

NUCLEAR REGULATORY COMMISSION

10 CFR PART 52

RIN 3150-AH56

**AP1000 Design Certification**

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC or Commission) proposes to amend its regulations to certify the AP1000 standard plant design. This action is necessary so that applicants or licensees intending to construct and operate an AP1000 design may do so by referencing the AP1000 design certification rule (DCR). This proposed DCR is nearly identical to the AP600 DCR in the current regulations. The applicant for certification of the AP1000 design is Westinghouse Electric Company LLC (Westinghouse). The public is invited to submit comments on this proposed DCR and the AP1000 design control document (DCD) that would be incorporated by reference into the DCR. The NRC also invites the public to submit comments on the environmental assessment for the AP1000 design.

DATE: Submit comments by **[insert date 75 days after publication in the Federal Register.]** Submit comments specific to the information collections aspects of this rule by **[insert date 30 days after publication in the Federal Register.]** Comments received after the above dates will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before these dates.

ADDRESSES: You may submit comments by any one of the following methods. Please include the following number (RIN 3150-AH56) in the subject line of your comments.

Comments on rulemakings submitted in writing or in electronic form will be made available for public inspection. Because your comments will not be edited to remove any identifying or

contact information, the NRC cautions you against including personal information such as social security numbers and birth dates in your submission.

Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.

E-mail comments to: [SECY@nrc.gov](mailto:SECY@nrc.gov). If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at (301) 415-1966. You may also submit comments via the NRC's rulemaking web site at <http://ruleforum.llnl.gov>. Address questions about our rulemaking website to Carol Gallagher (301) 415-5905; email [cag@nrc.gov](mailto:cag@nrc.gov). Comments can also be submitted via the Federal eRulemaking Portal <http://www.regulations.gov>.

Hand deliver comments to: 11555 Rockville Pike, Rockville, Maryland 20852, between the hours of 7:30 am and 4:15 pm Federal workdays (Telephone (301) 415-1966).

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at (301) 415-1101.

Publicly available documents related to this rulemaking may be viewed electronically on the public computers located at the NRC's Public Document Room (PDR), O1 F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The PDR reproduction contractor will copy documents for a fee. Selected documents, including comments, can be viewed and downloaded electronically via the NRC rulemaking web site at <http://ruleforum.llnl.gov>.

Publicly available documents created or received at the NRC after November 1, 1999, are available electronically at the NRC's Electronic Reading Room at <http://www.nrc.gov/NRC/ADAMS/index.html>. From this site, the public can gain entry into the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC PDR Reference staff at 1-800-397-4209, 301-415-4737, or by email to [pdr@nrc.gov](mailto:pdr@nrc.gov).

You may submit comments on the information collections by the methods indicated in the Paperwork Reduction Act Statement.

FOR FURTHER INFORMATION CONTACT: Lauren Quinones-Navarro or Jerry N. Wilson, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone (301) 415-2007 or (301) 415-3145; e-mail: [lnq@nrc.gov](mailto:lnq@nrc.gov) or [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 (ESPs), standard design certifications, and combined licenses (COLs) for nuclear power plants. Subpart B of 10 CFR Part 52 established the process for obtaining design certifications. On March 28, 2002 (67 FR 20845), Westinghouse tendered its application for certification of the AP1000 standard plant 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. 52-006) on June 25, 2002 (67 FR 43690). The pre-application information submitted before the NRC formally accepted the application can be found under Project No. 711.

## II. TECHNICAL EVALUATION OF THE AP1000 DESIGN

As stated above, the procedure for certifying a standard design is performed under 10 CFR Part 52, Subpart B, and is carried out in two stages (technical and administrative). The technical review stage is initiated by an application filed in accordance with the requirements of 10 CFR 52.45, "Filing of Applications." This stage continues with reviews by the NRC staff and the Advisory Committee on Reactor Safeguards and ends with the issuance of a final safety evaluation report (FSER) that discusses the staff's conclusions related to the acceptability of the AP1000 design. The NRC staff issued the AP1000 FSER in September 2004 (NUREG-1793). The FSER provides the bases for issuance of a final design approval under Appendix O to Part 52, which is a prerequisite to a design certification. The final design approval for the AP1000 design was issued on September 13, 2004, and published in the *Federal Register* on September 17, 2004 (69 FR 56101).

The administrative review stage begins with the publication of a Federal Register notice that initiates rulemaking, in accordance with 10 CFR 52.51, "Administrative Review of Applications," and includes a proposed design certification rule. The rulemaking culminates with the denial of the application or the issuance of a design certification rule.

## III. SECTION-BY-SECTION DISCUSSION

The following discussion sets forth the purpose and key aspects of each section and paragraph of the proposed AP1000 DCR. All section and paragraph references are to the provisions in the proposed Appendix D to 10 CFR Part 52. The proposed DCR for the AP1000 standard plant design is nearly identical to the AP600 DCR, which the NRC previously codified

in 10 CFR Part 52, Appendix C (Design Certification Rule for the AP600 Design, 64 FR 72015, December 23, 1999). Many of the procedural issues and their resolutions for the AP600 DCR (e.g., the two-tier structure, Tier 2\*, the scope of issue resolution) were developed after extensive discussions with public stakeholders, including Westinghouse. Also, Westinghouse requested that policy resolutions for the AP600 design review be applied to the AP1000. Accordingly, the NRC has modeled the AP1000 DCR on the existing DCRs, with certain departures. These departures are necessary to account for differences in the AP1000 design documentation, design features, and environmental assessment (including severe accident mitigation design alternatives).

