



NUCLEAR MANAGEMENT AND RESOURCES COUNCIL

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February 4, 1994

Mr. Dennis Crutchfield
Associate Director for Advanced Reactors
and License Renewal
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

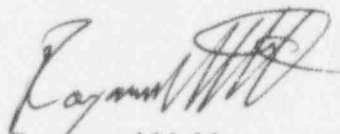
Dear Mr. Crutchfield:

Preliminary NRC staff guidance dated August 26, 1993, on Design Control Document (DCD) form and content indicated that DCDs should contain an "introduction" section which describes the purpose, content, and uses of the DCD. The enclosure provides for NRC staff consideration a proposed DCD introduction section that the industry believes would be suitable for use by a design certification applicant.

While most of the provisions of the proposed DCD introduction section reflect general understandings previously reached with the NRC staff, the enclosure also reflects the industry perspective on certain as yet unresolved matters that are addressed in the industry response to the ANPR on standard design certifications. These matters include the periodicity of reporting to the NRC of Tier 2 changes implemented during construction under the "Section 50.59-like" process and the process for changing specially designated Tier 2 information.

Please contact me or Russ Bell of the NUMARC staff should you have any questions or comments regarding the proposed DCD introduction section.

Sincerely,



Raymond N. Ng

RNN/RJB/
Enclosure

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INTRODUCTION FOR DESIGN CONTROL DOCUMENT

1.0 Purpose of the DCD

The Design Control Document (DCD) contains information from various documents comprising the design certification application for the Advanced Light Water Reactor (ALWR) standard design. The purpose of the DCD is to provide, in a single document, design-related information to be incorporated by reference in the design certification rule for the ALWR standard design.

2.0 Contents of the DCD

This document contains the DCD Introduction, the Certified Design Material (i.e., Tier 1), and approved safety analysis material (i.e., Tier 2). Each is summarized below.

The Introduction describes the purpose, contents and uses of the DCD.

The Certified Design Material (Tier 1) for the ALWR includes the following information: (1) Definitions and General Provisions; (2) Design Descriptions; (3) Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC); (4) Interface Requirements for interfaces between systems within the scope of the ALWR standard design and other systems that are wholly or partially outside the scope of the ALWR standard design; and (5) Site Parameters for the ALWR standard design.

Tier 2 includes, to the extent applicable for the ALWR standard design, the following information: (1) the information required for a final safety analysis report under 10 CFR 50.34(b); (2) information related to the Three Mile Island requirements under 10 CFR 50.34(f); (3) technical resolutions of the Unresolved Safety Issues and medium and high priority Generic Safety Issues identified in NUREG-0933; and (4) important features identified from the probabilistic risk assessment for the ALWR and a description of design features for preventing and mitigating severe accidents.

The Design Descriptions, Interface Requirements, and Site Parameters in Tier 1 are derived entirely from the provisions of Tier 2, and generally consist of those design features and functions that are most significant to safety. Although provisions in Tier 1 are derived from Tier 2, these provisions may be more general than the provisions in Tier 2. Therefore, compliance with the more detailed Tier 2 material provides a sufficient method, but not the only acceptable method, for complying with the more general design provisions in Tier 1.

3.0 Uses of the DCD

3.1 In General

The design certification rule for the ALWR can be referenced in a construction permit (CP) or operating license (OL) under 10 CFR Part 50, in a combined license (COL) under 10 CFR Part 52, or

in an application for either a CP, OL, or COL. Because the DCD is incorporated by reference in the design certification rule for the ALWR, the provisions of the DCD are effective with respect to an application, permit, or license that references the rule, with certain exceptions as provided in the rule and described in Section 3.3 below.

The DCD applies only to structures, systems, and components within the scope of the ALWR standard design, and to the requirements governing the interfaces between the ALWR standard design and the plant-specific design. An application for a CP, OL, or COL that references the design certification rule for the ALWR must provide a plant-specific safety analysis report (SAR) which shall incorporate by reference the DCD and include information about the part of the plant that is outside the scope of the ALWR standard design. Together, the DCD and the plant-specific application will provide the design provisions applicable to a CP, OL, or COL that references the design certification rule for the ALWR.

