

NOTATION VOTE

RESPONSE SHEET

RELEASED TO THE PDR
2/20/91
date initials

TO: SAMUEL J. CHILK, SECRETARY OF THE COMMISSION

FROM: COMMISSIONER ROGERS

SUBJECT: SECY-90-377 - REQUIREMENTS FOR DESIGN
CERTIFICATION UNDER 10 CFR PART 52

APPROVED ^{IN PART} KCH DISAPPROVED ^{IN PART} KCH ABSTAIN _____

NOT PARTICIPATING _____ REQUEST DISCUSSION _____

COMMENTS: SEE ATTACHMENT. KCH

Kenneth C. Rogers
SIGNATURE

RELEASE VOTE

January 24, 1991
DATE

WITHHOLD VOTE

ENTERED ON "AS" YES _____ No _____

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January 24, 1991
Comments on SECY 90-377
Kenneth C. Rogers

The application for design certification must consist of an essentially complete design in accordance with 10 CFR 52.47.

LEVEL OF DETAIL

Graded Approach

I believe that the application should feature a graded approach to design completeness varying in accordance with the safety significance of the system and based upon information needed to make a safety determination.

Sufficiency of Design

I believe that the design detail must be sufficient to allow staff to **evaluate**: the resolution of severe accident issues in the design; the incorporation of operational experience from currently licensed plants which the agency seeks to avoid in future designs; the incorporation of provisions for testing, surveillance, and maintenance-related activities in the design; and the incorporation of human factors to ensure that instrumentation and control information available to plant operators through advanced control room displays will enhance operator assimilation and cognitive processes. This information can all be requested under 52.47(a)(3).

Level of Detail

I disapprove the use of the four levels of design detail established in SECY-90-241 and 90-377 in the evaluation of design certification reviews. By employing a graded approach to design based on any and all information needed to make a safety determination the usefulness of these definitions disappears, and they should not be memorialized by the Commission.

I disapprove requiring the level of detail for design certification to include information for the purpose of effecting standardization, unless there is a clearly defined nexus to the determination of specific safety issues. The application should encompass a depth of detail not less than that contained in an FSAR at the Operating License stage for a recently licensed plant (1985-1990) except for site-specific, as-procured, and as-built information. The level of detail should also ensure that risk insights from the design-specific probabilistic risk assessment (PRA) are considered in the design.

For those portions which are not certified, the level of detail must be sufficient to allow completion of the final

safety analysis and the PRA referred to above. In addition, the resolution of all severe accident issues, the resolution of all medium and high priority generic safety issues (GSIs), and the preparation of ITAAC will impose more detailed and stringent requirements than in the past.

In summary, the level of detail must be sufficient to enable the Commission to evaluate the applicant's proposed means of assuring that construction conforms to the design and to make a final safety determination on all safety matters.

INSPECTION, TESTS, AND ACCEPTANCE CRITERIA (ITAAC)

Purpose

I believe that ITAAC are intended to provide reasonable assurance that a plant referencing the design can be constructed and operated in accordance with the design certification but not for purposes of reaching a final safety conclusion on any safety question. ITAAC are confirmatory in nature; they demonstrate compliance with a certified design upon which the agency has already reached final conclusions with respect to all safety issues.

Sufficiency

I believe that ITAAC must be sufficient to confirm that a plant can be built and can be operated in conformance with the design certification; ITAAC should not be more prescriptive than the information captured in the design certification rule. ITAAC are not to be used to "close" any open safety issues.

ISSUE FINALITY

Two-Tier Approach

I approve the "two-tier" approach to achieving necessary flexibility in the general content of the application and implementation of the design certification rule. It is recognized in Part 52 that some matters would be "resolved in connection with" certification but not necessarily in the certification itself, and that in the certification of a specific plant design, the Commission would "treat as resolved" all matters resolved in connection with the certification, whether the resolution was reflected in the certification (i.e., Tier 1) or not (i.e., Tier 2).

I disapprove memorializing a third category of information available for audit and its incorporation in a new Regulatory Guide. This category of information is of regulatory significance only to the extent that audits such as Integrated Design Inspections (IDIs) or Independent Design Verifications

(IDVS) demonstrate that Tier 1 and 2 information have been (or are being) properly translated into procurement specifications and/or construction and installation specifications by the applicant.