#### A. Introduction

The purpose of Section I of proposed Appendix D to 10 CFR Part 52 (this appendix) would be to identify the standard plant design that is approved by this DCR 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 COL contracts with the design certification applicant to provide the generic design control document (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, X.A.1 of this appendix would impose 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

During development of the first two design certification rules, 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 reference the appendix. This distinction is necessary in order to specify the plant-specific requirements applicable to applicants and licensees referencing the appendix. The generic DCDs 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, in accordance with 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 chooses to make in accordance with the relevant processes in Section VIII of this appendix. Thus, the plant-specific DCD would function like an updated Final Safety Analysis Report (FSAR) because 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 would define both a generic DCD and a plant-specific DCD.

Also, the Commission decided to treat the technical specifications (TS) in Section 16.1 of the generic DCD as a special category of information and to designate them as generic TS in order to facilitate the special treatment of this information under this appendix. A COL applicant must submit plant-specific TS that consist of the generic TS, which may be modified under paragraph VIII.C of this appendix, and the remaining plant-specific information needed to complete the TS. The 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 TS.

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 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. Therefore, appropriate definitions for these additional terms are included in this appendix. The nuclear industry representatives requested a two-tiered structure for the design certification rules to achieve issue preclusion for a greater amount of information than was originally planned for the design certification rules, while retaining flexibility for design implementation. The Commission approved the use of a two-tiered rule structure in its staff requirements memorandum (SRM), dated February 14, 1991, on SECY-90-377, "Requirements for Design Certification Under 10 CFR Part 52," dated November 8, 1990. This document and others are available in the Regulatory History of Design Certification (see Section IV, Availability of Documents).

The Tier 1 portion of the design-related information contained in the DCD would be *certified* by this appendix and, therefore, be subject to the special backfit provisions in paragraph VIII.A of this appendix. An applicant who references this appendix would be required to incorporate by reference and comply with Tier 1, under paragraphs III.B and 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 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 Section VIII.A of this appendix.

The Tier 1 design descriptions serve as commitments for the lifetime of a facility referencing the design certification. The ITAAC verifies that the as-built facility conforms with the approved design and applicable regulations. Under 10 CFR 52.103(g), the Commission must find that the acceptance criteria in the ITAAC are met before authorizing 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 under 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. Tier 1 interface requirements 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 paragraph III.D of this statement of consideration [SOC]).

Tier 2 is the portion of the design-related information contained in the DCD that would be *approved* by this appendix but not certified. Tier 2 information would be 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 TS, 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, paragraphs III.B and IV.A.1 of this appendix would 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 would be specified in paragraph VIII.B of this appendix. Departures from Tier 2 would not negate the requirement in paragraph III.B to reference Tier 2.

A definition of "combined license action items" (COL information), which is part of the Tier 2 information, would be added to clarify that COL applicants who reference this appendix are required to address COL action items in their license application. However, the COL action items are not the only acceptable set of information. An applicant may depart from or omit COL action items, provided that the departure or omission is identified and justified in the FSAR. After issuance of a construction permit or COL, these items would not be requirements for the licensee unless they are restated in the FSAR. For additional discussion, see Section D.

The investment protection short-term availability controls, which are set forth in Section 16.3 of the generic DCD, would be added to the information that is part of Tier 2. These requirements were 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. The availability controls may be changed if the associated design feature is changed under paragraph VIII.B of this appendix. For additional discussion, see Section C.

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 Section H, a plant-specific departure from Tier 2\* information would require 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 paragraph 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 AP1000 DCR. The Tier 2\* designation for these selected tests would 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.

In an earlier rulemaking (64 FR 53582; October 4, 1999), the Commission revised 10 CFR 50.59 to incorporate new thresholds for permitting changes to a plant as described in the FSAR without NRC approval. For consistency and clarity, the Commission proposes to use these new thresholds in the proposed AP1000 DCR. Inasmuch as § 50.59 is the primary change mechanism for operating nuclear plants, the Commission believes that future plants referencing the AP1000 DCR should utilize thresholds as close to § 50.59 as is practicable and appropriate. Because of some differences in how the change control requirements are structured in the DCRs, certain definitions contained in § 50.59 are not applicable to 10 CFR Part 52 and are not being included in this proposed rule. One definition that the Commission is including is the definition from the new § 50.59 for a “departure from a method of evaluation,” (paragraph II.G), which is appropriate to include in this rulemaking so that the eight criteria in paragraph VIII.B.5.b of the proposed rule will be implemented as intended.

### C. Scope and Contents

The purpose of Section III of this DCR would be 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 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 TS into this appendix. 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 incorporated material has the same legal status as if it were published in the *Code of Federal Regulations*. 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 TS, have been combined into a single document called the generic DCD, 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 (10 CFR Part 51). One of the requirements of the 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 would identify a Westinghouse representative to be contacted in order to obtain a copy of the generic DCD.

Paragraphs A and B would 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 AP1000 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 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.” The

Commission included this characterization 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 accessible electronically in ADAMS and at the OFR. Copies of the generic DCD will also be available at the NRC's PDR. 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 ADAMS. If a generic change (rulemaking) is made to the DCD by the change process provided in Section VIII of this appendix, then at the completion of the rulemaking the NRC would 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 would require that the design certification applicant maintain an up-to-date copy under paragraph X.A.1 of this appendix because it is likely that most applicants intending to reference the standard design would obtain the generic DCD from the design certification applicant. Plant-specific changes to and departures from the generic DCD would be maintained by the applicant or licensee that references this appendix in a plant-specific DCD under paragraph X.A.2 of this appendix.

In addition to requiring compliance with this appendix, paragraph B would clarify 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 contained in Tier 2 information. 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 is not required 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 VII of this SOC on environmental impacts.

Paragraphs C and D would set forth the manner in which potential conflicts would 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 would establish the generic DCD as the controlling document in the event of an inconsistency between the DCD and the FSER for the certified standard design.

Paragraph E would clarify 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 would apply to site-specific portions of the plant, such as the administration building. Because this statement is not a definition, this provision has been located in Section III of this appendix.

