

MAR 31 2005



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Attn: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**REPORT OF CHANGES, TESTS AND EXPERIMENTS  
HOPE CREEK GENERATING STATION  
DOCKET NO. 50-354**

Pursuant to the requirements of 10CFR50.59(d)(2), this correspondence forwards a summary of changes, tests and experiments implemented at Salem Units 1 and 2 during the period March 1, 2003 through February 28, 2005 which were reviewed against the eight criteria of 10CFR50.59(c)(2).

PSEG Nuclear is currently reviewing the status of all design changes prepared prior to the current reporting period but installed after March 1, 2003. These may have been reviewed against either the three criteria of 10CFR50.59(a)(2) which were in effect prior to March 13, 2001, or the eight criteria of 10CFR50.59(c)(2) subsequent to that date.

Results of that review will be provided by May 15, 2005 as a supplementary report.

Should you have any questions, please contact Ralph Donges at (856) 339-1640.

Sincerely,

A handwritten signature in black ink, appearing to read "Christina L. Perino".

Christina L. Perino  
Regulatory Assurance Director

Attachment

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**SUMMARY OF CHANGES TESTS AND EXPERIMENTS  
HOPE CREEK**

**Hope Creek Cycle 12 Core Design**

The cycle 12 Hope Creek core consisted of 240 fresh SVEA-96+ fuel assemblies, 471 SVEA-96+ fuel assemblies that were loaded in cycles 10 and 11, and 53 GE9B fuel assemblies that were loaded in previous cycles. The cycle 12 reload core was designed to operate 510 effective full power days at the core rated power of 3339 MWth.

Westinghouse Electric Company LLC, using NRC approved methods, performed the reload licensing analyses for cycle 12. The generic methodology has been applied to Hope Creek since cycle 10. The reactivity characteristics of the cycle 12 core have been determined to meet shutdown margin design and standby liquid control system capability requirements consistent with existing UFSAR assumptions.

All UFSAR Anticipated Operational Occurrences (AOOs) affected by the cycle 12 reload core were evaluated relative to the Specified Acceptable Fuel Design Limits (SAFDLs) and to demonstrate compliance with Technical Specifications Safety Limit Peak Pressure acceptance criteria. The results of the AOOs as evaluated indicated acceptable performance of the cycle 12 reload core relative to the SAFDLs and peak pressure acceptance criteria consistent with existing UFSAR assumptions.

The design basis accidents were also reviewed relative to the cycle 12 reload core design with a conclusion that acceptance criteria are met consistent with existing UFSAR assumptions.

The evaluation was subsequently revised to correct an editorial error.

**Digital EHC Upgrade**

This change replaces the Hope Creek analog Electro-Hydraulic Control (EHC) system with a digital EHC system to improve system reliability and maintainability. This change fundamentally altered the existing means of performing or controlling design functions. The modification involves new digital controls which contain different failure modes than the existing analog system.

In addition, the modification involves more than minimal differences in the Human System Interface by the use of soft controls instead of hard controls (i.e., use of touch-sensitive screens instead of pushbuttons and selection switches).

**SUMMARY OF CHANGES TESTS AND EXPERIMENTS  
HOPE CREEK**

An analysis, (General Electric Power Systems document: "Control System Reliability Assessment, Nuclear BWR Controls Retrofit, PSEG-Hope creek Site", dated March 19, 2004), was performed relative to Failure Analysis, Software Dependability, and Human System Interface. Based on that analysis, the probability of inadvertently tripping the turbine, opening governor valves beyond a desired value, or not accomplishing a turbine trip during an overspeed event due to software does not result in more than a minimal increase and does not adversely affect any SSC Design Function.

**Hope Creek Cycle 13 Core Design**

The proposed activity was the startup and operation of the Hope Creek cycle 13 core design. The cycle 13 core consists of 164 fresh GE14 fuel assemblies, 240 SVEA-96+ fuel assemblies that were loaded in cycle 12, 236 SVEA-96+ fuel assemblies that were loaded in cycle 11, and 124 SVEA-96+ fuel assemblies that were loaded in cycle 10.

The reactivity characteristics of the cycle 13 core have been determined to meet shutdown margin design and standby liquid control system capability requirements consistent with existing UFSAR assumptions.

All UFSAR Anticipated Operational Occurrences (AOOs) affected by the cycle 13 reload core have been evaluated relative to the Specified Acceptable Fuel Design Limits (SAFDLs) and to demonstrate compliance with Technical Specifications Safety Limit Peak Pressure acceptance criteria. The results of the AOOs as evaluated indicate acceptable performance of the cycle 13 reload core relative to the SAFDLs and peak pressure acceptance criteria consistent with existing UFSAR assumptions.

The design basis accidents were also reviewed relative to the cycle 13 reload core design with a conclusion that acceptance criteria are met consistent with existing UFSAR assumptions.

The evaluation concluded that prior NRC approval was not required to implement the cycle 13 core load.