plant that references the design certification to achieve the benefits of standardization and licensing stability. This means that changes to or plant-specific departures from information in the plant-specific DCD must be made pursuant to the change processes in Section VIII of this appendix for the life of the plant.

#### H. Processes for changes and departures.

The purpose of Section VIII of this appendix is to set forth the processes for generic changes to or plant-specific departures (including exemptions) from the DCD. The Commission adopted this restrictive change process in order to achieve a more stable licensing process for applicants and licensees that reference this design certification rule. Section VIII is divided into three paragraphs, which correspond to Tier 1, Tier 2, and Operational requirements. The language of Section VIII distinguishes between generic *changes to* the DCD versus plant-specific *departures from* the DCD. Generic *changes* must be accomplished by rulemaking because the intended subject of the change is the design certification rule itself, as is contemplated by 10 CFR 52.63(a)(1). Consistent with 10 CFR 52.63(a)(2), any generic rulemaking changes are applicable to all plants, absent circumstances which render the change

["modification" in the language of § 52.63(a)(2)] "technically irrelevant." By contrast, plant-specific *departures* could be either a Commission-issued order to one or more applicants or licensees; or an applicant or licensee-initiated departure applicable only to that applicant's or licensee's plant(s), similar to a § 50.59 departure or an exemption. Because these plant-specific departures will result in a DCD that is unique for that plant, Section X of this appendix requires an applicant or licensee to maintain a plant-specific DCD. For purposes of brevity, this discussion refers to both generic changes and plant-specific departures as "change processes."

Both Section VIII of this appendix and this SOC refer to an "exemption" from one or more requirements of this appendix and the criteria for granting an exemption. The Commission cautions that where the exemption involves an underlying substantive requirement (applicable regulation), then the applicant or licensee requesting the exemption must also show that an exemption from the underlying applicable requirement meets the criteria of 10 CFR 50.12.

### **Tier 1 information**

The change processes for Tier 1 information are covered in paragraph VIII.A. Generic changes to Tier 1 are accomplished by rulemaking that amends the generic DCD and are governed by the standards in 10 CFR 52.63(a)(1). This provision provides that the Commission may not modify, change, rescind, or impose new requirements by rulemaking except where necessary either to bring the certification into compliance with the Commission's regulations applicable and in effect at the time of approval of the design certification or to ensure adequate protection of the public health and safety or common defense and security. The rulemakings must include an opportunity for hearing with respect to the proposed change, as required by 10 CFR 52.63(a)(1), and the Commission expects such hearings to be conducted in accordance with 10 CFR Part 2, Subpart H. Departures from Tier 1 may occur in two ways: (1) the Commission may *order* a licensee to depart from Tier 1, as provided in subparagraph A.3; or (2) an applicant or licensee may request an *exemption* from Tier 1, as provided in subparagraph A.4. If the Commission seeks to order a licensee to depart from Tier 1, subparagraph A.3 requires that the Commission find both that the departure is necessary for adequate protection or for compliance, and that special circumstances are present. Subparagraph A.4 provides that exemptions from Tier 1 requested by an applicant or licensee are governed by the requirements of 10 CFR 52.63(b)(1) and 52.97(b), which provide an opportunity for a hearing. In addition, the Commission will not grant requests for exemptions that may result in a significant decrease in the level of safety otherwise provided by the design.

### **Tier 2 information**

The change processes for the three different categories of Tier 2 information, viz., Tier 2, Tier 2\*, and Tier 2\* with a time of expiration, are set forth in paragraph VIII.B. The change process for Tier 2 has the same elements as the Tier 1 change process, but some of the standards for plant-specific orders and exemptions are different. The Commission adopted a "50.59-like" change process in accordance with its SRMs on SECY-90-377 and SECY-92-287A.

The process for generic Tier 2 changes (including changes to Tier 2\* and Tier 2\* with a time of expiration) tracks the process for generic Tier 1 changes. As set forth in subparagraph B.1, generic Tier 2 changes are accomplished by rulemaking amending the generic DCD, and are governed by the standards in 10 CFR 52.63(a)(1). This provision provides that the Commission may not modify, change, rescind or impose new requirements by rulemaking except where necessary either to bring the certification into compliance with the Commission's regulations applicable and in effect at the time of approval of the design certification or to

assure adequate protection of the public health and safety or common defense and security. If a generic change is made to Tier 2\* information, then the category and expiration, if necessary, of the new information would also be determined in the rulemaking and the appropriate change process for that new information would apply.

Departures from Tier 2 may occur in five ways: (1) the Commission may order a plant-specific departure, as set forth in subparagraph B.3; (2) an applicant or licensee may request an exemption from a Tier 2 requirement as set forth in subparagraph B.4; (3) a licensee may make a departure without prior NRC approval in accordance with subparagraph B.5 [the "50.59-like" process]; (4) the licensee may request NRC approval for proposed departures which do not meet the requirements in subparagraph B.5 as provided in subparagraph B.5.d; and (5) the licensee may request NRC approval for a departure from Tier 2\* information under subparagraph B.6.

Similar to Commission-ordered Tier 1 departures and generic Tier 2 changes, Commission-ordered Tier 2 departures cannot be imposed except where necessary either to bring the certification into compliance with the Commission's regulations applicable and in effect at the time of approval of the design certification or to ensure adequate protection of the public health and safety or common defense and security, as set forth in subparagraph B.3. However, the special circumstances for the Commission-ordered Tier 2 departures do not have to outweigh any decrease in safety that may result from the reduction in standardization caused by the plant-specific order, as required by 10 CFR 52.63(a)(3). The Commission determined that it was not necessary to impose an additional limitation similar to that imposed on Tier 1 departures by 10 CFR 52.63(a)(3) and (b)(1). This type of additional limitation for standardization would unnecessarily restrict the flexibility of applicants and licensees with respect to Tier 2, which by its nature is not as safety significant as Tier 1.

An applicant or licensee may request an exemption from Tier 2 information as set forth in subparagraph B.4. The applicant or licensee must demonstrate that the exemption complies with one of the special circumstances in 10 CFR 50.12(a). In addition, the Commission will not grant requests for exemptions that may result in a significant decrease in the level of safety otherwise provided by the design. However, the special circumstances for the exemption do not have to outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption. If the exemption is requested by an applicant for a license, the exemption is subject to litigation in the same manner as other issues in the license hearing, consistent with 10 CFR 52.63(b)(1). If the exemption is requested by a licensee, then the exemption is subject to litigation in the same manner as a license amendment.

