



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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FROM: William T. Russell, Associate Director
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SUBJECT: REVIEWER GUIDANCE FOR DESIGN CERTIFICATION REVIEWS -
CERTIFIED DESIGN DESCRIPTIONS; INSPECTIONS, TESTS, ANALYSES
AND ACCEPTANCE CRITERIA (ITAAC); APPLICANT SSAR LEVEL OF
DETAIL; AND STAFF SER DOCUMENTATION

The guidance in this memorandum is to be implemented for all 10 CFR 52 reviews. The information and review guidance herein has been discussed with NUMARC, GE and other applicants for design certification and is consistent with the staff's proposals to the Commission in SECY 92-287, "FORM AND CONTENT FOR A DESIGN CERTIFICATION RULE." This guidance is subject to change as a result of the Commission's review. If necessary, this guidance will be revised and reissued following the Commission's decision on SECY 92-287.

1. CERTIFIED DESIGN DESCRIPTION

The Certified Design Description (CDD) (sometimes called Tier 1 Design Description) consists of narrative and simplified schematic drawings which will be incorporated into the Design Certification Rule for a particular standard design. The CDD will be incorporated into the NRC's Part 52 Regulations and will be effective for the life of the Certified Design approval and will be effective for the life of a facility which is licensed pursuant to a Certified Design. Changes to the CDD following the design certification rulemaking require a finding by the NRC that the change is needed to assure adequate protection. The change requires either an order or another rulemaking to effect the change. The net effect is to provide a very high threshold for change by either the NRC or others once the rule is issued.

The staff should ensure that significant features of the certified design application contained in the SSAR upon which the staff is relying to reach

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its safety conclusion are captured in the CDD. The specific features or commitments which are to be included in the CDD are a matter of staff judgment. Two important factors should be balanced in reaching a decision to incorporate information into the CDD: (1) the safety significance of the design feature or commitment to the staff's safety decision, and (2) an evaluation of whether it is likely or not that the design feature or commitment will need to be changed in the future. If the staff concludes that it is likely that the details of a particular design feature or commitment will change then it is appropriate to limit the amount of detail in the CDD. For example, if current technology is changing and the staff concludes it is inappropriate to specify a particular technology by rulemaking; then the level of detail in the CDD should be limited to functional requirements and/or broad commitments. Additional detail as to how the functional requirements and/or broad commitments will be met must be specified in sufficient detail in the SSAR for the staff to reach its safety decision. The detail in the SSAR would thus be similar to an NRC Regulatory Guide in that the SSAR would describe an acceptable, but not the only acceptable method, of meeting the CDD functional requirements and/or broad commitments. The use of Design Acceptance Criteria is another example where the preferred approach is to have functional requirements and/or broad commitments in the CDD and detailed information in the SSAR to specify an acceptable method for meeting the CDD.

The staff must also be cognizant of the fact that a licensee under Part 52 may make changes to SSAR material under a 10 CFR 50.59-like process provided the change does not impact the CDD or ITAAC or create an unreviewed safety question. Thus a licensee may make changes to material in the SSAR upon which the staff relied in approving an acceptable method for meeting the CDD. The staff proposed in SECY 92-287 that certain SSAR material not be allowed to be changed without prior NRC approval of the change. This SSAR material would be identified in the staff's SER and would require either an amendment to the Combined Operating License (COL) or would require the change to be identified in the COL application and reviewed and approved by NRC as a part of the COL proceeding. The following statement should be used in the staff's SER to identify material in the SSAR which the staff concludes may not be changed without prior NRC approval:

"any change to [this commitment] would involve an unreviewed safety question and, therefore, requires NRC review and approval prior to implementation. Any requested change to [this commitment] shall either be specifically described in the COL application or submitted for license amendment after COL issuance."

The commitment identified in the above statement needs to be specific to the information in the SSAR upon which the staff has relied in the SER. For example, the specific SSAR sections or text for which this conclusion applies must be identified.

Defining in advance that material in the SSAR which if changed would constitute an unreviewed safety question should be used rarely. In discussions with the Commission, NUMARC and GE on the ABWR review, the staff has indicated that it believes that SSAR material which would likely receive this special treatment would be limited to: Design Acceptance Criteria and fuel and control rod design details which are in Topical Reports referenced in the SSAR. All cases where the staff includes the above quoted statement in its SER are to be reviewed and approved by the cognizant ADT Division Director. The staff's basis for each case must be specified in the SER and must provide the rationale for its decision that a change would constitute an unreviewed safety question.

The staff has proposed in SECY 92-287 that all changes to SSAR material by a COL licensee be reported to the NRC and that the licensee's evaluation include the basis for its determination that the change does not involve an unreviewed safety question. NRC can take enforcement action if it determines that a licensee change involved an unreviewed safety question or was inconsistent with the CDD or ITAAC. Whether or not the NRC identifies [commitments] which if changed would in NRC's view constitute an unreviewed safety question, the COL applicant or licensee is responsible to identify and review all changes and determine that each change before implementation does not constitute an unreviewed safety question.

2. INSPECTIONS, TESTS, ANALYSES AND ACCEPTANCE CRITERIA (ITAAC)

The staff and industry have reached agreement on a three column format for ITAAC. The following guidance should be followed in reviewing proposed ITAAC:

Column 1 - Design Commitment

The specific text for the design commitment described in column 1 is to be extracted from the CDD discussed above. Any differences in text should be minimized and be intentional. Design commitments which are to be verified prior to fuel load are to be identified under Column 1. Design commitments which cannot be verified until after fuel load are to be included in the Initial Test Program (ITP) description (SSAR Chapter 14). The ITAAC and the ITP description in the CDD must include sufficient testing commitments to verify that the facility will operate in accordance with the certified design.

