

APPENDIX A

Notice of Nonconformance

Based on the results of an NRC inspection conducted on October 15-19, 1984, it appears that certain of your activities were not conducted in accordance with NRC requirements. Nonconformance with these requirements are as follows:

- A. GE Quality Assurance Topical Report NEDO-11209, Rev. 4, "Nuclear Energy Business Operations Boiling Water Reactor Quality Assurance Program Description," Section 3.12, "Design Change Control" states, in part, that "Following issuance of engineering documents, a design change control procedure is implemented with controls commensurate with those applied to the original design...The Control procedure requires that every change must be documented, design verified, approved by the responsible engineer, and reviewed by the appropriate interfacing components. The responsible engineer is charged with the responsibility for defining all other design documents affecting the change and for resolving and coordinating changes with other engineers whose documents are affected."

Contrary to the above, Engineering Operating Procedure (EOP) 40-3.00, "Engineering Computer Programs" (ECPs) Section 4.3 requires that the responsible engineer for an ECP identify code errors and propose corrective actions to the applicable Control Component and provide documentation in the Design Record File for the code. However, this procedure does not assign the responsibility for identifying design documents associated with the application of the computer code or for coordinating code changes with other responsible engineers whose design documents may be affected. Further, Section 4.1 of EOP 40-3.00 does not require that the Control Component interface with responsible engineers affected by a computer code error, and assess effects of computer code errors on designs, past and present.

- B. GE EOP 40-3.00, "Engineering Computer Programs," Rev. 7, Section 1.E, "Software Test Report (STR)" states that "The STR provides the detailed description of the software test, including unit integration, validation, and system tests required to verify that coding and associated Software Data Library satisfy all requirements defined in the Software System Specification (SSS) and Software Requirements Specification (SRS). The STR documents the results of these software tests."

Contrary to the above, the STR in the Design Record File (DRF) for the CRNC-04 computer code (No. A00-01619) did not include all of the code testing that was specified in the SSS.

- C. GE EOP 42-6.00, "Independent Design Verification," Section 4.1.1, "Performing Verification," states, in part, that the responsible engineer shall "Assure that all new designs and changes to verified designs, including all

applications of design and design changes, are verified before issue or application as numeric revision documents."

Contrary to the above, verification of calculations described in GE Topical Report NEDE-25518 was not completed until after issuance of the report. The requirements for deferral of the verification were not indicated in the associated DRF (No. A13-00141).

- D. GE EOP 42-10.00, "Design Record File" Section 4.2.d.4 states, in part, that "Calculations are to identify the subject (structure, system, or component to which the calculation applies), originator, reviewer's name and date when performed and the current date."

Contrary to the above, the Design Record File for the PANACEA Core Design System (No. 670-0005) did not always identify the originator, reviewer, or date the review was performed.

- E. Section 3.10 of the GEQA Topical Report NEDO-11209-04A states, in part, that "Design verification is a process for an independent review of designs against design requirements to confirm that the designer's methods and conclusions are consistent with requirements, and that the resulting design is adequate for its intended purpose. All BWR product designs and each application thereof are verified."

Contrary to the above, applications of the engineering computer program SAP4G07 were not completely verified as discussed below.

1. Two options of the beam element (fixed end forces and shear deformation analysis) and one option of the pipe element (the ASME code analysis) had no verification provided.
2. One nodal point option (slaved degrees of freedom) and one option of the beam element (released degrees of freedom) had verification for the latest version, SAP4G07, but not for earlier versions. This is documented because an earlier version of the code, SAP4G06, (which is a Level 3 program), is still available for use on safety related designs.

- F. GE EOP 42-6.00 Section 4.1.1.e.2 states, in part, that "When the design or design change is complete, provide a verification package to the verifier. This package consists of the information the verifier needs to perform a verification, and includes...the documented scope and method of verification."

Contrary to the above, the methods for which analytical results included in engineering computer program SAP4G07, verification problems 4.1, 4.2, 5.1, 8.1, and 14, had no documented references nor were any hand calculations included with the solutions.

- G. GE EOP 40-3.00, "Engineering Computer Programs," Section 4.4.D states, in part, that computer program users "Document and Report Engineering Computer Program technical usage problems, including potential errors to the responsible engineer."

Contrary to the above, users are reporting computer code errors verbally to the responsible engineer without any documentation. This was stated by GE personnel and verified by the NRC inspector when a user of the ANSYS Computer Program could not produce documentation, for the reporting of a potential error to the responsible engineer, concerning DRF-175-0013-2.