POLICY ISSUE
(Notation Vote)

July 16, 1991

SECY-91-210

For: The Commissioners

From: James M. Taylor
Executive Director for Operations

Subject: INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA (ITAAC) REQUIREMENTS FOR DESIGN REVIEW AND ISSUANCE OF A FINAL DESIGN APPROVAL (FDA)

Purpose: To request Commission guidance on a policy matter related to an industry proposal that would allow the NRC staff to issue standardized plant final design approvals (FDAs) prior to final staff approval of the proposed ITAAC.

Summary: While the regulations require a design certification FDA applicant to submit proposed ITAAC, the contents of the FDA itself are not specified in 10 CFR Part 52. The staff has proposed three possible policy options including a proposed approach from NUMARC.

Background: The NRC staff is reviewing two applications for design certification in accordance with Part 52 of Title 10 of the Code of Federal Regulations (10 CFR Part 52). These designs are the General Electric Advanced Boiling Water Reactor (ABWR) and the Asea Brown Boveri/Combustion Engineering System 80+. Because the submittal and review of these applications spanned the development and

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promulgation of 10 CFR Part 52, several process and policy issues have arisen as these reviews have progressed. These issues have resulted in considerable dialogue between the NRC and the industry. One such issue is the relationship between NRC staff review and acceptance of proposed ITAAC requirements and the issuance of an FDA.

Discussion:

In a letter to the staff dated March 28, 1991, the Nuclear Management and Resource Council (NUMARC) proposed a process by which the NRC could issue an FDA and subsequently begin the formal design certification rulemaking process. NUMARC's proposal calls for separating the following three items from the current process for issuance of an FDA for a standard plant design: 1) the staff's review and approval of ITAAC; 2) the contents of the design certification rule; and 3) the publication of the notice of proposed rulemaking. NUMARC's reason for suggesting this approach is to show the industry and the public that progress is being made in the design certification program, and in particular, in completing the technical reviews supporting individual nuclear steam supply system (NSSS) vendor FDA issuances.

An FDA issued under 10 CFR Part 52, Appendix O, is a prerequisite for certification of a standard design under Section 52.43(c). An FDA applicant that intends to seek design certification must comply with the applicable requirements of subpart B of Part 52, according to Section 52.43(c). By virtue of Section 52.47(vi), an FDA applicant that intends to seek a design certification must submit the proposed ITAAC in the FDA application material. However, neither 52.43(c) nor Appendix O state whether or not the ITAAC review and approval needs to be completed before FDA issuance, or whether ITAAC needs to be discussed in an FDA.

The purpose of the design certification ITAAC is to confirm that the as-built plant conforms to the approved design certification and that, if the acceptance criteria are satisfied, there is reasonable assurance that the plant will operate in accordance with the design certification. Clearly, ITAAC needs to be completely reviewed and approved before design certification rulemaking, but it is not as clear that all ITAAC issues need to be resolved before FDA issuance.

The staff has identified three possible policy options regarding how the staff could treat ITAAC in relation to issuance of FDAs. The first option is to agree with NUMARC's recommendation to decouple the final review and approval of ITAAC from the design review and issuance of an FDA. The second option is to require a final ITAAC review and approval before issuance of an FDA. The staff believes that this was the original intent of the Part 52

rulemaking and recommends that the Commission adopt this option. The third option is to allow the staff to issue only the FDAs for the GE ABWR and the CE System 80+ before completing the ITAAC review and approval. The staff would then reevaluate the issue of separating review and approval of ITAAC from the FDA process and report back to the Commission. Each of these options is briefly discussed below.