Column 2 - Inspections, Tests and Analyses

The specific method to be used by the COL licensee to demonstrate that the design commitment in Column 1 has been met is to be described in Column 2. The method is either an inspection, test, or analysis or some combination of inspection, test and analysis. If the method of demonstration includes an analysis, the details of the analysis method must be described in either Column 2 or in the SSAR. The preferred location for analysis methods is in the SSAR. The SSAR should include a reference to the particular ITAAC analysis which is being described in detail.

Column 3 - Acceptance Criteria

The specific acceptance criteria for the methods described in column 2 which if met demonstrate that the design commitment in column 1 has been met is to be described in Column 3. When a choice between putting detail in Column 1 and Column 3 exists, the preference should be to put the detail in Column 3. This ensures that the acceptance criteria is detailed and thereby removes ambiguity regarding acceptable implementation of the commitment.

In the case of DAC for the Control Room Design and for Digital Instrumentation and Control Design, the ITAAC for each phase of the design development process should be separately identified with entries in Columns 1, 2, and 3. Failure to satisfy the Column 3 acceptance criteria for a particular phase will require repeating that phase of the design development process until the Column 3 criteria is met for that ITAAC and all subsequent phased ITAAC.

3. STANDARD SAFETY ANALYSIS REPORT

10 CFR 52 does not discuss Tier 1 or Tier 2 material. These terms have been developed during implementation of the rule for the lead reviews. Tier 1 material is the CDD and ITAAC discussed above plus site parameters and interface requirements as defined in 10 CFR 52.47 (a)(1)(ii) and (vii). Tier 2 is that material in the SSAR which is not in Tier 1. The SSAR is to include all Tier 1 and Tier 2 material; i.e., it must include all information reviewed by the staff which is relied upon in reaching the staff's safety determination. To the extent that design detail or other information reviewed in the course of inspections or audits is necessary for the staff to reach a safety conclusion, that design detail or other information must be submitted as an amendment to the SSAR. It is not sufficient for such information to be on the docket, it must be in the SSAR.

SECY 92-287 discusses the concept of a Design Control Document. This document is identical to the SSAR with proprietary information deleted and a non-proprietary version of the information substituted. There is some discussion with NUMARC regarding whether or not "roadmaps" are a part of the Design Control Document, the SSAR, or are simply submitted on the docket as a review aid. "Roadmaps" are provided to correlate important safety analysis assumptions and findings to a particular ITAAC which will confirm that the needed design feature is implemented. For example, a "roadmap" has been requested to correlate important SSAR Chapter 15 design basis analysis assumptions with system and structure ITAAC. This is necessary because there is no ITAAC for SSAR Chapter 15. Other "roadmaps" include severe accidents, shutdown risk, and other reviews which involve multiple systems or structures. Such "roadmaps" will form part of the staff's evaluation and are necessary for the staff to conclude that the set of ITAAC proposed by the applicant is complete and meets the necessary and sufficient standard for ITAAC in 10 CFR 52. Therefore, such "roadmaps" must be part of the SSAR. The question of whether or not "roadmaps" are part of the Design Control document is still under discussion. Resolution of this issue does not impact the staff's technical review of the SSAR or our necessary and sufficient finding.

4. STAFF'S SAFETY EVALUATION REPORT - OPEN ISSUES

In the course of the ABWR review, draft information and other materials have been submitted by GE on the docket which are not in the SSAR. In several cases the staff has changed open issues to confirmatory issues in our SERs based upon such information. This is acceptable if the staff has reviewed written documentation (i.e., on the docket) which resolves the staff's safety concern. If in the course of a review meeting, a markup of the appropriate SSAR section resolves the open issue, the open issue can be changed to confirmatory. The SSAR markup must be docketed with the meeting summary. When the SSAR amendment is submitted, reviewed and found consistent with the markup, the confirmatory issue can be closed. Appropriate documentation for Projects to close an open issue or change it to confirmatory consists of either: (1) a memorandum from the Branch Chief through the Division Director to Projects, or (2) transmittal by the Branch Chief of the SER input which closes the open issue or changes it to confirmatory. In the event new open items are identified (i.e., not in the ABWR draft FSER or not in the ABB-CE 80 PLUS DSER), these issues are to be reviewed by the cognizant Division Director and forwarded to Projects for tracking.

The staff has also taken positions in the draft FSER for which GE has not submitted an SSAR change to incorporate the staff's position. It is important to continue to track staff position issues as confirmatory and to close them with an appropriate SSAR amendment. This will ensure that the Design Control Document is complete and that all staff positions are changed to evaluation findings. This is necessary because the FSER does not impose any requirements on the COL applicant. The FSER is simply stated, documentation of the technical basis for the staff's safety findings. As discussed above, the SER does inform COL applicants and COL licensees of information in the SSAR a change to which the staff has concluded would constitute an unreviewed safety question and therefore may not be changed without prior staff approval.

5. Each Division Director is to ensure that review staff within his division are knowledgeable of and follow the guidance in this memorandum. Questions regarding implementation should be promptly brought to my attention.

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(Original signed by)

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