

NOTICE OF NONCONFORMANCE

General Electric Nuclear Energy
Nuclear Energy Production
Wilmington, NC

Docket No.: 99900003

On the basis of the results of an inspection conducted from May 6 through 10, 1996, it appears that certain of your activities were not performed in accordance with requirements of the Nuclear Regulatory Commission (NRC).

Criterion III, "Design Control," of Appendix B to Part 50 of Title 10 of the Code of Federal Regulations (10 CFR), requires, in part, that design control measures shall be applied to reactor physics, stress, thermal, hydraulic, and accident analyses, and shall provide for verifying or checking the adequacy of the design.

Section 3.8, "Design Verification," of "GE Nuclear Energy, Quality Assurance Program Description," NEDO-11209-04A, Revision 8, Class 1 (approved by the NRC on March 31, 1989, as meeting the requirements of Appendix B to 10 CFR Part 50) requires, in part, that design verification is a process for independent review of designs against design requirements to confirm that the designer's methods and conclusion are consistent with requirements and that the resulting design is adequate for its specified purpose.

Section 1.1.5.A of Amendment 22 of the "General Electric Standard Application for Reload (GESTAR) II" topical report documented in NEDE-24011-P-A, "General Electric Standard Application For Reactor Fuel" (approved by the NRC on July 23, 1990) requires, in part, that the safety limit minimum critical power ratio (SLMCPR) shall be recalculated following the steps in 1.1.5.B or reconfirmed when a new fuel design or new critical power correlation is introduced. Section 1.1.5.B describes the reference core conditions and input assumptions to be used when performing the SLMCPR calculations. Section 1.1.7.C describes the criteria for establishing new critical power correlation and refers to NRC approved "General Electric BWR Thermal Analysis Basis (GETAB): Data, Correlation and Design Application," NEDE-10958-A, January 1977, to determine coefficients in the correlation.

Appendix IV-4, "Effect Of Power Distribution On Statistical Rod Boiling Transition Analysis," of GETAB requires, in part, the rod patterns chosen are those which maximize the assembly powers in an annular zone of maximum radius.

- A. Contrary to the above, GE failed to recalculate or reconfirm the applicability of the generically determined SLMCPR to new fuel bundle designs. GE's failure to recalculate or reconfirm the applicability of the generically determined SLMCPR to new fuel bundle designs as required by the NRC approved methods in GESTAR resulted in eight licensee reactor cores loaded with GE11 fuel and three reactor cores loaded with GE9 fuel operating with incorrect and nonconservative SLMCPR technical specification limits.
(Nonconformance 99900003/96-01-01)

Enclosure 1

- B. Contrary to the above, GE's input assumptions used in recent generic SLMC-R analysis did not provide for a large annular peak power region placing a large fraction of fuel bundles near the limit as required by the NRC approved methods in GETAB.
(Nonconformance 99900003/96-01-02)
- C. Contrary to the above, GE's R-factor data used in the GE11 SLMCPR analysis was not adequately verified since the R-factors were not bounding and the design verification of the R-factor data used in the GE11 SLMCPR analysis failed to identify this deficiency.
(Nonconformance 99900003/96-01-03)

Please provide a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Chief, Special Inspection Branch, Division of Inspection and Support Programs, Office of Nuclear Reactor Regulation, within 30 days of the date of the letter transmitting this notice of nonconformance. This reply should be clearly marked as a "Reply to a Notice of Nonconformance" and should include for each nonconformance (1) a description of steps that have been or will be taken to correct these items, (2) a description of steps that have been or will be taken to prevent recurrence, and (3) the dates the corrective actions and preventive measures were or will be completed.

Dated at Rockville, Maryland
this 10 day of September, 1996