Subparagraph B.5 allows an applicant or licensee to depart from Tier 2 information, without prior NRC approval, if the proposed departure does not involve a change to or departure from Tier 1 or Tier 2\* information, technical specifications, or involves an unreviewed safety question (USQ) as defined in B.5.b and B.5.c of this paragraph. The technical specifications referred to in B.5.a and B.5.b of this paragraph are the technical specifications in Section 16.1 of the generic DCD, including bases, for departures made prior to issuance of the COL. After issuance of the COL, the plant-specific technical specifications are controlling under subparagraph B.5. The bases for the plant-specific technical specifications will be controlled by the bases control procedures for the plant-specific technical specifications (analogous to the bases control provision in the Improved Standard Technical Specifications). The definition of a USQ in B.5.b of this paragraph is similar to the definition in 10 CFR 50.59 and it applies to all information in Tier 2 except for the information that resolves the severe accident issues. The process for evaluating proposed tests or experiments not described in Tier 2 will be incorporated into the change process for the portion of the design that is outside the scope of

this design certification. Although subparagraph B.5 does not specifically state, the Commission has determined that departures must also comply with all applicable regulations unless an exemption or other relief is obtained.

The Commission believes that it is important to preserve and maintain the resolution of severe accident issues just like all other safety issues that were resolved during the design certification review (refer to SRM on SECY-90-377). However, because of the increased uncertainty in severe accident issue resolutions, the Commission has adopted separate criteria in B.5.c for determining whether a departure from information that resolves severe accident issues constitutes a USQ. For purposes of applying the special criteria in B.5.c, severe accident resolutions are limited to design features when the intended function of the design feature is relied upon to resolve postulated accidents where the reactor core has melted and exited the reactor vessel and the containment is being challenged (severe accidents). These design features are identified in Section 1.9.5 of the DCD, with other issues, and are described in other sections of the DCD. Therefore, the location of design information in the DCD is not important to the application of this special procedure for severe accident issues. However, the special procedure in B.5.c does not apply to design features that resolve so-called beyond design basis accidents or other low probability events. The important aspect of this special procedure is that it is limited solely to severe accident design features, as defined above. Some design features may have intended functions to meet "design basis" requirements and to resolve "severe accidents." If these design features are reviewed under subparagraph VIII.B.5, then the appropriate criteria from either B.5.b or B.5.c are selected depending upon the function being changed.

An applicant or licensee that plans to depart from Tier 2 information, under subparagraph VIII.B.5, must prepare a safety evaluation which provides the bases for the determination that the proposed change does not involve an unreviewed safety question, a change to Tier 1 or Tier 2\* information, or a change to the technical specifications, as explained above. In order to achieve the Commission's goals for design certification, the evaluation needs to consider all of the matters that were resolved in the DCD, such as generic issue resolutions that are relevant to the proposed departure. The benefits of the early resolution of safety issues would be lost if departures from the DCD were made that violated these resolutions without appropriate review. The evaluation of the relevant matters needs to consider the proposed departure over the full range of power operation from startup to shutdown, as it relates to anticipated operational occurrences, transients, design basis accidents, and severe accidents. The evaluation must also include a review of all relevant secondary references from the DCD because Tier 2 information intended to be treated as requirements is contained in the secondary references. The evaluation should consider Tables 14.3-1 through 14.3-8 and 19.59-29 of the generic DCD to ensure that the proposed change does not impact Tier 1. These tables contain various cross-references from the safety analyses and probabilistic risk assessment in Tier 2 to the important parameters that were included in Tier 1. Although many issues and analyses could have been cross-referenced, the listings in these tables were developed only for key analyses for the AP600 design. Westinghouse provided more detailed cross-references for important analysis assumptions that are included in Tier 1 in its revised response to RAI 640.60 (DCP/NRC 1440 - September 15, 1998).

If a proposed departure from Tier 2 involves a change to or departure from Tier 1 or Tier 2\* information, technical specifications, or otherwise constitutes a USQ, then the applicant or licensee must obtain NRC approval through the appropriate process set forth in this appendix before implementing the proposed departure. The NRC does not endorse NSAC-125, "Guidelines for 10 CFR 50.59 Safety Evaluations," for performing safety evaluations required by

subparagraph VIII.B.5 of this appendix. However, the NRC will work with industry, if it is desired, to develop an appropriate guidance document for processing proposed changes under paragraph VIII.B of this appendix.

A party to an adjudicatory proceeding (e.g., for issuance of a combined license) who believes that an applicant or licensee has not complied with subparagraph VIII.B.5 when departing from Tier 2 information, may petition to admit such a contention into the proceeding under B.5.f. This provision was included because an incorrect departure from the requirements of this appendix essentially places the departure outside of the scope of the Commission's safety finding in the design certification rulemaking. Therefore, it follows that properly-founded contentions alleging such incorrectly-implemented departures cannot be considered "resolved" by this rulemaking. As set forth in B.5.f of paragraph VIII.B, the petition must comply with the requirements of § 2.714(b)(2) and show that the departure does not comply with subparagraph B.5. Any other party may file a response to the petition. If on the basis of the petition and any responses, the presiding officer in the proceeding determines that the required showing has been made, the matter shall be certified to the Commission for its final determination. In the absence of a proceeding, petitions alleging non-conformance with subparagraph B.5 requirements applicable to Tier 2 departures will be treated as petitions for enforcement action under 10 CFR 2.206.

Subparagraph B.6 provides a process for departing from Tier 2\* information. The creation of and restrictions on changing Tier 2\* information resulted from the development of the Tier 1 information for the ABWR design. During this development process, the applicants for design certification requested that the amount of information in Tier 1 be minimized to provide additional flexibility for an applicant or licensee who references this appendix. Also, many codes, standards, and design processes, which were not specified in Tier 1, that are acceptable for meeting ITAAC were specified in Tier 2. The result of these actions is that certain significant information only exists in Tier 2 and the Commission does not want this significant information to be changed without prior NRC approval. This Tier 2\* information is identified in the generic DCD with italicized text and brackets.