#### D. Additional Requirements and Restrictions

Section IV of this appendix would set forth additional requirements and restrictions imposed upon an applicant who references this appendix. Paragraph IV.A would set forth the information requirements for these applicants. This appendix would distinguish 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 included in the application). Any incorporation by reference in the application should be clear and should specify the title, date, edition, or version of a document, the page number(s), and table(s) containing the relevant information to be incorporated.

Paragraph A.1 would require an applicant who references this proposed DCR to incorporate by reference this DCR in its application. The legal effect of such an incorporation by reference is that this appendix would be legally binding on the applicant or licensee. Paragraph A.2.a would require that a plant-specific DCD be included in the initial application. This would ensure that the applicant commits to complying with the DCD. This paragraph also would require that the plant-specific DCD uses the same format as the generic DCD and reflects 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 would become the plant's FSAR, by including 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, would result in an application that is easier to use and should minimize "duplicate documentation" and the attendant possibility for confusion. Paragraph A.2.a would also require that the initial application include the reports on departures and exemptions as of the time of submission of the application.

Paragraph A.2.b would require that an application referencing this proposed DCR 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. Paragraph A.2.c would require submission of plant-specific TS for the plant that consists of the generic TS from Section 16.1 of the DCD, with any changes made under paragraph VIII.C of this appendix, and

the TS 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 TS, such as bracketed values.

Paragraph A.2.d would require the applicant referencing this proposed DCR to 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 it would be unacceptable for this design unless the applicant seeks an exemption under Section VIII of this appendix and provides adequate justification for locating the certified design on the proposed site. Paragraph A.2.e would require submission of information addressing COL action items, identified in the generic DCD as COL information in the application. The COL information identifies matters that need to be addressed by an applicant who 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). Paragraph A.2.f would require that the application include the information specified 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. Paragraph A.3 would require the applicant to physically include, not simply reference, the proprietary and safeguards information referenced in the DCD, or its equivalent, to ensure that the applicant has actual notice of these requirements.

Paragraph IV.B would reserve the right to determine to the Commission in what manner this DCR 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 DCRs were not implemented in the manner that was originally envisioned at the time that 10 CFR Part 52 was promulgated. The Commission's concern is with the way ITAAC were developed and the lack of experience with design certifications in license proceedings. Therefore, it is appropriate that the Commission retain some discretion regarding the way this DCR 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 would be applicable and in effect if this proposed design certification is approved. These regulations would consist of the technically relevant regulations identified in paragraph A, except for the regulations in paragraph B that would not be applicable to this certified design.

Paragraph A would identify the regulations in 10 CFR Parts 20, 50, 73, and 100 that are applicable to the AP1000 design. The Commission's determination of the applicable regulations would be made as of the date specified in paragraph V.A of this appendix, which would be the date that this appendix is approved by the Commission and signed by the Secretary.

In paragraph V.B of this appendix, the Commission would identify the regulations that do not apply to the AP1000 design. The Commission has determined that the AP1000 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-1793) and/or summarized below:

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

Under 10 CFR 52.47(a)(ii), an applicant for design certification must demonstrate compliance with any technically relevant Three Mile Island (TMI) requirements in 10 CFR

50.34(f). The requirement in 10 CFR 50.34(f)(2)(iv) states that an application must provide a plant safety parameter display console that will display 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 addresses 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 safety parameter display system (SPDS) requirements into the design requirements for the alarm and display systems. The NRC staff has determined that the function of a separate SPDS may be integrated into the overall control room design. Therefore, the Commission has determined that the special circumstances for allowing an exemption as described in 10 CFR 50.12(a)(2)(ii) exist because 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.

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

The AP1000 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 anticipated transient without scram (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 for allowing an exemption described in 10 CFR 50.12(a)(2)(ii) exist because the requirement for an auxiliary or emergency feedwater system is not necessary to achieve the underlying purpose of 10 CFR 50.62(c)(1). This is 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.

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

Westinghouse requested a partial exemption from the requirement in General Design Criteria (GDC) 17 for a second offsite power supply circuit. The AP1000 plant design supports an exemption to this requirement by providing safety-related “passive” systems. These passive safety-related systems only require electric power for valves and the 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 for allowing an exemption as described in 10 CFR 50.12(a)(2)(ii) exist because the requirement need not be applied in this particular circumstance to achieve the underlying purpose of having two offsite power sources. This is because the AP1000 design includes an acceptable alternative approach to accomplish safety functions that do 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.

## F. Issue Resolution

The purpose of Section VI of this appendix would be 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 would describe the nature of the Commission's findings in general terms and make the finding required by 10 CFR 52.54 for the Commission's approval of this DCR. Furthermore, paragraph A would explicitly state the Commission's determination that this design provides adequate protection of the public health and safety.

Paragraph B would set forth the scope of issues that 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, paragraph B.1 would provide 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-1793), 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.

Paragraph B.2 would provide for issue preclusion of proprietary and safeguards information. Paragraphs B.3, B.4, B.5, and B.6 would 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. Paragraphs B.4, B.5, and B.6, which would characterize the scope of issue resolution in three situations, use the phrase “but only for that plant” (emphasis added). Paragraph B.4 would describe how issues associated with a design certification rule are resolved when an exemption has been granted for a plant referencing the design certification rule. Paragraph B.5 would describe how issues are resolved when a plant referencing the design certification rule obtains a license amendment for a departure from Tier 2 information.

Paragraph B.6 would describe how issues are resolved when the applicant or licensee departs from the Tier 2 information on the basis of paragraph VIII.B.5, which would waive the requirement to get NRC approval. In all three situations, after a matter (e.g., an exemption in the case of paragraph B.4) is addressed for a specific plant referencing a design certification rule, the adequacy of that matter *for that plant* would not ordinarily be subject to challenge in any subsequent proceeding or action for that plant (such as an enforcement action) listed in the introductory portion of paragraph IV.B. There would not, by contrast, be any issue resolution on that subject matter for any other plant.

