

April 4, 2002

ORGANIZATION: Framatome ANP

SUBJECT: SUMMARY OF MEETING WITH FRAMATOME ANP REGARDING THE
DESIGN CERTIFICATION PROCESS FOR THE SWR-1000

Representatives of Framatome ANP met with the Nuclear Regulatory Commission (NRC) on March 13, 2002, to present the design features of the SWR-1000, a European designed boiling water reactor, and to discuss process issues associated with the review of an application for design certification. Framatome ANP also discussed a few technical issues related to the translation of this European design to US standards. Finally, Framatome ANP addressed possible future interactions with the NRC.

Enclosure 1 is a listing of the meeting attendees. The NRC maintains an Agencywide Documents Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The handouts may be accessed through the ADAMS system under Accession No. ML020780276. If you do not have access to ADAMS or if there are problems in accessing the handouts located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737 or by e-mail to pdr@nrc.gov.

Regulatory Treatment of Non-Safety Systems

Framatome ANP explained that its design provides for non-safety related active systems to mitigate all transient and accident scenarios, and that all active systems were backed up by safety-related systems which are all passive in nature. The staff stated this design basis made the SWR-1000 an "advanced" design under the provisions of Subpart B of Part 52, which sets forth the regulations that govern the design certification process. The staff's interpretation of this part of the regulation is based on the fact that the design uses passive systems, therefore it is categorized "advanced."

The staff said there may be special treatment of the active systems (that is, imposition of some selected features of safety-related equipment) as had been done for the AP600. Such special treatment will depend on the staff's assessment of the reliability of the passive systems, including such matters as long-term hydraulic behavior, expected mission times after actuation, the length of the "grace" period (elapsed time until operator action is required), replenishment techniques (such as refilling stored water systems), sensitivity studies, and the results of specific PRAs. Framatome ANP explained that the design is based on a grace period of 72 hours.

Reactor Pressure Vessel Failure

Framatome ANP stated that the design provides for the protection of the reactor vessel in the event of a core melt accident. When asked whether Framatome ANP would still have to postulate a vessel failure, the staff stated that it would be necessary to postulate core melt and

vessel penetration in order to evaluate the capabilities of containment resulting from severe accidents.

Passive System Design

The staff stated it would be necessary to evaluate certain systems interactions, specifically, the effects of the failure of one or more active systems on the operation of the passive systems.

PRA Considerations

The staff expects a full (Level 3) probabilistic risk assessment (PRA). By the time of the application, Option 2 of the implementation of PRA into the regulations is expected to be in place. The screening of SSCs, however, is an Option 3 provision, which is not likely to be accepted within the next several years. Framatome ANP could, however, try for an exemption, as was done by the South Texas Project for some of its systems. The staff was asked about the future of Part 53, which is intended to incorporate elements of risk-informed decision making. The staff referred Framatome ANP to a proposed NEI white paper.

Security Requirements

The staff could not predict what special design features might be required for security.

European Standards

Framatome ANP asked about using design features and testing results obtained using European standards. The staff stated that Framatome ANP would be obligated to demonstrate equivalence. All qualification tests would have to be conducted under a program that is equivalent to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B (Quality Assurance).

Testing Requirements

The need for integral tests would depend on the staff's review of the design and any individual tests. Specific issues should be addressed in future discussions.

NRC Review Process

The design certification review involves about 30 reviewers under the coordination of a single project manager, although when the work load peaks, more than one project manager may be assigned. The staff referred Framatome ANP to SECY 01-0188, "Future Licensing and Inspection Readiness Assessment," for additional information. The review will be subject to Advisory Committee on Reactor Safeguards (ACRS) and Commission review and will include a rulemaking process. Framatome ANP will need to address the inspections, tests, analyses, and acceptance criteria (ITAAC) for the design.

Utility Support

The staff said it would not be necessary this year to demonstrate utility support because Framatome ANP is still in the exploratory stage. The staff said to continue these discussions into more specific issues, they would allocate resources based on utility interest in its design. The staff is willing to continue pre-application discussions of the SWR-1000 design this year to the extent that Framatome ANP has specific issues that can be beneficially addressed such as testing requirements.

Summary

At the close of the meeting, the staff and Framatome agreed to meet again on the SWR-1000 and have tentatively scheduled a meeting on August 15, 2002. Framatome ANP also stated that it is evaluating a pressurized water reactor design and may request a meeting to discuss the design.

The staff requested that Framatome ANP submit a letter describing their future intentions regarding design certification.

/RA/

Jack Cushing, Project Manager
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation

Project No. 693

Enclosures: As stated

cc w/encls: See next page

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MEETING WITH FRAMATOME ANP

MARCH 13, 2002

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