Although the Tier 2\* designation was originally intended to last for the lifetime of the facility, like Tier 1 information, the NRC determined that some of the Tier 2\* information could expire when the plant first achieves full (100%) power, after the finding required by 10 CFR 52.103(g), while other Tier 2\* information must remain in effect throughout the life of the facility. The determining factors were the Tier 1 information that would govern these areas after first full power and the NRC's judgement on whether prior approval was required before implementation of the change due to the significance of the information. Therefore, certain Tier 2\* information listed in B.6.c of paragraph VIII.B ceases to retain its Tier 2\* designation after full power operation is first achieved following the Commission finding in 10 CFR 52.103(g). Thereafter, that information is deemed to be Tier 2 information that is subject to the departure requirements in paragraph subparagraph B.5. By contrast, the Tier 2\* information identified in B.6.b of paragraph VIII.B retains its Tier 2\* designation throughout the duration of the license, including any period of renewal.

Certain preoperational tests in B.6.c of paragraph VIII.B are designated to be performed only for the first plant or first three plants that reference this appendix. Westinghouse's basis for performing these "first-plant-only" and "first-three-plants-only" preoperational tests is provided in Section 14.2.5 of the DCD. The NRC staff found Westinghouse's basis for performing these tests and its justification for only performing the tests on the first-plant or first-three-plants acceptable. The NRC staff's decision was based on the need to verify that plant-specific manufacturing and/or construction variations do not adversely impact the predicted

performance of certain passive safety systems, while recognizing that these special tests will result in significant thermal transients being applied to critical plant components. The NRC staff believes that the range of manufacturing or construction variations that could adversely affect the relevant passive safety systems will be adequately disclosed after performing the designated tests on the first plant, or the first three plants, as applicable. The COL action item in Section 14.4.6 of the DCD states that subsequent plants shall either perform these preoperational tests or justify that the results of the first-plant-only or first-three-plant-only tests are applicable to the subsequent plant. The Tier 2\* designation for these tests will expire after the first plant or first three plants complete these tests, as indicated in B.6.c of paragraph VIII.B.

If Tier 2\* information is changed in a generic rulemaking, the designation of the new information (Tier 1, 2\*, or 2) would also be determined in the rulemaking and the appropriate process for future changes would apply. If a plant-specific departure is made from Tier 2\* information, then the new designation would apply only to that plant. If an applicant who references this design certification makes a departure from Tier 2\* information, the new information is subject to litigation in the same manner as other plant-specific issues in the licensing hearing. If a licensee makes a departure, it will be treated as a license amendment under 10 CFR 50.90 and the finality is in accordance with VI.B.5 of this appendix. Any requests for departures from Tier 2\* information that affect Tier 1 must also comply with the requirements in paragraph VIII.A of this appendix.

### **Operational Requirements**

The change process for technical specifications and other operational requirements in the DCD is set forth in paragraph VIII.C of this appendix. This change process has elements similar to the Tier 1 and Tier 2 change process in paragraphs VIII.A and VIII.B, but with significantly different change standards. Because of the different finality status for technical specifications and other operational requirements (refer to III.F of this SOC), the Commission decided to designate a special category of information, consisting of the technical specifications and other operational requirements, with its own change process in paragraph VIII.C. The key to using the change processes in Section VIII is to determine if the proposed change or departure requires a change to a design feature described in the generic DCD. If a design change is required, then the appropriate change process in paragraph VIII.A or VIII.B applies. However, if a proposed change to the technical specifications or other operational requirements does not require a change to a design feature in the generic DCD, then paragraph VIII.C applies. The language in paragraph VIII.C also distinguishes between generic (Section 16.1 of DCD) and plant-specific technical specifications to account for the different treatment and finality accorded technical specifications before and after a license is issued.

The process in subparagraph VIII.C.1 for making generic changes to the generic technical specifications in Section 16.1 of the DCD or other operational requirements in the generic DCD is accomplished by rulemaking and governed by the backfit standards in 10 CFR 50.109. The determination of whether the generic technical specifications and other operational requirements were completely reviewed and approved in the design certification rulemaking is based upon the extent to which an NRC safety conclusion in the FSER is being modified or changed. If it cannot be determined that the technical specification or operational requirement was comprehensively reviewed and finalized in the design certification rulemaking, then there is no backfit restriction under 10 CFR 50.109 because no prior position was taken on this safety matter. Some generic technical specifications contain bracketed values, which clearly indicate that the NRC staff's review was not complete. Generic changes made under subparagraph VIII.C.1 are applicable to all applicants or licensees (refer to subparagraph VIII.C.2), unless the

change is irrelevant because of a plant-specific departure.

Plant-specific departures may occur by either a Commission order under subparagraph VIII.C.3 or an applicant's exemption request under subparagraph VIII.C.4. The basis for determining if the technical specification or operational requirement was completely reviewed and approved for these processes is the same as for subparagraph VIII.C.1. If the technical specification or operational requirement was comprehensively reviewed and finalized in the design certification rulemaking, then the Commission must demonstrate that special circumstances are present before ordering a plant-specific departure. If not, there is no restriction on plant-specific changes to the technical specifications or operational requirements, prior to issuance of a license, provided a design change is not required. Although the generic technical specifications were reviewed by the NRC staff to facilitate the design certification review, the Commission intends to consider the lessons learned from subsequent operating experience during its licensing review of the plant-specific technical specifications. The process for petitioning to intervene on a technical specification or operational requirement is similar to other issues in a licensing hearing, except that the petitioner must also demonstrate why special circumstances are present (subparagraph VIII.C.5).

Finally, the generic technical specifications will have no further effect on the plant-specific technical specifications after the issuance of a license that references this appendix. The bases for the generic technical specifications will be controlled by the change process in paragraph VIII.C of this appendix. After a license is issued, the bases will be controlled by the bases change provision set forth in the administrative controls section of the plant-specific technical specifications.

#### I. Inspections, tests, analyses, and acceptance criteria (ITAAC).

The purpose of Section IX of this appendix is to set forth how the ITAAC in Tier 1 of this design certification rule are to be treated in a license proceeding. Paragraph A restates the responsibilities of an applicant or licensee for performing and successfully completing ITAAC, and notifying the NRC of such completion. Subparagraph A.1 makes it clear that an applicant may proceed at its own risk with design and procurement activities subject to ITAAC, and that a licensee may proceed at its own risk with design, procurement, construction, and preoperational testing activities subject to an ITAAC, even though the NRC may not have found that any particular ITAAC has been successfully completed. Subparagraph A.2 requires the licensee to notify the NRC that the required inspections, tests, and analyses in the ITAAC have been completed and that the acceptance criteria have been met.