Paragraph B.7 would provide 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 § 2.309 and present sufficient information to create a genuine controversy in order to obtain a hearing on the site parameter exemption.

Paragraph C would reserve the right of the Commission to impose operational requirements on applicants that reference this appendix. This provision would reflect that operational requirements, including generic TS 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 would 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'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 VIII.C of this appendix).

Paragraph C would 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 during a combined license review. 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 would reiterate 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 (VI.D.3 would address ITAAC) within the scope of the certified design.

Paragraph E would provide the procedure for an interested member of the public to obtain access to proprietary or safeguards information for the AP1000 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. Paragraph E, would specify that 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 would be in part, to specify the period during which this design certification may be referenced by an applicant for a COL, under 10 CFR 52.55. This section would also state that the design certification would remain 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 would be effective until the application is withdrawn or the license issued on that application expires. Also, the design certification would be effective for the referencing licensee 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 under 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 would be 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 would require 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."

Section VIII of this appendix and Section XI of 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 when 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 would be 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 when 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 provide for notice and opportunity for public comment on the proposed

change, as required by 10 CFR 52.63(a)(1). Departures from Tier 1 may occur in two ways: (1) the Commission may *order* a licensee to depart from Tier 1, as provided in paragraph A.3; or (2) an applicant or licensee may request an *exemption* from Tier 1, as provided in paragraph A.4. If the Commission seeks to order a licensee to depart from Tier 1, paragraph A.3 would require that the Commission find both that the departure is necessary for adequate protection or for compliance, and that special circumstances are present. Paragraph A.4 would provide 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 would 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, namely, Tier 2, Tier 2\*, and Tier 2\* with a time of expiration, would be 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 would be different. As stated in Section III, of this preamble, it is the Commission's intent that this appendix would emulate Appendix C to 10 CFR Part 52. However, the Commission has revised the § 50.59-like change process in paragraph VIII.B.5 of this appendix to be commensurate with the new 10 CFR 50.59 (64 FR 53613, October 4, 1994).

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 paragraph B.1, generic Tier 2 changes would be accomplished by rulemaking amending the generic DCD and would be governed by the standards in 10 CFR 52.63(a)(1). This provision would provide that

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

Similar to Commission-ordered Tier 1 departures and generic Tier 2 changes, Commission-ordered Tier 2 departures could not be imposed except when 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 paragraph B.3. However, the special circumstances for the Commission-ordered Tier 2 departures would 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 information.

An applicant or licensee would be permitted to request an exemption from Tier 2 information as set forth in proposed paragraph B.4. The applicant or licensee would have to demonstrate that the exemption complies with one of the special circumstances in 10 CFR 50.12(a). In addition, the Commission would 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 would be 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 would be subject to litigation in the same manner as a license amendment.

For plant-specific Tier 2 information, the change process in the existing DCRs would be commensurate with the change process in the former 10 CFR 50.59. The proposed rule would revise paragraph VIII.B.5 to conform the terminology in the § 50.59-like change process to that used in the revised § 50.59. This amendment would delete references to unreviewed safety question and safety evaluation, and would conform to the evaluation criteria concerning when prior NRC approval is needed. Also, a definition would be added (paragraph II.G) for “departure from a method of evaluation” to support the evaluation criterion in paragraph VIII.B.5.b(8).

Paragraph B.5 would allow 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, TS, or does not require a license amendment under paragraphs B.5.b or B.5.c. The TS referred to in B.5.a of this paragraph are the TS 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 TS would be controlling under paragraph B.5. The bases for the plant-specific TS would be controlled by the bases control procedures for the plant-specific TS (analogous to the bases control provision in the Improved Standard Technical Specifications). The requirement for a license amendment in paragraph B.5.b would be similar to the definition in the new 10 CFR 50.59 and apply to all information in Tier 2 except for the information that resolves the severe accident issues.

The Commission believes that the resolution of severe accident issues should be preserved and maintained in the same fashion as 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 proposed separate criteria in paragraph B.5.c for determining if a departure from information that resolves severe accident issues would require a license amendment. For purposes of applying the special criteria in paragraph B.5.c, severe accident resolutions would be limited to design features when the intended function of the design feature is relied upon to resolve postulated accidents when the reactor core has melted and exited the reactor vessel, and the containment is being challenged. These design features are identified in Section 1.9.5 and Appendix 19B 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 paragraph B.5.c would 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 would be limited 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 paragraph VIII.B.5, then the appropriate criteria from

either paragraphs B.5.b or B.5.c would be selected depending upon the function being changed.

An applicant or licensee that plans to depart from Tier 2 information, under paragraph VIII.B.5, would be required to prepare an evaluation which provides the bases for the determination that the proposed change does not require a license amendment or involve a change to Tier 1 or Tier 2\* information, or a change to the TS, as explained above. In order to achieve the Commission's goals for design certification, the evaluation would need 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 would need 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 would also have to include a review of all relevant secondary references from the DCD because Tier 2 information, which is intended to be treated as a requirement, would be contained in the secondary references. The evaluation would consider Tables 14.3-1 through 14.3-8 and 19.59-18 of the generic DCD to ensure that the proposed change does not impact Tier 1 information. These tables contain 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 AP1000 design.

A party to an adjudicatory proceeding (e.g., for issuance of a COL) who believes that an applicant or licensee has not complied with paragraph VIII.B.5 when departing from Tier 2 information, would be permitted to petition to admit such a contention into the proceeding under

paragraph B.5.f. This provision has been proposed because an incorrect departure from the requirements of this appendix essentially would place 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 could not be considered "resolved" by this rulemaking. As set forth in paragraph B.5.f, the petition would have to comply with the requirements of 10 CFR 2.309 and show that the departure does not comply with paragraph B.5. Any other party would be allowed to 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 would be certified to the Commission for its final determination. In the absence of a proceeding, petitions alleging nonconformance with paragraph B.5 requirements applicable to Tier 2 departures would be treated as petitions for enforcement action under 10 CFR 2.206.

