

August 7, 2003

ORGANIZATION: General Electric Nuclear Energy (GE)

SUBJECT: SUMMARY OF MEETING HELD ON JUNE 25, 2003, TO DISCUSS
REQUESTS FOR ADDITIONAL INFORMATION (RAIs) RELATED TO
ESBWR PRE-APPLICATION SUBMITTALS

The Nuclear Regulatory Commission (NRC) hosted a public meeting with General Electric Nuclear Energy (GE) on June 25, 2003, at NRC Headquarters to discuss requests for additional information (RAIs) related to ESBWR pre-application submittals. A list of attendees is provided as Enclosure 1. Enclosure 2 contains the agenda for the meeting.

GE provided non-proprietary handouts during the meeting which can be accessed through the Agencywide Documents Access and Management System (ADAMS). This system provides text and image files of NRC's publicly available documents. The handouts mentioned above may be accessed through the ADAMS system under Accession Nos. ML031820622, ML031820635, ML031820640, and ML031820649. 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.

By letter dated April 18, 2002, GE requested a pre-application review of the reactor design — ESBWR. The ESBWR is a 1390 MWe, natural circulation, boiling water reactor design which utilizes passive safety systems. GE has submitted eight topical reports in support of the ESBWR pre-applications review. The staff has requested GE to provide additional information related to these topical reports. The purpose of the June 25, 2003, meeting was to discuss RAIs related to NEDC-32725P, Volumes 1 and 2, "TRACG Qualification for SBWR," NEDC-33080P, "TRACG Qualification for ESBWR," and NEDC-33083P, "TRACG Application for ESBWR." These RAIs were forwarded to GE by letter dated June 20, 2003 (Accession No. ML031610516). A non-proprietary version of these RAIs was issued on July 25, 2003 (Accession No. ML031970012), and is publicly available in ADAMS.

During the open portion of the meeting, GE and the staff discussed the ESBWR pre-application review schedule and the agenda for the July 8, 2003, Advisory Committee for Reactor Safeguards (ACRS) Thermal-Hydraulic Subcommittee meeting, the July 9, 2003, meeting between the NRC and GE, and the July 10, 2003, ACRS Full Committee meeting. GE informed the staff that additional information to support the application of the TRACG code for ESBWR anticipated operational occurrences (AOOs) would be submitted in the fall of 2003, and that GE planned to submit topical reports regarding the application of TRACG for the analysis of ESBWR anticipated transients without scram (ATWS) and thermal-hydraulic stability in early 2004. These topics are outside the current scope of the ESBWR pre-application review. The staff requested GE to submit a letter discussing these additional submittals to assist the staff's planning and budgeting for these activities.

During the closed portion of the meeting, GE discussed the details of their proprietary submittals. A non-proprietary summary of these discussions is provided as Enclosure 3.

/RA/

Amy E. Cubbage, ESBWR Project Manager
New Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 717

Enclosures: As stated

cc w/encls: See next page

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ADAMS ACCESSION NUMBER: ML031820724-Pkg.

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MEETING WITH GENERAL ELECTRIC
ESBWR PRE-APPLICATION REVIEW
JUNE 25, 2003
ROOM 06B4, 8:30 AM - 5:00 PM

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Amy Cubbage	NRC/NRR/NRLPO

General Electric ESBWR Pre-application Meeting
June 25, 2003
Room O-6B4

8:30 a.m.	Introductory Remarks	NRC	Open
8:40 a.m.	Introduction	General Electric	Open
9:00 a.m.	Schedule and ACRS meetings	GE/NRC	Open
9:15 a.m.	Background and Overview TRACG Application Roadmap of Models, Qualification and Application Base Qualification SBWR Qualification ESBWR Qualification	General Electric	Closed
10:30 a.m.	Overview of Test Programs PCCS System Component and Integral Tests Panda Test Facility and Programs	General Electric	Closed
11:30 a.m.	Lunch Break		
12:30 p.m.	Requests for Additional Information TRACG Model Questions TRACG Qualification for ESBWR TRACG Transient Application	General Electric	Closed
4:30 p.m.	Summary and Conclusions	GE/NRC	Closed
5:00 p.m.	Adjourn		

Non-Proprietary Summary of Closed Portion of June 25, 2003, Meeting

During the closed portion of the meeting, GE made three presentations to the staff related to the staff's requests for additional information.

TRACG Qualification Overview

GE discussed how the qualification of TRACG relates to the overall ESBWR technology program. The qualification of TRACG validates the TRACG model which is the code used for ESBWR analysis. There are three elements of the TRACG qualification: (1) qualification studies relevant to all BWRs; (2) SBWR-specific qualification relevant to all passive BWRs; and (3) ESBWR qualification which provides confirmation for the ESBWR design.

GE stated that TRACG has been assessed against separate effects tests, component performance tests, integral system tests, and BWR plan data. Specific details of these assessments were provided, including the test coverage for ESBWR loss of coolant accident (LOCA).

Overview of Passive Containment Cooling Operation and Test Programs

GE discussed the operational modes of the passive containment cooling system (PCCS) and the PCCS operating characteristics. PCCS heat removal is a function of inlet non-condensable gas fraction, stored non-condensable gases, the pressure and flow rate. Examples of the PCCS modes tested during the PANDA and PANTHERS tests were provided and the test coverage was discussed.

PANDA Tests

GE provided an overview of the PANDA test facility, including the scale of the facility, the components represented in the facility, the test configuration, and the test instrumentation. The test matrix and test conditions for the PANDA P-series tests were presented as follows:

- P1: Base case
- P2: Early start
- P3: Passive containment cooling system (PCCS) startup
- P4: Trapped air in the drywell
- P5: Symmetric case
- P6: Systems Interactions
- P7: Severe accident
- P8: PCCS pool boil down

GE discussed how the PANDA tests were modeled using the TRACG code, in manner similar to the ESBWR model but representing the specific geometry of the PANDA test facility. GE discussed the details of the TRACG nodalization used to model the PANDA tests, the PANDA P-series test results, and the TRACG assessment of the PANDA tests.

In summary, GE stated that the PANDA tests have demonstrated the robustness of the passive heat removal system operation over a wide range of conditions, that the TRACG predictions of the PANDA tests capture the global system response and operation of the passive heat removal systems, and that the TRACG code is expected to successfully predict the passive system operation and the behavior of the ESBWR.

GE and the staff discussed the staff's requests for additional information (RAIs) related to the above topics. These RAIs were forwarded to GE by letter dated June 20, 2003. GE stated that they would respond to the staff's RAIs by August 15, 2003, to allow the staff to complete the review in a timely manner.

ESBWR

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