Any information that the staff needs for its safety determination must be made available by the applicant without question. Any technical information available for audit supporting Tiers 1 or 2 which is needed for the staff's safety determination will no longer reside in a third category but will become Part of Tiers 1 or 2.

Flexibility

I approve flexibility provisions or change processes for material in the application, certification, and supporting design documentation based on amendments, waivers, exemptions or "50.59-type" processes. The "50.59-like" process would permit a holder of a combined construction and operating license (COL) to make changes to Tier 2 material (that portion not certified) to realize enhancements through advances in technology and engineering, design changes or refinements that are inevitable and desirable to accommodate construction "fit-up" requirements, and to cater to changes in the supply of commercial equipment.

I also agree with the ACRS that this "50.59-like" process should be available to an applicant for a combined license referencing certifying rule, and to the vendor which applied for the certification. In these instances, however, I believe that any "50.59-like" provision incorporated in a rule certifying a design should require a reporting of changes made before operation at some interval shorter than a year.

NEW REGULATORY GUIDE AND UPDATED STANDARD REVIEW PLAN

Updated Standard Review Plan

I approve the staff's plans to update the existing Standard Review Plan (NUREG 0800) to incorporate current Branch Technical Positions (BTPs) on all regulatory issues and to update earlier BTPs which have become technically dated. The updated SRP and Regulatory Guide 1.70 should incorporate additional relevant design information which addresses both severe accident prevention and mitigation, as well as other safety-related considerations which have arisen since publication of NUREG 0800 and Regulatory Guide 1.70.

Preparation of Regulatory Guide

If the staff deems it necessary, I approve the development of a new Regulatory Guide concurrently with the on-going reviews of the evolutionary Advanced Boiling Water Reactor of General Electric and the evolutionary System 80+ Pressurized Water

Reactor of ABB-Combustion Engineering to codify the review process and identify the information requirements based on actual experience from these two reviews. Criteria for achieving design finality should be addressed in the new Regulatory Guide. Development of the Regulatory Guide should serve to establish a general consensus as to the required content of an application for design certification by the staff, industry, and the public. Documentation in a Regulatory Guide of the information needed for a safety determination based on the discussions surrounding the staff's lead design reviews (ABWR and System 80+) is consistent with the language of Part 52.47(a)(2). A separate Regulatory Guide or Guides may have to be developed later in the design review process for the Passive Advanced Boiling Water Reactors and Passive Advanced Pressurized Water Reactor Reactors.

PROTOTYPE REQUIREMENTS OF NEW AND INNOVATIVE TECHNOLOGY

I approve in principle the requirement for prototype (development and) testing of new, innovative technology in nuclear power plant control room designs intended for design certification, if prototypical testing is required to confirm expected operational performance under normal and abnormal conditions and thus be essential for the staff's safety determination. The testing would also serve to confirm that unforeseen systems interactions do not exist or occur, and to verify the efficacy of human factors embodied in the design as these affect the assimilation of information by plant operators in advanced control rooms and the cognitive processes of the operators in making correct plant control decisions.

I also note the very important role of ITAAC in the design certification process and I encourage the staff to proceed as quickly as possible in it's examination of the content of ITAAC and it's interactions with industry as to the requirements of ITAAC and issues which may affect their formulation. I believe that the intellectual process of defining or selecting quantifiable attributes of the design to be certified which are calculable in the final design and/or measurable in the constructed plant could affect the content of the design certification application requirements. I therefore request that the staff submit a paper on this subject to me not later than September 30, 1991.

As separate issues from SECY-90-377 itself:

I am concerned that the design review process for certification may permit inconsistency in the level of design detail established from one application to another or possibly within the technical disciplines within a given application. I request the staff to consider how this possibility can be avoided to the extent possible in the design certification process and to inform me at a future date how it intends to ensure reasonable consistency in the level of design detail which is established and reviewed.

I also agree with NUMARC's proposal that any backfitting of Tier 2 design information in a design embodied in a certifying rule should be governed by 10 CFR 50.109 rather than the more restrictive provisions imposed on the staff by 10 CFR 52.63. The staff would be thus accorded, with respect to Tier 2, a flexibility which corresponds to the flexibility the vendor or COL applicant or holder would have under the 10 CFR 50.59-like process incorporated in the rule certifying the design.

K.C. Rogers 1/24/91

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