Paragraph B.6 would provide 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 ABWR design certification (Appendix A to Part 52) and the ABB-CE System 80+ design certification (Appendix B to Part 52). During this development process, these applicants requested that the amount of information in Tier 1 be minimized to provide additional flexibility for an applicant or licensee who references these appendices. Also, many codes, standards, and design processes, which would not be specified in Tier 1 that are acceptable for meeting ITAAC, were specified in Tier 2. The result of these actions would be that certain significant information only exists in Tier 2 and the Commission would not want this significant information to be changed without prior NRC approval. This Tier 2\* information would be identified in the generic DCD with italicized text and brackets (See Table 1-1 of AP1000 DCD Introduction).

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 percent) 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 factors determining whether Tier 2\* information could expire after the first full power was achieved were whether the Tier 1 information would govern these areas after first full power and the NRC's determination that prior approval was required before implementation of the change due to the significance of the information. Therefore, certain Tier 2\* information listed in paragraph B.6.c would cease to retain its Tier 2\* designation after full-power operation is first achieved following the Commission finding under 10 CFR 52.103(g). Thereafter, that information would be deemed to be Tier 2 information that would be subject to the departure requirements in paragraph B.5. By contrast, the Tier 2\* information identified in paragraph B.6.b would retain its Tier 2\* designation throughout the duration of the license, including any period of license renewal.

Certain preoperational tests in paragraph B.6.c would be 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 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'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 would result in significant thermal transients being applied to critical plant components. The NRC believes that the range of manufacturing or construction variations that could adversely affect the relevant passive safety systems would 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 would expire after the first plant or first three plants complete these tests, as indicated in paragraph B.6.c.

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 would be subject to litigation in the same manner as other plant-specific issues in the licensing hearing. If a licensee makes a departure from Tier 2\* information, it would be treated as a license amendment under 10 CFR 50.90 and the finality would be determined in accordance with paragraph VI.B.5 of this appendix. Any requests for departures from Tier 2\* information that affects Tier 1 would also have to comply with the requirements in paragraph VIII.A of this appendix.

### **Operational Requirements**

The change process for TS and other operational requirements in the DCD would be set forth in paragraph VIII.C. 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 TS and other operational requirements (refer to paragraph III.F of this SOC), the Commission decided to designate a special category of information, consisting of the TS and other operational requirements, with its own change

process in proposed paragraph VIII.C. The key to using the change processes proposed in Section VIII is to determine if the proposed change or departure would require 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 would apply. However, if a proposed change to the TS or other operational requirements does not require a change to a design feature in the generic DCD, then paragraph VIII.C would apply. The language in paragraph VIII.C would also distinguish between generic (Section 16.1 of DCD) and plant-specific TS to account for the different treatment and finality accorded TS before and after a license is issued.

The process in proposed paragraph C.1 for making generic changes to the generic TS in Section 16.1 of the DCD or other operational requirements in the generic DCD would be accomplished by rulemaking and governed by the backfit standards in 10 CFR 50.109. The determination of whether the generic TS and other operational requirements were completely reviewed and approved in the design certification rulemaking would be 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 TS or operational requirement was comprehensively reviewed and finalized in the design certification rulemaking, then there would be no backfit restriction under 10 CFR 50.109 because no prior position was taken on this safety matter. Generic changes made under proposed paragraph VIII.C.1 would be applicable to all applicants or licensees (refer to paragraph VIII.C.2), unless the change is irrelevant because of a plant-specific departure.

Some generic TS contain values in brackets [ ]. The brackets are placeholders indicating that the NRC's review is not complete, and represent a requirement that the applicant for a combined license referencing the AP1000 DCR must replace the values in brackets with final plant-specific values. The values in brackets are neither part of the design certification rule

nor are they binding. Therefore, the replacement of bracketed values with final plant-specific values does not require an exemption from the generic TS.

Plant-specific departures may occur by either a Commission order under proposed paragraph VIII.C.3 or an applicant's exemption request under paragraph VIII.C.4. The basis for determining if the TS or operational requirement was completely reviewed and approved for these processes would be the same as for proposed paragraph VIII.C.1 above. If the TS or operational requirement is 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 would be no restriction on plant-specific changes to the TS or operational requirements, prior to the issuance of a license, provided a design change is not required. Although the generic TS 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 TS. The process for petitioning to intervene on a TS or operational requirement would be similar to other issues in a licensing hearing, except that the petitioner must also demonstrate why special circumstances are present (paragraph VIII.C.5).

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

## I. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

The purpose of Section IX of this appendix would be to set forth how the ITAAC in Tier 1 of this design certification rule would be treated in a license proceeding. Paragraph A would restate the responsibilities of an applicant or licensee for performing and successfully completing ITAAC, and notifying the NRC of such completion. Paragraph A.1 would clarify 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. Paragraph A.2 would require 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.

Paragraphs B.1 and B.2 would reiterate the NRC's responsibilities with respect to ITAAC as set forth in 10 CFR 52.99 and 52.103(g)<sup>1</sup>. Finally, paragraph B.3 would state 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 has been granted a renewal of its license. However, subsequent modifications to the terms of the COL would have to 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 met. As discussed in paragraph III.D of this SOC, the Commission would defer a determination of the applicability of ITAAC and its 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.

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<sup>1</sup> For discussion of the verification of ITAAC, see SECY-00-0092, "Combined License Review Process," dated April 20, 2000.

## J. Records and Reporting

The purpose of Section X of this appendix would be to set forth the requirements that would apply to maintaining records of changes to and departures from the generic DCD, which would be reflected in the plant-specific DCD. Section X also would set forth the requirements for submitting reports (including updates to the plant-specific DCD) to the NRC. This section of the appendix would be similar to the requirements for records and reports in 10 CFR Part 50, except for minor differences in information collection and reporting requirements.