Subparagraphs B.1 and B.2 essentially reiterate the NRC's responsibilities with respect to ITAAC as set forth in 10 CFR 52.99 and 52.103(g). Finally, subparagraph B.3 states that ITAAC do not, by virtue of their inclusion in the DCD, constitute regulatory requirements after the licensee has received authorization to load fuel or for renewal of the license. However, subsequent modifications must comply with the design descriptions in the DCD unless the applicable requirements in 10 CFR 52.97 and Section VIII of this appendix have been complied with. As discussed in paragraph III.D of this SOC, the Commission will defer a determination of the applicability of ITAAC and their effect in terms of issue resolution in 10 CFR Part 50 licensing proceedings to such time that a Part 50 applicant decides to reference this appendix.

#### J. Records and Reporting.

The purpose of Section X of this appendix is to set forth the requirements for maintaining records of changes to and departures from the generic DCD, which are to be reflected in the plant-specific DCD. Section X also sets forth the requirements for submitting

reports (including updates to the plant-specific DCD) to the NRC. This section of the appendix is similar to the requirements for records and reports in 10 CFR Part 50, except for minor differences in information collection and reporting requirements, as discussed in V of this SOC. Subparagraph X.A.1 of this appendix requires that a generic DCD and the proprietary and safeguards information referenced in the generic DCD be maintained by the applicant for this rule. The generic DCD was developed, in part, to meet the requirements for incorporation by reference, including availability requirements. Therefore, the proprietary and safeguards information could not be included in the generic DCD because it is not publicly available. However, the proprietary and safeguards information was reviewed by the NRC and, as stated in subparagraph VI.B.2 of this appendix, the Commission considers the information to be resolved within the meaning of 10 CFR 52.63(a)(4). Because this information is not in the generic DCD, the proprietary and safeguards information, or its equivalent, is required to be provided by an applicant for a license. Therefore, to ensure that this information will be available, a requirement for the design certification applicant to maintain the proprietary and safeguards information was added to subparagraph X.A.1 of this appendix. The acceptable version of the proprietary and safeguards information is identified (referenced) in the version of the DCD that is incorporated into this rule. The generic DCD and the acceptable version of the proprietary and safeguards information must be maintained for the period of time that this appendix may be referenced.

Subparagraphs A.2 and A.3 place record-keeping requirements on the applicant or licensee that references this design certification to maintain its plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made pursuant to Section VIII of this appendix. The term "plant-specific" was added to paragraph A.2 and other Sections of this appendix to distinguish between the generic DCD that is incorporated by reference into this appendix, and the plant-specific DCD that the applicant is required to submit under paragraph IV.A of this appendix. The requirement to maintain the generic changes to the generic DCD is explicitly stated to ensure that these changes are not only reflected in the generic DCD, which will be maintained by the applicant for design certification, but that the changes are also reflected in the plant-specific DCD. Therefore, records of generic changes to the DCD will be required to be maintained by both entities to ensure that both entities have up-to-date DCDs.

Paragraph X.A of this appendix does not place record-keeping requirements on site-specific information that is outside the scope of this rule. As discussed in III.D of this SOC, the final safety analysis report required by 10 CFR 52.79 will contain the plant-specific DCD and the site-specific information for a facility that references this rule. The phrase "site-specific portion of the final safety analysis report" in X.B.3.d of this appendix refers to the information that is contained in the final safety analysis report for a facility (required by 10 CFR 52.79) but is not part of the plant-specific DCD (required by paragraph IV.A of this appendix). Therefore, this rule does not require that duplicate documentation be maintained by an applicant or licensee that references this rule, because the plant-specific DCD is part of the final safety analysis report for the facility.

Subparagraphs B.1 and B.2 of this appendix establish reporting requirements for applicants or licensees that reference this rule that are similar to the reporting requirements in 10 CFR Part 50. For currently operating plants, a licensee is required to maintain records of the basis for any design changes to the facility made under 10 CFR 50.59. Section 50.59(b)(2) requires a licensee to provide a summary report of these changes to the NRC annually, or along with updates to the facility final safety analysis report under 10 CFR 50.71(e). Section 50.71(e)(4) requires that these updates be submitted annually, or 6 months after each refueling

outage if the interval between successive updates does not exceed 24 months.

The reporting requirements in subparagraph B.3 of this appendix vary according to four different time periods during a facilities' lifetime. Under B.3.a of paragraph X.B, if an applicant that references this rule decides to make departures from the generic DCD, then the departures and any updates to the plant-specific DCD must be submitted with the initial application for a license. Under B.3.b of paragraph X.B, the applicant may submit any subsequent reports and updates along with its amendments to the application provided that the submittals are made at least once per year. Because amendments to an application are typically made more frequently than once a year, this should not be an excessive burden on the applicant. Under B.3.c of paragraph X.B, summary reports must be submitted quarterly during the period of facility construction. This increase in frequency of summary reports of departures from the plant-specific DCD is in response to the Commission's guidance on reporting frequency in its SRM on SECY-90-377, dated February 15, 1991.

Quarterly reporting of design changes during the period of construction is necessary to closely monitor the status and progress of the construction of the plant. To make its finding under 10 CFR 52.99, the NRC must monitor the design changes made in accordance with Section VIII of this appendix. The ITAAC verify that the as-built facility conforms with the approved design and emphasizes design reconciliation and design verification. Quarterly reporting of design changes is particularly important in times where the number of design changes could be significant, such as during the procurement of components and equipment, detailed design of the plant at the start of construction, and during preoperational testing. The frequency of updates to the plant-specific DCD is not increased during facility construction. After the facility begins operation, the frequency of reporting reverts to the requirement in X.B.3.d of paragraph X.B, which is consistent with the requirement for plants licensed under 10 CFR Part 50.

#### IV. Finding of No Significant Environmental Impact: Availability

The Commission has determined under the National Environmental Policy Act of 1969, as amended (NEPA), and the Commission's regulations in 10 CFR Part 51, Subpart A, that this design certification rule is not a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement (EIS) is not required. The basis for this determination, as documented in the final environmental assessment, is that this amendment to 10 CFR Part 52 does not authorize the siting, construction, or operation of a facility using the AP600 design; it only codifies the AP600 design in a rule. The NRC will evaluate the environmental impacts and issue an EIS, as appropriate, in accordance with NEPA as part of the application(s) for the construction and operation of a facility.