The primary benefit of separating the staff's review and approval of ITAAC from issuance of an FDA (Option 1) is possible schedular improvements. While the staff has had continuing interaction with the industry, and prepared a Commission paper (SECY-91-178) on the form and content of ITAAC, the staff's most recent interaction with the industry indicates that a significant amount of work needs to be completed before the vendors will be able to make an ITAAC submittal. It now appears possible that as a result of delays in ITAAC submittals the staff may complete the evolutionary plant design reviews before completing the ITAAC review. Under option one, the staff could issue an FDA that would include conditions that are subject to the staff's review and approval of ITAAC and preparation of the proposed design certification rule. It is, however, difficult to estimate the schedular impact of option one on either the FDA issuance date or the commencement of design certification rulemaking.

The staff believes that in the cases of the ABWR and System 80+ designs, one of the critical path items for commencement of rulemaking activities is the development and review of ITAAC. If ITAAC proposals are submitted on the schedules assumed in SECY-91-161, decoupling the reviews would not be expected to improve current schedule estimates because those estimates assumed that ITAAC would be reviewed in parallel with the design and not in series. If, however, ITAAC submittals are significantly delayed the review of the design and ITAAC would become more of a series review and the current overall schedules, which assume ITAAC review/approval before issuance of an FDA (Option 2), would be impacted negatively. If ITAAC is delayed significantly, decoupling the reviews could provide a schedular advantage to the issuance of the FDA without ITAAC approval. As discussed in the following paragraph, however, this potential schedular improvement (Option 1), for FDA issuance could have an overall negative schedular impact for design certification issuance. In the cases of the SBWR and the AP600 designs, it is expected that the ITAAC form and content issues will be resolved in time to enable the vendors to submit the proposed ITAAC with the FDA design information and therefore there would be no schedular benefit to separating ITAAC approval from FDA issuance.

There are a number of potential problems with implementing option one. Inefficiencies could be introduced into the review process created by the necessary re-review of the design during the ITAAC review. Separating the ITAAC review from the design review may in the end have an adverse effect on the design certification rulemaking schedule since different reviewers may be involved, each requiring time to become familiar enough with the design to complete the required evaluations. Another potential problem would be possible backfit constraints on the staff should design deficiencies be identified during the post-FDA ITAAC review. This matter is still under consideration. The staff believes that while completing the staff's review of ITAAC after issuance of the FDA may allow for earlier issuance of the FDA itself, it will not improve the schedule for completing the design certification rulemaking. Therefore, the staff believes that there is no long term schedular advantage to separating ITAAC from issuance of an FDA.

The staff believes that there are a number of benefits to completing the review of ITAAC before issuance of an FDA (Option 2). The staff expects that the resolution of ITAAC issues will closely interface with the resolution of many technical issues during the FDA review. The staff reviewer will need to be cognizant of the tests and acceptance criteria included in ITAAC in order to provide reasonable assurance that the plant will be built and operated in accordance with the design certification. The ITAAC review would be an integral part of the review process for a certification FDA. The use of a contiguous review process will ensure that the same staff members that reviewed the design will also review the proposed ITAAC as well as develop the proposed certification rule including the designation of Tier 1 and Tier 2 information. If the FDA includes staff approval of ITAAC, all staff technical review activities associated with that design will have been completed before issuance of the certification FDA and only the rulemaking and public participation portion of the 10 CFR Part 52 process would remain. In summary, the staff believes that the Part 52 goal of providing a stable and predictable licensing process is optimized if ITAAC requirements are reviewed and approved before FDA issuance.

Option 3 is a compromise between Options 1 and 2. Although the staff believes that ITAAC should be reviewed and approved prior to FDA issuance, the fact that the ABWR and the CE System 80+ application submittals spanned the development and promulgation of 10 CFR Part 52 may justify using Option 1 for these designs and reevaluating the policy in the future. The staff expects that a great deal

will be learned as the entire Part 52 process is used for the first time for the ABWR and CE System 80+ designs.

Coordination: The Office of the General Counsel has reviewed this paper and has no legal objection to its content.

Recommendation: That the Commission concur with the staff's recommendation to require the review and approval of ITAAC before issuing an FDA.

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Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Friday, August 2, 1991.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Friday, July 26, 1991, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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