



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

ACRSR-1400

PDR

August 14, 1990

The Honorable Kenneth M. Carr
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: LEVEL OF DETAIL REQUIRED FOR DESIGN CERTIFICATION UNDER
PART 52

During the 364th meeting of the Advisory Committee on Reactor Safeguards, August 9-11, 1990, we reviewed the Commission Policy Issue Paper SECY-90-241 related to the level of detail required for design certification under 10 CFR Part 52. Our Subcommittee on Improved Light Water Reactors also reviewed this matter during a meeting on August 8, 1990. During these reviews, we had the benefit of discussions with representatives of the NRC staff and of NUMARC. We also had the benefit of the documents referenced.

Two important issues are addressed in SECY-90-241. The first deals with the level of detail to be included in an application for design certification under Part 52. The second deals with the level of detail to be included in the design certification rule itself. The first issue is of immediate importance and needs to be resolved before the NRC staff completes its review of the Standard Safety Analysis Report (SSAR) and other documents on which the application for design certification is to be based.

One might view the second issue as being less urgent, since it comes into play only after the application for design certification has been filed. At that point, one decides what portion of the information in the application is to be included in the design certification rule. However, we believe it is important for the staff to have an early awareness of the extent to which the information it is reviewing may become subject to revision during the design certification rulemaking. This would allow the staff to include appropriate wording in its Safety Evaluation Report (SER), identifying certain features for mandatory inclusion in the design certification rule. This would ensure that such features would not be changed in the future without the full protection of Part 52 design change requirements.

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In SECY-90-241, the staff listed four options for the level of design detail that might be included in the application for certification and in the design certification rule. Unfortunately, they mixed the possible content of the application with the possible content of the rule. Only the Level 2 and Level 3 options appear to be open for serious consideration.

In the background statement for SECY-90-241, the staff points out that Part 52 is clear regarding the need for submittal of an "essentially complete design" when applying for design certification. The level of detail in a design certification application must be sufficient for the Commission to reach closure on all safety questions and establish assurances that future construction will be in conformance with the design. We believe the regulations are clear and proper concerning this required level of detail. The staff has indicated that both the Level 2 and Level 3 options will meet the requirements of Part 52.

From the viewpoint of what should be included in the design certification application, the Level 2 option stipulates that the depth of design detail submitted should be similar to that of a final safety analysis report for a recently licensed plant (minus site-specific and as-built information). In addition, the application is to contain information concerning features that ensure enhanced safety benefits from standardization. For the Level 3 option, the depth of design information submitted in the design certification application is less than that for Level 2 but still claimed to be sufficient for the staff to make its findings on all safety questions. We are not convinced that it is. We recommend that you adopt the Level 2 option because it ensures compliance with Part 52 requirements and the achievement of any benefits from that level of standardization.

Although we recommend that the level of detail submitted be that corresponding to the staff's Level 2, we do not believe that all of this information should be included in the design certification rule. We believe that some form of the two-tier approach proposed by NUMARC is essential from a practical point of view even though it may lead to some decrease in the degree of standardization.

Determining what goes into each of the tiers will require some trade-off between standardization and practicality and can have some effect on safety. We believe that the staff and the industry should be encouraged to develop criteria to define the division between the two tiers. As progress is made in this effort, we will review the proposed criteria and report on them to you if you wish.

August 14, 1990

Additional comments by ACRS Member Lawrence E. Minnick are presented below.

Sincerely,



Carlyle Michelson
Chairman

Additional Comments by ACRS Member Lawrence E. Minnick

Neither the written material referenced above, nor our discussions with the staff has revealed any justification in terms of enhanced safety for standardization of plant designs beyond those portions directly and significantly related to safety.

Since it is clear that standardization, per se, is not an unmixed blessing, I strongly recommend that the ultimate degree of standardization should not be pursued for its own sake, but rather should be limited to that degree clearly essential to the assurance of plant safety.

Obviously competition among suppliers, and innovation and improvement in general, are considerably hampered by standardization. Those considerations have been so fundamental to this country's technical supremacy that they should require no elucidation here, but perhaps it does bear pointing out that standardization of nuclear units is inherently limited in any event, for example, by differing site characteristics and inevitable variations in operating experience.

I feel that the "two-tier" approach proposed by NUMARC will also alleviate the burden of standardization. I endorse that approach, which by reliance on the well-demonstrated 10 CFR 50.59 requirements will limit changes to those having no significant effect on safety.

References:

1. SECY-90-241, Memorandum dated July 11, 1990 for the Commissioners from James M. Taylor, Executive Director for Operations, Subject: Level of Detail Required for Design Certification Under Part 52.
2. U.S. Nuclear Regulatory Commission, Rules and Regulations - 10 CFR Part 52, "Early Site Permits; And Combined Licenses for Nuclear Power Reactors," April 28, 1985