In addition, as part of the final environmental assessment for the AP600 design, the NRC reviewed Westinghouse's evaluation of various design alternatives to prevent and mitigate severe accidents in Appendix 1B of the AP600 Standard Safety Analysis Report (SSAR). The Commission finds that Westinghouse's evaluation provides a reasonable assurance that certifying the AP600 design will not exclude severe accident mitigation design alternatives for a future facility that would prove cost beneficial had they been considered as part of the original design certification application. These issues are considered resolved for the AP600 design.

The final environmental assessment (EA), upon which the Commission's finding of no significant impact is based, and the AP600 SSAR are available for examination and copying at the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC. Single copies of the EA are also available from Jerry N. Wilson, Mailstop O-12 G15, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

V. Paperwork Reduction Act Statement

This final rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These requirements were approved by the Office of Management and Budget (OMB) on August 10, 1999 (OMB #3150-0151). If an application is submitted, the additional public reporting burden for this information collection is estimated to average 8 person-hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection.

Send comments on any aspect of this information collection, including suggestions for reducing the burden, to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail at BJS1@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0151), Office of Management and Budget, Washington, DC 20503.

**Public Protection Notification**

If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

VI. Regulatory Analysis

The NRC has not prepared a regulatory analysis for this final rule. The NRC prepares regulatory analyses for rulemakings that establish generic regulatory requirements applicable to all licensees. Design certifications are not generic rulemakings in the sense that design certifications do not establish standards or requirements with which all licensees must comply. Rather, design certifications are Commission approvals of specific nuclear power plant designs by rulemaking. Furthermore, design certification rulemakings are initiated by an applicant for a design certification, rather than the NRC. Preparation of a regulatory analysis in this circumstance would not be useful because the design to be certified is proposed by the applicant rather than the NRC. For these reasons, the Commission concludes that preparation of a regulatory analysis is neither required nor appropriate.

VII. Regulatory Flexibility Act Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this final rule will not have a significant economic impact upon a substantial number of small entities. The final rule provides for certification of a nuclear power plant design. Neither the design certification applicant, nor prospective nuclear power plant licensees who reference this design certification rule, fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the Small Business Size Standards set out in regulations issued by the Small Business Administration at 13 CFR Part 121.

VIII. Backfit Analysis

The Commission has determined that the backfit rule, 10 CFR 50.109, does not apply to this amendment because it does not impose new or changed requirements on existing 10 CFR Part 50 licensees. Therefore, a backfit analysis was not prepared for this rule.

IX. Small Business Regulatory Enforcement Fairness Act

As required by the Small Business Regulatory Enforcement Fairness Act of 1996, the NRC has determined that this action is not a major rule and has verified this determination with

the Office of Information and Regulatory Affairs, OMB.

X. National Technology Transfer and Advancement Act

The National Technology and Transfer Act of 1995 (Act), Public Law 104-113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. This rule provides for certification of a nuclear power plant design. Design certifications are not generic rulemakings in the sense that design certifications do not establish standards or requirements with which all licensees must comply. Rather, design certifications are Commission approvals of specific nuclear power plant designs by rulemaking. Furthermore, design certification rulemakings are initiated by an applicant for a design certification, rather than the NRC. For these reasons, the Commission concludes that the Act does not apply to this rule.

List of Subjects in 10 CFR Part 52

Administrative practice and procedure, Antitrust, Backfitting, Combined license, Early site permit, Emergency planning, Fees, Incorporation by reference, Inspection, Limited work authorization, Nuclear power plants and reactors, Probabilistic risk assessment, Prototype, Reactor siting criteria, Redress of site, Reporting and record keeping requirements, Standard design, Standard design certification.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553; the NRC is adopting the following amendments to 10 CFR Part 52.

Part 52 - Early Site Permits; Standard Design Certifications;  
and Combined Licenses for Nuclear Power Plants

1. The authority citation for 10 CFR Part 52 continues to read as follows:

AUTHORITY: Secs. 103, 104, 161, 182, 183, 186, 189, 68 Stat. 936, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 1244, as amended (42 U.S.C. 2133, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, 202, 206, 88 Stat. 1243, 1244, 1246, 1246, as amended (42 U.S.C. 5841, 5842, 5846).

2. In § 52.8, paragraph (b) is revised to read as follows:

§ 52.8 Information collection requirements: OMB approval.

\* \* \* \* \*

(b) The approved information collection requirements contained in this part appear in §§ 52.15, 52.17, 52.29, 52.35, 52.45, 52.47, 52.51, 52.57, 52.63, 52.75, 52.77, 52.78, 52.79, 52.89, 52.91, 52.99, and appendices A, B, and C.

3. A new Appendix C to 10 CFR Part 52 is added to read as follows:

## Appendix C To Part 52 - Design Certification Rule for the AP600 Design

### I. INTRODUCTION

Appendix C constitutes the standard design certification for the AP600<sup>1</sup> design, in accordance with 10 CFR Part 52, Subpart B. The applicant for certification of the AP600 design is Westinghouse Electric Company LLC.

### II. DEFINITIONS

A. *Generic design control document* (generic DCD) means the document containing the Tier 1 and Tier 2 information and generic technical specifications that is incorporated by reference into this appendix.

B. *Generic technical specifications* means the information, required by 10 CFR 50.36 and 50.36a, for the portion of the plant that is within the scope of this appendix.

C. *Plant-specific DCD* means the document, maintained by an applicant or licensee who references this appendix, consisting of the information in the generic DCD, as modified and supplemented by the plant-specific departures and exemptions made under Section VIII of this appendix.

D. *Tier 1* means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (hereinafter Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;
2. Design descriptions;
3. Inspections, tests, analyses, and acceptance criteria (ITAAC);
4. Significant site parameters; and
5. Significant interface requirements.

E. *Tier 2* means the portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (hereinafter Tier 2 information). Compliance with Tier 2 is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of this appendix. Compliance with Tier 2 provides a sufficient, but not the only acceptable, method for complying with Tier 1. Compliance methods differing from Tier 2 must satisfy the change process in Section VIII of this appendix. Regardless of these differences, an applicant or licensee must meet the requirement in Section III.B to reference Tier 2 when referencing Tier 1. Tier 2 information includes:

1. Information required by 10 CFR 52.47, with the exception of generic technical specifications and conceptual design information;
2. Information required for a final safety analysis report under 10 CFR 50.34;
3. Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met; and
4. Combined license (COL) action items (combined license information), which identify certain matters that shall be addressed in the site-specific portion of the final safety analysis report (FSAR) by an applicant who references this appendix. These items constitute information requirements but are not the only acceptable set of information in the FSAR. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR. After issuance of a construction permit or COL, these items

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<sup>1</sup>AP600 is a trademark of Westinghouse Electric Company LLC

are not requirements for the licensee unless such items are restated in the FSAR.