Paragraph X.A.1 of this appendix would require 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 they are not publicly available. However, the proprietary and safeguards information was reviewed by the NRC and, as stated in proposed paragraph VI.B.2 of this appendix, the Commission would consider 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, would be 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 proposed paragraph X.A.1 of this appendix. The acceptable version of the proprietary and safeguards information would be identified (referenced) in the version of the DCD that would be incorporated into this rule. The generic DCD and the acceptable version of the proprietary and safeguards information would be maintained for the period of time that this appendix may be referenced.

Paragraphs A.2 and A.3 would place recordkeeping requirements on the applicant or licensee that references this design certification so that its plant-specific DCD accurately

reflects both generic changes to the generic DCD and plant-specific departures made under proposed Section VIII of this appendix. The term "plant-specific" would be added to paragraph A.2 and other sections of this appendix to distinguish between the generic DCD that would be incorporated by reference into this appendix, and the plant-specific DCD that the applicant would be required to submit under proposed paragraph IV.A of this appendix. The requirement to maintain the generic changes to the generic DCD would be explicitly stated to ensure that these changes are not only reflected in the generic DCD, which would be maintained by the applicant for design certification, but that the changes would also be reflected in the plant-specific DCD. Therefore, records of generic changes to the DCD would be required to be maintained by both entities to ensure that both entities have up-to-date DCDs.

Paragraph X.A of this appendix would not place recordkeeping requirements on site-specific information that is outside the scope of this rule. As discussed in paragraph III.D of this SOC, the FSAR required by 10 CFR 52.79 would 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 paragraph X.B.3.c of this appendix would refer to the information that is contained in the FSAR for a facility (required by 10 CFR 52.79) but is not part of the plant-specific DCD (required by proposed paragraph IV.A of this appendix). Therefore, this rule would not require that duplicate documentation be maintained by an applicant or licensee that references this rule, because the plant-specific DCD would be part of the FSAR for the facility.

Paragraph X.B.1 would require applicants or licensees that reference this rule to submit reports, which describe departures from the DCD and include a summary of the written evaluations. The requirement for the written evaluations would be set forth in paragraph X.A.1. The frequency of the report submittals would be set forth in paragraph X.B.3. The requirement

for submitting a summary of the evaluations would be similar to the requirement in 10 CFR 50.59(d)(2).

Paragraph X.B.2 would require applicants or licensees that reference this rule to submit updates to the DCD, which include both generic changes and plant-specific departures. The frequency for submitting updates would be set forth in paragraph X.B.3. The requirements in paragraph X.B.3 for submitting the reports and updates would vary according to certain time periods during a facility's lifetime. If a potential applicant for a combined license who references this rule decides to depart from the generic DCD prior to submission of the application, then paragraph B.3.a would require that the updated DCD be submitted as part of the initial application for a license. Under proposed paragraph B.3.b, the applicant may submit any subsequent updates to its plant-specific DCD 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.

Paragraph B.3.b would also require that the reports required by paragraph X.B.1 be submitted semi-annually. This increase in reporting frequency during the period of construction and application review is consistent with Commission guidance. Also, more frequent reporting of design changes during the period of detailed design and construction is necessary to closely monitor the status and progress of the facility. In order to make the finding under 10 CFR 52.103(g), the NRC must monitor the design changes made under proposed Section VIII of this appendix. Frequent reporting of design changes would be particularly important in times when the number of design changes could be significant, such as during the procurement of components and equipment, detailed design of the plant before and during construction, and during preoperational testing. After the facility begins operation, the frequency of reporting

would revert to the requirement in paragraph B.3.c, which is consistent with the requirements for plants licensed under 10 CFR 50.57.

#### IV. AVAILABILITY OF DOCUMENTS

The NRC is making the documents identified below available to interested persons through one or more of the following:

Public Document Room (PDR). The NRC's Public Document Room is located at 11555 Rockville Pike, Public File Area O-1 F21, Rockville, MD 20082. Copies of publicly available documents related to this rulemaking can be viewed electronically on public computers in the PDR. The PDR reproduction contractor will make copies of documents for a fee.

Rulemaking Website (Web). The NRC's interactive rulemaking Website is located at <http://ruleforum.llnl.gov>. Selected documents may be viewed and downloaded electronically via this Website.

Public Electronic Reading Room (ADAMS). The NRC's public Electronic Reading Room is located at <http://www.nrc.gov/reading-rm/adams.html>. Through this site, the public can gain access to ADAMS, which provides text and image files of NRC's public documents.

Document	PDR	Web	ADAMS
AP1000 Design Certification Proposed Rule SECY paper	x	x	ML043230006
AP1000 Environmental Assessment	x	x	ML043230023
AP1000 Design Control Document	x	.....	ML050750293
NUREG-1793, "AP1000 Final Safety Evaluation Report"	x	.....	ML043570339
SECY-99-268, "Final Rule- AP600 Design Certification"	x	.....	ML003708259

Regulatory History of Design Certification <sup>2</sup>	x	.....	ML003761550
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## V. PLAIN LANGUAGE

The Presidential memorandum entitled "Plain Language in Government Writing" (63 FR 31883; June 10, 1998), directed that the Government's writing be in plain language. The NRC requests comments on the proposed rule specifically with respect to the clarity and effectiveness of the language used. Comments should be submitted using one of the methods detailed under the ADDRESSES heading of the preamble to this proposed rule.

## VI. VOLUNTARY CONSENSUS STANDARDS

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 using such a standard is inconsistent with applicable law or is otherwise impractical. In this proposed rule, the NRC proposes to approve the AP1000 standard plant design for use in a combined license (COL) application under 10 CFR Part 52 or possibly for a construction permit (CP) application under 10 CFR Part 50. Design certifications are not generic rulemakings establishing a generally applicable standard with which all Parts 50 and 52 nuclear power plant licensees must comply. Design certifications are Commission approvals of specific nuclear power plant designs by rulemaking. Furthermore, design certification rulemakings are initiated by an applicant for rulemaking, rather than by the NRC. For these reasons, the NRC concludes that the act does not apply to this proposed rule.

