



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 25, 1992

Docket No. 50-605

APPLICANT: General Electric Company (GE)
PROJECT: Advanced Boiling Water Reactor (ABWR)
SUBJECT: SUMMARY OF MEETING HELD ON OCTOBER 24, 1991, WITH GE

A public meeting was held between the Nuclear Regulatory Commission (NRC) staff and GE representatives at the NRC White Flint Building in Rockville, Maryland. The purpose of the meeting was to discuss open issues in several areas related to the review of the ABWR Standard Safety Analysis Report (SSAR). Enclosure 1 is a list of those attending the meeting. The following is a summary of each of the topics which were discussed:

1. Design Basis Tornado

Both the Electric Power Research Institute (EPRI) Evolutionary Requirements Document and the ABWR SSAR have reflected a maximum design basis tornado (DBT) wind speed and associated physical parameters less than that recommended in Regulatory Guide (RG) 1.76. Specifically, GE indicated in the SSAR a wind speed of 260 miles per hour (mph), while the RG indicated 360 mph.

The staff discussed the position included in the draft safety evaluation report which indicated that the staff would accept the lower maximum wind speed, but that the use of it in the design would limit the number of sites in the U.S. for the location of the ABWR. In addition, GE would also need to consider other external phenomena such as impacts from small aircraft and the effects of local explosions.

GE indicated in the meeting that additional clarification was needed relative to the guidance document, which should be used to implement the staff's position regarding site suitability. RG 1.76, a 1988 NRC staff interim position, and the ANSI-ANS 2.3-1983 each provide a different guidance. The staff indicated that the most recent position on the record was that issued in the March 25, 1988, letter from L. Rubenstein. This established the interim position indicating a maximum wind speed of 330 mph for Region I in the U.S. The staff committed to providing further guidance to GE in a future call or meeting, subsequent to internal discussions between the structural and radiation protection staff, who have joint responsibility for the standard review plan (SRP) for this item.

QFO/11

2. **Leak-Before-Break (LBB)**

The staff provided guidance to GE on the criteria for using an LBB analysis for the ABWR. Specifically, the use of P11, P22 rather than carbon steel materials will reduce the effects of erosion/corrosion by 30-60 percent. For piping inside containment, stainless steel, the LBB analysis should go from anchor point to anchor point and should address intergranular stress corrosion cracking concerns. Inside containment leakage should have technical specification limits at 1 gpm for unidentified leakage and 25 gpm for identified leakage. For leakage outside containment, leak detection devices such as steam tunnel thermocouples should be used to avoid the potential for pipe whip, jet impingement, and other break dynamic effects.

The staff committed to providing further guidance on acceptable leak detection methods to both GE and EPRI. GE committed to providing additional details on the lines inside containment to which it plans to apply LBB analysis.

3. **Module Energy Pipe Breaks**

The staff indicated that GE had not considered non-seismic piping in its moderate energy line break analysis. GE had, instead, calculated through wall cracking at the site of a leak in accordance with the SRP, to cultivate potential flooding areas and effects. The staff had expected a full pipe break analysis if a line was non-seismic.

The staff proposed two options to consider:

- a. GE can demonstrate that non-seismic lines are seismically hung. If not, then a break must be postulated as occurring anywhere to generate stresses and loads; or
- b. GE can postulate the worst non-seismic line break (largest pipe) to bound the analysis.

GE committed to consider the staff's comments and provide a response.

4. **Reactor Systems Issues**

Anticipated Transient Without Scram (ATWS)

The staff requested that GE confirm that the 3 heat exchangers have the capacity to mitigate an ATWS event. A U. S. Department of Energy report had indicated that it would take the capacity of 3.5 heat exchangers to mitigate an ATWS event. GE committed to providing a response to clarify that item.

Reactor Water Cleanup System (RWCS)

The staff discussed an Advisory Committee on Reactor Safeguards (ACRS) concern about a 2" hole at the bottom of the reactor vessel which is attached to the RWCS intake line. ACRS is concerned about the effects if a break in the line below the level of the bottom of the vessel. GE committed to looking at its ABWR analysis and will address ACRS concerns in a future amendment or in a letter to the staff.

Severe Accident Management Chapters

The staff indicated that it would be preparing an independent evaluation of the ABWR design capability to address severe accidents to be included in the final safety evaluation report. Included in the chapter will be a discussion of the ABWR accident management, and design features which mitigate effects of severe accidents. The staff committed to providing additional guidance and conducting further discussion in future meetings.

Non-Safety Grade Equipment

GE committed to providing additional information on the impact of not giving credit for non-safety grade equipment on the ABWR design.

Original Signed By:
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Enclosure:
Attendees List

cc w/enclosure:
See next page

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Enclosure 1

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