5. The investment protection short-term availability controls in Section 16.3 of the DCD.

F. *Tier 2\** means the portion of the Tier 2 information, designated as such in the generic DCD, which is subject to the change process in VIII.B.6 of this appendix. This designation expires for some Tier 2\* information under VIII.B.6.

G. All other terms in this appendix have the meaning set out in 10 CFR 50.2, 10 CFR 52.3, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

### III. SCOPE AND CONTENTS

A. Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3), and the generic technical specifications in the AP600 DCD (9/99 revision) are approved for incorporation by reference by the Director of the Office of the Federal Register on **[Insert date of approval]** in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the generic DCD may be obtained from Mr. Brian A. McIntyre, Manager, Advanced Plant Safety and Licensing, Westinghouse Electric Company, P.O. Box 355, Pittsburgh, PA 15230-0355. A copy of the generic DCD is available for examination and copying at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC 20555-0001. Copies are also available for examination at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20582 and the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix, including Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3), and the generic technical specifications except as otherwise provided in this appendix. Conceptual design information in the generic DCD and the evaluation of severe accident mitigation design alternatives in Appendix 1B of the generic DCD are not part of this appendix.

C. If there is a conflict between Tier 1 and Tier 2 of the DCD, then Tier 1 controls.

D. If there is a conflict between the generic DCD and either the application for design certification of the AP600 design or NUREG-1512, "Final Safety Evaluation Report Related to Certification of the AP600 Standard Design," (FSER), then the generic DCD controls.

E. Design activities for structures, systems, and components that are wholly outside the scope of this appendix may be performed using site-specific design parameters, provided the design activities do not affect the DCD or conflict with the interface requirements.

### IV. ADDITIONAL REQUIREMENTS AND RESTRICTIONS

A. An applicant for a license that wishes to reference this appendix shall, in addition to complying with the requirements of 10 CFR 52.77, 52.78, and 52.79, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix.

2. Include, as part of its application:

a. A plant-specific DCD containing the same information and utilizing the same organization and numbering as the AP600 DCD, as modified and supplemented by the applicant's exemptions and departures;

b. The reports on departures from and updates to the plant-specific DCD required by X.B of this appendix;

c. Plant-specific technical specifications, consisting of the generic and site-specific technical specifications, that are required by 10 CFR 50.36 and 50.36a;

- d. Information demonstrating compliance with the site parameters and interface requirements;
  - e. Information that addresses the COL action items; and
  - f. Information required by 10 CFR 52.47(a) that is not within the scope of this appendix.
3. Physically include, in the plant-specific DCD, the proprietary and safeguards information referenced in the AP600 DCD.
- B. The Commission reserves the right to determine in what manner this appendix may be referenced by an applicant for a construction permit or operating license under Part 50.

## V. APPLICABLE REGULATIONS

- A. Except as indicated in paragraph B of this section, the regulations that apply to the AP600 design are in 10 CFR Parts 20, 50, 73, and 100, codified as of [insert date that rule is signed], that are applicable and technically relevant, as described in the FSER (NUREG-1512).
- B. The AP600 design is exempt from portions of the following regulations:
- 1. Paragraph (a)(1) of 10 CFR 50.34 - whole body dose criterion;
  - 2. Paragraph (f)(2)(iv) of 10 CFR 50.34 - Plant Safety Parameter Display Console;
  - 3. Paragraphs (f)(2)(vii), (viii), (xxvi), and (xxviii) of 10 CFR 50.34 - Accident Source Term in TID 14844;
  - 4. Paragraph (c)(1) of 10 CFR 50.62 - Auxiliary (or emergency) feedwater system;
  - 5. Appendix A to 10 CFR Part 50, GDC 17 - Offsite Power Sources; and
  - 6. Appendix A to 10 CFR Part 50, GDC 19 - whole body dose criterion.

## VI. ISSUE RESOLUTION

A. The Commission has determined that the structures, systems, components, and design features of the AP600 design comply with the provisions of the Atomic Energy Act of 1954, as amended, and the applicable regulations identified in Section V of this appendix; and therefore, provide adequate protection to the health and safety of the public. A conclusion that a matter is resolved includes the finding that additional or alternative structures, systems, components, design features, design criteria, testing, analyses, acceptance criteria, or justifications are not necessary for the AP600 design.

B. The Commission considers the following matters resolved within the meaning of 10 CFR 52.63(a)(4) in subsequent proceedings for issuance of a combined license, amendment of a combined license, or renewal of a combined license, proceedings held pursuant to 10 CFR 52.103, and enforcement proceedings involving plants referencing this appendix:

- 1. All nuclear safety issues, except for the generic technical specifications and other operational requirements, associated with the information in the FSER, Tier 1, Tier 2 (including referenced information, which the context indicates is intended as requirements, and the investment protection short-term availability controls in Section 16.3), and the rulemaking record for certification of the AP600 design;
- 2. All nuclear safety and safeguards issues associated with the information in proprietary and safeguards documents, referenced and in context, are intended as requirements in the generic DCD for the AP600 design;
- 3. All generic changes to the DCD pursuant to and in compliance with the change processes in Sections VIII.A.1 and VIII.B.1 of this appendix;
- 4. All exemptions from the DCD pursuant to and in compliance with the change processes in Sections VIII.A.4 and VIII.B.4 of this appendix, but only for that proceeding;
- 5. All departures from the DCD that are approved by license amendment, but only for that proceeding;

6. Except as provided in VIII.B.5.f of this appendix, all departures from Tier 2 pursuant to and in compliance with the change processes in VIII.B.5 of this appendix that do not require prior NRC approval;

7. All environmental issues concerning severe accident mitigation design alternatives (SAMDA) associated with the information in the NRC's environmental assessment for the AP600 design and Appendix 1B of the generic DCD, for plants referencing this appendix whose site parameters are within those specified in the SAMDA evaluation.

C. The Commission does not consider operational requirements for an applicant or licensee who references this appendix to be matters resolved within the meaning of 10 CFR 52.63(a)(4). The Commission reserves the right to require operational requirements for an applicant or licensee who references this appendix by rule, regulation, order, or license condition.