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<sup>2</sup> The regulatory history of the NRC's design certification reviews is a package of 100 documents that is available in NRC's (PERR) and in the PDR. This history spans a 15-year period during which the NRC simultaneously developed the regulatory standards for reviewing these designs and the form and content of the rules that certified the designs.

## VII. 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 proposed design certification rule, if adopted, would not be 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 environmental assessment, is that this amendment to 10 CFR Part 52 would not authorize the siting, construction, or operation of a facility using the AP1000 design; it would only codify the AP1000 design in a rule. The NRC will evaluate the environmental impacts and issue an EIS as appropriate under NEPA as part of the application(s) for the construction and operation of a facility.

In addition, as part of the environmental assessment for the AP1000 design, the NRC reviewed Westinghouse's evaluation of various design alternatives to prevent and mitigate severe accidents in Appendix 1B of the AP1000 DCD Tier 2. Based upon review of Westinghouse's evaluation, the Commission finds that: (1) Westinghouse identified a reasonably complete set of potential design alternatives to prevent and mitigate severe accidents for the AP1000 design; (2) none of the potential design alternatives are justified on the basis of cost-benefit considerations; and (3) it is unlikely that other design changes would be identified and justified in the future on the basis of cost-benefit considerations, because the estimated core damage frequencies for the AP1000 are very low on an absolute scale. These issues are considered resolved for the AP1000 design.

The environmental assessment (EA), upon which the Commission's finding of no significant impact is based, and the AP1000 DCD are available for examination and copying at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The NRC has sent a copy of the EA and this proposed rule to every State Liaison

Officer and requests their comments on the EA. Single copies of the EA are also available from Lauren M. Quinones-Navarro, Mailstop O-4D9A, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

#### VIII. PAPERWORK REDUCTION ACT STATEMENT

This proposed rule contains amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq). This rule has been submitted to the Office of Management and Budget for review and approval of the information collection requirements.

**Type of submission, new or revision:** Revision

**The title of the information collection:** Appendix D to 10 CFR Part 52, AP1000 Design Certification, Proposed Rule

**Current OMB Approval Number:** 3150-0151

**The form number if applicable:** Not applicable

**How often the collection is required:** Semi-annually

**Who will be required or asked to report:** Applicant for a combined license.

**An estimate of the number of annual responses:** 2 (1 response + 1 recordkeeper)

**The estimated number of annual respondents:** 1

An estimate of the total number of hours needed annually to complete the requirement or request: 39 hours additional burden hours (5 hours reporting plus 34 hours recordkeeping).

**Abstract:** The NRC is proposing to amend its regulations to certify the AP1000 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 AP1000 design may do so by

referencing the AP1000 design certification rule (DCR). This proposed DCR, as set out in Appendix D, is nearly identical to the AP600 DCR in Appendix C of 10 CFR Part 52. The information collection requirements of Part 52 were based largely on the requirements for licensing nuclear facilities under 10 CFR Part 50. The applicant for certification of the AP1000 design is Westinghouse Electric Company LLC.

The U.S. Nuclear Regulatory Commission is seeking public comment on the potential impact of the information collection contained in this proposed rule and on the following issues:

1. Is the proposed information collection necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?
2. Is the estimate of burden accurate?
3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?
4. How can the burden of the information collection be minimized, including the use of automated collection techniques?

A copy of the OMB clearance package may be viewed free of charge at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Room O-1 F21, Rockville, MD 20852. The OMB clearance package and rule are available at the NRC worldwide Web site: <http://www.nrc.gov/public-involve/doc-comment/omb/index.html> for 60 days after the signature date of this notice and are also available at the rule forum site, <http://ruleforum.llnl.gov>.

Send comments on any aspect of these proposed information collections, including suggestions for reducing the burden and on the above issues, by **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]** to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-

0001, or by Internet electronic mail to [INFOCOLLECTS@NRC.GOV](mailto:INFOCOLLECTS@NRC.GOV) and to the Desk Officer, John A. Asalone, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0151), Office of Management and Budget, Washington, DC 20503. Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given to comments received after this date. You may also e-mail comments to [John A. Asalone@omb.eop.gov](mailto:John_A._Asalone@omb.eop.gov) or comment by telephone at (202) 395-4650.

### **Public Protection Notification**

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

### **IX. REGULATORY ANALYSIS**

The NRC has not prepared a regulatory analysis for this proposed 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, which then may be voluntarily referenced by applicants for COLs. 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.

## X. REGULATORY FLEXIBILITY CERTIFICATION

Under the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this proposed rulemaking will not have a significant economic impact upon a substantial number of small entities. This proposed 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 in 13 CFR Part 121. Thus, this rule does not fall within the purview of the act.

## XI. BACKFIT ANALYSIS

The Commission has determined that this proposed rule does not constitute a backfitting as defined in the backfit rule, 10 CFR 50.109 because this design certification does not impose new or changed requirements on existing 10 CFR Part 50 licensees, nor does it impose new or change requirements on existing DCRs in Appendices A-C of Part 52. Therefore, a backfit analysis was not prepared for this rule.

## XII. LIST OF SUBJECTS IN 10 CFR PART 52

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. 553; the NRC is proposing to adopt the following amendment to 10 CFR Part 52.

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. 444, as amended (42 U.S.C. 2133, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, 202, 206, 88 Stat. 1242, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

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, C, and D to this point.

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

Appendix D To Part 52 - Design Certification Rule for the AP1000 Design

## I. INTRODUCTION

Appendix D constitutes the standard design certification for the AP1000<sup>3</sup> design, in accordance with 10 CFR Part 52, Subpart B. The applicant for certification of the AP1000 design is Westinghouse Electric Company LLC.

