



General Electric Company
175 Curtner Avenue, San Jose, CA 95125

October 5, 1994

MFN No. 126-94

Docket No. 52-001

Dennis M. Crutchfield, Associate Director
for Advanced Reactors and Licensing Renewal,
Office of Nuclear Reactor Regulation

Dear Mr. Crutchfield

Subject: Design Control Document (DCD) Unidentified Changes

References:

- (1) Letter, Dennis M. Crutchfield to Joseph Quirk, Certification of the Design Control Document (DCD) for the Advanced Boiling Water Reactor (ABWR), September 27, 1994.
- (2) Letter, Joseph F. Quirk to R.W. Borchardt, Submittal of ABWR Design Control Document (DCD), September 7, 1994, MFN No. 106-94.

The purpose of this letter is to respond to your request (Reference 1) for us to identify the root cause of why the unidentified changes occurred in the DCD (Reference 2) and what corrective measures we have taken.

Root Cause

The root cause was some corrupted files in the SSAR Master File coupled with an expectation that the attempt to restore the corrupted files would be fully successful. These partially restored files led to numerous unintentional differences between the DCD and the SSAR. Further, since the changes were unintentional and unsuspected, there was no reason to review the pages, presumed unaffected (except for headers and footers), for corrections. Of course, intentional changes were reviewed for accurate incorporation.

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see attached
distribution

The source of this corruption has been determined by GE's word processing subcontractor, Impromptu-Unlimited, to be due to system crashes on a new computer (PowerMac) and bad sectors on a hard drive. The SSAR Master File, 525 megabytes in size, had been stored on a 1 gig hard drive. Its backups were made when changes were generated. The 1 gig hard drive had an unknown partial failure (bad sections on platters). When the DCD file (480 megabytes) was duplicated from the SSAR Master File, some files when opened in FrameMaker had a message that the file had been corrupted, which meant the SSAR Master File was also corrupted. The last backup of the SSAR Master File was checked and the same files were found to be corrupted. Impromptu-Unlimited then went to a previous backup file that was not corrupted and attempted to restore the file. However, some of the data that should have been included in the DCD were missed. This series of events was not reported to GE by Impromptu-Unlimited before we transmitted the DCD.

Corrective Measures

To create a valid DCD Master File, two page-by-page reviews of the submitted DCD against the hard copy of the final amended SSAR have been made to identify the differences. One review was made by an engineering team, the other by a word processing team. Following incorporation of corrections for the identified unintentional differences into the existing DCD Master File, a preliminary DCD Master File has been generated. A third review is being conducted by a team of proofreaders encompassing word-for-word comparison of the printouts of the preliminary DCD Master File against the SSAR hard copy. Any unintentional changes identified in the third review are being corrected with incorporation of changes associated with the resolution of NRC comments. These corrections and changes are also proofread. The final DCD Master File will be the product of the final review and will be used in the production of the final DCD currently scheduled for mid-October 1994.

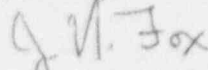
Based upon discussion at the GE and NRC meeting in San Jose, CA during September 27 and 28, 1994, GE is treating the DCD under its configuration control procedures to the extent that they are applicable to documents that are not formally issued by GE.

The following additional corrective and preventive measures have been implemented.

- (1) Reinstalled operating system on PowerMac.
- (2) Obtained a 1.7 gig hard drive and transferred data that was not corrupted to it from the 1 gig hard drive. Reformatted 1 gig hard drive.
- (3) Obtained a third large hard drive (1.7 gig) to use as a backup storage for the DCD Master electronic files.
- (4) Updating the DCD Master electronic files and backing them up on the "DCD backup hard drive" as well as a tape backup. The backup hard drive is located at GE San Jose offices.

- (5) Weekly diagnostics is being done on all of the large hard drives using Norton Utilities.
- (6) Impromptu-Unlimited will immediately report to GE any potential corrupted files or conditions that could lead to them.

Sincerely,

 for

Joseph F. Quirk

Project Manager

ABWR Certification

M/C 782 - (408) 925-6219

cc: N. D. Fletcher (DOE)

T. H. Boyce (NRC)