D. Except in accordance with the change processes in Section VIII of this appendix, the Commission may not require an applicant or licensee who references this appendix to:

1. Modify structures, systems, components, or design features as described in the generic DCD;

2. Provide additional or alternative structures, systems, components, or design features not discussed in the generic DCD; or

3. Provide additional or alternative design criteria, testing, analyses, acceptance criteria, or justification for structures, systems, components, or design features discussed in the generic DCD.

E.1. Persons who wish to review proprietary and safeguards information or other secondary references in the AP600 DCD, in order to request or participate in the hearing required by 10 CFR 52.85 or the hearing provided under 10 CFR 52.103, or to request or participate in any other hearing relating to this appendix in which interested persons have adjudicatory hearing rights, shall first request access to such information from Westinghouse. The request must state *with particularity*:

a. The nature of the proprietary or other information sought;

b. The reason why the information currently available to the public in the NRC's public document room is insufficient;

c. The relevance of the requested information to the hearing issue(s) which the person proposes to raise; and

d. A showing that the requesting person has the capability to understand and utilize the requested information.

2. If a person claims that the information is necessary to prepare a request for hearing, the request must be filed no later than 15 days after publication in the Federal Register of the notice required either by 10 CFR 52.85 or 10 CFR 52.103. If Westinghouse declines to provide the information sought, Westinghouse shall send a written response within ten (10) days of receiving the request to the requesting person setting forth with particularity the reasons for its refusal. The person may then request the Commission (or presiding officer, if a proceeding has been established) to order disclosure. The person shall include copies of the original request (and any subsequent clarifying information provided by the requesting party to the applicant) and the applicant's response. The Commission and presiding officer shall base their decisions *solely* on the person's original request (including any clarifying information provided by the requesting person to Westinghouse), and Westinghouse's response. The Commission and presiding officer may order Westinghouse to provide access to some or all of the requested information, subject to an appropriate non-disclosure agreement.

## VII. DURATION OF THIS APPENDIX

This appendix may be referenced for a period of 15 years from **[Insert date 30 days after publication of the final rule in the Federal Register]**, except as provided for in 10 CFR 52.55(b) and 52.57(b). This appendix remains valid for an applicant or licensee who references this appendix until the application is withdrawn or the license expires, including any period of extended operation under a renewed license.

## VIII. PROCESSES FOR CHANGES AND DEPARTURES

### A. Tier 1 information.

1. Generic changes to Tier 1 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 1 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs A.3 or A.4 of this section.

3. Departures from Tier 1 information that are required by the Commission through plant-specific orders are governed by the requirements in 10 CFR 52.63(a)(3).

4. Exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1) and § 52.97(b). The Commission will deny a request for an exemption from Tier 1, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

### B. Tier 2 information.

1. Generic changes to Tier 2 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 2 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs B.3, B.4, B.5, or B.6 of this section.

3. The Commission may not require new requirements on Tier 2 information by plant-specific order while this appendix is in effect under §§ 52.55 or 52.61, unless:

a. A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time this appendix was approved, as set forth in Section V of this appendix, or to assure adequate protection of the public health and safety or the common defense and security; and

b. Special circumstances as defined in 10 CFR 50.12(a) are present.

4. An applicant or licensee who references this appendix may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 50.12(a). The Commission will deny a request for an exemption from Tier 2, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. The grant of an exemption to an applicant must be subject to litigation in the same manner as other issues material to the license hearing. The grant of an exemption to a licensee must be subject to an opportunity for a hearing in the same manner as license amendments.

5.a. An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2\* information, or the technical specifications, or involves an unreviewed safety question as defined in paragraphs B.5.b and B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

b. A proposed departure from Tier 2, other than one affecting resolution of a severe

accident issue identified in the plant-specific DCD, involves an unreviewed safety question if --

(1) The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the plant-specific DCD may be increased;

(2) A possibility for an accident or malfunction of a different type than any evaluated previously in the plant-specific DCD may be created; or

(3) The margin of safety as defined in the basis for any technical specification is reduced.

c. A proposed departure from Tier 2 affecting resolution of a severe accident issue identified in the plant-specific DCD, involves an unreviewed safety question if --

(1) There is a substantial increase in the probability of a severe accident such that a particular severe accident previously reviewed and determined to be not credible could become credible; or

(2) There is a substantial increase in the consequences to the public of a particular severe accident previously reviewed.

d. If a departure involves an unreviewed safety question as defined in paragraph B.5 of this section, it is governed by 10 CFR 50.90.

e. A departure from Tier 2 information that is made under paragraph B.5 of this section does not require an exemption from this appendix.

f. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under 10 CFR 52.103(a), who believes that an applicant or licensee who references this appendix has not complied with VIII.B.5 of this appendix when departing from Tier 2 information, may petition to admit into the proceeding such a contention. In addition to compliance with the general requirements of 10 CFR 2.714(b)(2), the petition must demonstrate that the departure does not comply with VIII.B.5 of this appendix. Further, the petition must demonstrate that the change bears on an asserted noncompliance with an ITAAC acceptance criterion in the case of a 10 CFR 52.103 preoperational hearing, or that the change bears directly on the amendment request in the case of a hearing on a license amendment. Any other party may file a response. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. The Commission may admit such a contention if it determines the petition raises a genuine issue of fact regarding compliance with VIII.B.5 of this appendix.

6.a. An applicant who references this appendix may not depart from Tier 2\* information, which is designated with italicized text or brackets and an asterisk in the generic DCD, without NRC approval. The departure will not be considered a resolved issue, within the meaning of Section VI of this appendix and 10 CFR 52.63(a)(4).

b. A licensee who references this appendix may not depart from the following Tier 2\* matters without prior NRC approval. A request for a departure will be treated as a request for a license amendment under 10 CFR 50.90.

(1) Maximum fuel rod average burn-up.

(2) Fuel principal design requirements.

(3) Fuel criteria evaluation process.

(4) Fire areas.

(5) Human factors engineering.

c. A licensee who references this appendix may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from the following Tier 2\* matters except in accordance with paragraph B.6.b of this section. After the plant first achieves full power, the following Tier 2\* matters revert to Tier 2 status and are thereafter subject to the

departure provisions in paragraph B.5 of this section.