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<sup>3</sup>AP1000 is a trademark of 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 TS 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 (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 (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 Paragraph 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 TS 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. COL action items (COL information), which identify certain matters that shall be addressed in the site-specific portion of the 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 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 paragraph VIII.B.6 of this appendix. This designation expires for some Tier 2\* information under paragraph VIII.B.6.

G. Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses means:

1. Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or
2. Changing from a method described in the plant-specific DCD to another method unless that method has been approved by the NRC for the intended application.

H. 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 TS in the AP1000 DCD (Revision 14) are approved for incorporation by reference by the Director of the Office of the *Federal Register* on **[Insert date of approval]** under 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the generic DCD may be obtained from Ronald P. Vijuk, Manager, Passive Plant Engineering, Westinghouse Electric Company, P.O. Box 355, Pittsburgh, PA 15230-0355. A copy of the generic DCD is also available for examination and copying at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. Copies are available for examination at the NRC Library, 11545 Rockville, Maryland, telephone (301) 415-5610, e-mail [LIBRARY@NRC.GOV](mailto:LIBRARY@NRC.GOV) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030 or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

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 of the DCD), and the generic TS 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 AP1000 design or NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 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 AP1000 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 paragraph X.B of this appendix;
  - c. Plant-specific TS, consisting of the generic and site-specific TS 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 AP1000 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 AP1000 design are in 10 CFR Parts 20, 50, 73, and 100, codified as of **[insert date final rule signed]**, that are applicable and technically relevant, as described in the FSER (NUREG-1793).

B. The AP1000 design is exempt from portions of the following regulations:

1. 10 CFR 50.34(f)(2)(iv) - Plant Safety Parameter Display Console;
2. 10 CFR 50.62(c)(1) - Auxiliary (or emergency) feedwater system; and
3. 10 CFR Part 50, Appendix A, GDC 17 - Offsite Power Sources.

## VI. ISSUE RESOLUTION

A. The Commission has determined that the structures, systems, components, and design features of the AP1000 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 AP1000 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 COL, amendment of a COL, or renewal of a COL, proceedings held under to 10 CFR 52.103, and enforcement proceedings involving plants referencing this appendix:

1. All nuclear safety issues, except for the generic TS 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 of the DCD), and the rulemaking record for certification of the AP1000 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 AP1000 design;

3. All generic changes to the DCD under 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 under and in compliance with the change processes in Sections VIII.A.4 and VIII.B.4 of this appendix, but only for that plant;

5. All departures from the DCD that are approved by license amendment, but only for that plant;

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

7. All environmental issues concerning severe accident mitigation design alternatives (SAMDA) associated with the information in the NRC's EA for the AP1000 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 under 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 AP1000 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 ensure 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 TS, or requires a license amendment under paragraphs B.5.b or 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, requires a license amendment if it would:

(1) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

(2) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;

(3) Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

(4) Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;

(5) Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

(6) Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;

(7) Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

(8) Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

c. A proposed departure from Tier 2 affecting resolution of a severe accident issue identified in the plant-specific DCD, requires a license amendment 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 requires a license amendment under paragraph B.5.b or B.5.c 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 paragraph 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 2.309, the petition must demonstrate that the departure does not comply with paragraph 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 material fact regarding compliance with paragraph 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.
- (6) Small-break loss-of-coolant (LOCA) Analysis Methodology.

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 under 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 subject to the departure provisions in paragraph B.5 of this section.

- (1) Nuclear Island structural dimensions.
- (2) American Society of Mechanical Engineers Boiler & Pressure Vessel Code (ASME

Code), Section III, and Code Case –284.

(3) Design Summary of Critical Sections.

(4) American Concrete Institute (ACI) 318, ACI 349, American National Standards Institute/American Institute of Steel Construction (ANSI/AISC)–690, and American Iron and Steel Institute (AISI), “Specification for the Design of Cold Formed Steel Structural Members, Part 1 and 2,” 1996 Edition and 2000 Supplement.

(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 and control system design processes, methods, and standards.

(10) Passive residual heat removal (PRHR) natural circulation test (first plant only).

(11) Automatic depressurization system (ADS) and core make-up tank (CMT)

verification tests (first three plants only).

(12) Polar Crane Parked Orientation.

(13) Piping design acceptance criteria.

(14) Containment Vessel Design Parameters.

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 TS 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 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 TS 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 TS 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 2.335 are present. The Commission may modify or supplement generic TS and other operational requirements that were not completely reviewed and approved or require additional TS 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 TS 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 TS derived from the generic TS must be changed may petition to admit such a contention into the proceeding. The petition must comply with the general requirements of 10 CFR 2.309 and must demonstrate why special circumstances as defined in 10 CFR 2.335 are present, or demonstrate 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 to the petition. 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 TS or other operational requirements are subject to a hearing as part of the license proceeding.

6. After issuance of a license, the generic TS have no further effect on the plant-specific TS. Changes to the plant-specific TS 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. A licensee may also 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. If 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 under 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 find that 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. Under 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 a 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 under 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 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 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 DCD, which reflect the generic changes to and plant-specific departures from the generic DCD made under Section VIII of this appendix. These updates shall be filed under 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 X.B.1 and X.B.2 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 generic DCD.

b. During the interval from the date of application for a license to the date the Commission makes its findings under 10 CFR 52.103(g), the report must be submitted semi-annually. Updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

c. After the Commission has made its finding under 10 CFR 52.103(g), the reports and updates to the plant-specific DCD must be submitted, along with updates to the site-specific portion of the final safety analysis report for the facility, at the intervals required by 10 CFR 50.59(d)(2) and 50.71(e)(4), respectively, or at shorter intervals as specified in the license.

Dated at Rockville, Maryland, this      day of      2005.

For the Nuclear Regulatory Commission.

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Annette L. Vietti-Cook  
Secretary of the Commission