3.2 Uses of the Certified Design Material

The following provisions describe the scope and uses of Tier 1 material:

- Design Descriptions - The Design Descriptions pertain to the design of structures, systems, and components

and do not contain requirements related to the operability of structures, systems, and components. Instead, the same process applicable to operability of Part 50 plants (e.g., technical specifications) will be used to develop operability requirements for structures, systems, and components. In the event of a discrepancy between the Design Descriptions and the Tier 2 material, the Design Descriptions shall govern.

- ITAAC - A holder of a COL shall perform and demonstrate conformance with the ITAAC prior to fuel load. An applicant for a COL may proceed at its own risk with design and procurement activities, and a holder of a COL may proceed with design, procurement, construction and preoperational activities, even though the NRC staff may not yet have agreed that all ITAAC have been satisfied. In the event of a noncompliance with an ITAAC, the applicant or licensee of a COL may take corrective actions to successfully complete the ITAAC.

- Interface Requirements - The Interface Requirements identify the criteria for interfaces between systems within the scope of the ALWR standard design and other systems that are wholly or partially outside the scope of the ALWR standard design. The plant-specific SAR

shall contain provisions which implement the Interface Requirements. Additionally, the plant-specific application shall contain ITAAC corresponding to these implementing provisions. In the event of an inconsistency between the Interface Requirements and the Tier 2 material, the Interface Requirements shall govern.

- Site Parameters - The Site Parameters identify the set of site-related information used for the ALWR standard design. The plant-specific SAR shall demonstrate that the site-specific design basis conditions are bounded by the Site Parameters. Detailed design activities for structures, systems, and components within the scope of the ALWR standard design shall be performed using the Site Parameters. Design activities for structures, systems, and components outside the scope of the ALWR standard design may be performed using site-specific design basis conditions. In the event of an inconsistency between the Site Parameters and the Tier 2 material, the Site Parameters shall govern.

3.3 Effectiveness of the DCD

The provisions in the DCD are effective with respect to plants having applications, permits, or licenses that reference the DCD, except as described in the following sections.

3.3.1 Effectiveness of ITAAC

The ITAAC are effective with respect to applications and licenses that reference the design certification rule for the ALWR, except as follows:

- The ITAAC are not effective with respect to a CP or OL that references the design certification rule, nor to an application for a CP or OL.
- The ITAAC are not effective with respect to a COL after the NRC has authorized fuel load for the plant in question. After fuel load authorization, the ITAAC cease to have any regulatory significance.

3.3.2 Plant-Specific Changes

An applicant or licensee that desires to make plant-specific changes with respect to the provisions in the DCD shall follow the change process specified below:

- Plant-Specific Changes to Tier 1 - An applicant or licensee which references the DCD may request an

exemption from one or more elements of Tier 1. The request shall comply with 10 CFR 50.12, and shall demonstrate that the special circumstances which Section 50.12(a) requires to be present outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

- Plant-Specific Changes to Tier 2, In General - An applicant or licensee which references the DCD may make changes to the design or procedures described in Tier 2, without prior NRC approval, unless the proposed change involves a change to Tier 1, a change to the technical specifications incorporated in the license for the plant, or an unreviewed safety question under 10 CFR 50.59. Changes made without prior NRC approval shall be documented, and records of such changes shall be maintained and available for audit until the date of termination of the license. Prior to fuel load, reports of such changes shall be submitted to the NRC bi-annually; after fuel load, such reports shall be submitted as provided in 10 CFR 50.71(b)(2).

- Plant-Specific Changes to Certain Designated Material in Tier 2 - Tier 2 of the DCD designates certain material as requiring NRC notification prior to

implementing plant-specific changes thereto pursuant to the provisions of the preceding paragraph. Such notification shall be made at least 60 days prior to implementation of a change to the designated material. The applicant or licensee may implement the change without prior NRC approval unless the NRC determines that the change involves an unreviewed safety question.

A proposed change in the design or procedures described in Tier 2 involves an unreviewed safety question if (i) the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety evaluated in the DCD may be increased; or 2) a possibility for an accident or malfunction of a different type than any evaluated in the DCD may be created; or (iii) the margin of safety as defined in the basis for any technical specification is reduced. In determining whether a proposed change involves an unreviewed safety question, a licensee may utilize either qualitative or quantitative (including probabilistic) assessments.