- (1) Nuclear Island structural dimensions.
- (2) ASME Boiler & Pressure Vessel Code, Section III, and Code Case N-284.
- (3) Design Summary of Critical Sections.
- (4) ACI 318, ACI 349, and ANSI/AISC –690.
- (5) Definition of critical locations and thicknesses.
- (6) Seismic qualification methods and standards.
- (7) Nuclear design of fuel and reactivity control system, except burn-up limit.
- (8) Motor-operated and power-operated valves.
- (9) Instrumentation & control system design processes, methods, and standards.
- (10) PRHR natural circulation test (first plant only).
- (11) ADS and CMT verification tests (first three plants only).

d. Departures from Tier 2\* information that are made under paragraph B.6 of this section do not require an exemption from this appendix.

C. Operational requirements.

1. Generic changes to generic technical specifications and other operational requirements that were completely reviewed and approved in the design certification rulemaking and do not require a change to a design feature in the generic DCD are governed by the requirements in 10 CFR 50.109. Generic changes that do require a change to a design feature in the generic DCD are governed by the requirements in paragraphs A or B of this section.

2. Generic changes to generic technical specifications and other operational requirements are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs C.3 or C.4 of this section.

3. The Commission may require plant-specific departures on generic technical specifications and other operational requirements that were completely reviewed and approved, provided a change to a design feature in the generic DCD is not required and special circumstances as defined in 10 CFR 2.758(b) are present. The Commission may modify or supplement generic technical specifications and other operational requirements that were not completely reviewed and approved or require additional technical specifications and other operational requirements on a plant-specific basis, provided a change to a design feature in the generic DCD is not required.

4. An applicant who references this appendix may request an exemption from the generic technical specifications or other operational requirements. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 50.12(a). The grant of an exemption must be subject to litigation in the same manner as other issues material to the license hearing.

5. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under 10 CFR 52.103(a), who believes that an operational requirement approved in the DCD or a technical specification derived from the generic technical specifications must be changed may petition to admit into the proceeding such a contention. Such petition must comply with the general requirements of 10 CFR 2.714(b)(2) and must demonstrate why special circumstances as defined in 10 CFR 2.758(b) are present, or for compliance with the Commission's regulations in effect at the time this appendix was approved, as set forth in Section V of this appendix. Any other party may file a response thereto. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission

for determination of the admissibility of the contention. All other issues with respect to the plant-specific technical specifications or other operational requirements are subject to a hearing as part of the license proceeding.

6. After issuance of a license, the generic technical specifications have no further effect on the plant-specific technical specifications and changes to the plant-specific technical specifications will be treated as license amendments under 10 CFR 50.90.

#### IX. INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA (ITAAC)

A.1 An applicant or licensee who references this appendix shall perform and demonstrate conformance with the ITAAC before fuel load. With respect to activities subject to an ITAAC, an applicant for a license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk with design, procurement, construction, and preoperational activities, even though the NRC may not have found that any particular ITAAC has been satisfied.

2. The licensee who references this appendix shall notify the NRC that the required inspections, tests, and analyses in the ITAAC have been successfully completed and that the corresponding acceptance criteria have been met.

3. In the event that an activity is subject to an ITAAC, and the applicant or licensee who references this appendix has not demonstrated that the ITAAC has been satisfied, the applicant or licensee may either take corrective actions to successfully complete that ITAAC, request an exemption from the ITAAC in accordance with Section VIII of this appendix and 10 CFR 52.97(b), or petition for rulemaking to amend this appendix by changing the requirements of the ITAAC, under 10 CFR 2.802 and 52.97(b). Such rulemaking changes to the ITAAC must meet the requirements of paragraph VIII.A.1 of this appendix.

B.1 The NRC shall ensure that the required inspections, tests, and analyses in the ITAAC are performed. The NRC shall verify that the inspections, tests, and analyses referenced by the licensee have been successfully completed and, based solely thereon, find the prescribed acceptance criteria have been met. At appropriate intervals during construction, the NRC shall publish notices of the successful completion of ITAAC in the *Federal Register*.

2. In accordance with 10 CFR 52.99 and 52.103(g), the Commission shall find that the acceptance criteria in the ITAAC for the license are met before fuel load.

3. After the Commission has made the finding required by 10 CFR 52.103(g), the ITAAC do not, by virtue of their inclusion within the DCD, constitute regulatory requirements either for licensees or for renewal of the license; except for specific ITAAC, which are the subject of a Section 103(a) hearing, their expiration will occur upon final Commission action in such proceeding. However, subsequent modifications must comply with the Tier 1 and Tier 2 design descriptions in the plant-specific DCD unless the licensee has complied with the applicable requirements of 10 CFR 52.97 and Section VIII of this appendix.

#### X. RECORDS AND REPORTING

##### A. Records.

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes to Tier 1 and Tier 2. The applicant shall maintain the proprietary and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

2. An applicant or licensee who references this appendix shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made pursuant to Section VIII of this appendix throughout the period of application

and for the term of the license (including any period of renewal).

3. An applicant or licensee who references this appendix shall prepare and maintain written safety evaluations which provide the bases for the determinations required by Section VIII of this appendix. These evaluations must be retained throughout the period of application and for the term of the license (including any period of renewal).

**B. Reporting.**

1. An applicant or licensee who references this appendix shall submit a report to the NRC containing a brief description of any departures from the plant-specific DCD, including a summary of the safety evaluation of each. This report must be filed in accordance with the filing requirements applicable to reports in 10 CFR 50.4.

2. An applicant or licensee who references this appendix shall submit updates to its plant-specific DCD, which reflect the generic changes to the generic DCD and the plant-specific departures made pursuant to Section VIII of this appendix. These updates shall be filed in accordance with the filing requirements applicable to final safety analysis report updates in 10 CFR 50.4 and 50.71(e).

3. The reports and updates required by paragraphs B.1 and B.2 of this section must be submitted as follows:

a. On the date that an application for a license referencing this appendix is submitted, the application shall include the report and any updates to the plant-specific DCD.

b. During the interval from the date of application to the date of issuance of a license, the report and any updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

c. During the interval from the date of issuance of a license to the date the Commission makes its findings under 10 CFR 52.103(g), the report must be submitted quarterly. Updates to the plant-specific DCD must be submitted annually.

d. After the Commission has made its finding under 10 CFR 52.103(g), reports and updates to the plant-specific DCD may be submitted annually or along with updates to the site-specific portion of the final safety analysis report for the facility at the intervals required by 10 CFR 50.71(e), or at shorter intervals as specified in the license.

Dated at Rockville, Maryland, this **day of** 1999.

For the Nuclear Regulatory Commission.

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Annette L. Vietti-Cook,  
Secretary of the Commission