



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

April 5, 1994

Docket Nos. 52-001
and 99900403

Mr. Joseph Quirk
GE Nuclear Energy
175 Curtner Avenue
Mail Code 782
San Jose, California 95125

Dear Mr. Quirk:

SUBJECT: PRELIMINARY FINDINGS FROM THE VENDOR INSPECTION BRANCH INSPECTION
RELATED TO THE ADVANCED BOILING WATER REACTOR (ABWR) DESIGN
(INSPECTION REPORT NO. 99900403/94-01)

On March 22 through 24, 1994, a six person inspection team from the Office of Nuclear Reactor Regulation visited GE Nuclear Energy's (GE's) office in San Jose, California. The purpose of the inspection was to evaluate information regarding the remaining issue identified in the previous ABWR quality assurance (QA) inspection conducted on September 7 through 10, 1993. This item dealt with the substantiation of the extent of GE oversight of the Technical Associate's (TA) design and analysis efforts supporting the ABWR design development. This issue was predicated on the view that GE had not conducted technical audits of its partners' activities of sufficient duration, scope, or depth to obtain reasonable assurance that the TAs were performing design related activities at a level of quality commensurate with GE's QA program requirements. Additionally, evidence was not found in GE Design Record Files (DRFs) that supporting design documents generated by the TAs had been reviewed by GE personnel.

In recent discussions with the staff, GE suggested that the staff consider the amount of interaction, review, and oversight that GE exercised during Design Phases II and III, conducted during the period 1981-1985, and the Common Engineering review conducted after the conclusion of the Phase III design effort. GE indicated that this was a period of intensive communications and design development between GE and the TAs which was a consensus process during which three initial designs for each system evolved into a single acceptable final design based on input from the technical staff of GE and the TAs. GE's staff further stated that by reviewing the Phase II and III final reports summarizing the joint design evolution effort, as well as GE DRFs, the staff could potentially find sufficient evidence to support a positive conclusion relative to the open item.

Prior to the inspection trip, the staff asked GE to review its ABWR system records and identify a set of systems for which a TA had lead design responsibility. From that set, the staff chose 8 systems and during the inspection, the staff reviewed a large set of documents to ascertain to what extent GE had reviewed specific design information and supporting analysis. Further, the staff searched for examples of GE verification of TA calculations. In addition, the inspection team members interviewed several GE staff engineers who previously participated directly in, or were cognizant of, the above activities.

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This three-day effort resulted in the identification of several substantial examples of GE activities reflecting thorough review of design specifications, instrument block diagrams, piping and instrumentation diagrams, system analyses, and system performance and capacity calculations generated by the TAs. This was revealed in records of GE written feedback, comments, proposed design revisions, independent calculations, and analyses summaries which had been submitted to its partners during the ABWR design evolution.

As was discussed in the exit meeting with GE, the staff evaluation of the above information provides reasonable assurance that the extent, depth, and duration of GE's participation in the joint design effort provided a basis for confidence in the technical quality of the TAs' design activities. This finding provides the basis for the resolution of FSER Open Item F17.1.3-1.

Other nonconformances and unresolved items which had been identified in the inspection report dated October 28, 1993, (99900403/93-02), were also discussed and reviewed during the inspection. Those items will be included in the official inspection report which will be provided in the near future. No response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's, "Rules of Practice," a copy of this letter will be placed in the NRC Public Document Room.

Sincerely,

(Original signed by)

R. W. Borchardt, Director
Standardization Project Directorate
Associate Directorate for Advanced Reactors
and License Renewal
Office of Nuclear Reactor Regulation

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