

RC-01-0173 September 26, 2001

Document Control Desk U. S. Nuclear Regulatory Commission Washington, DC 20555

Gentlemen:

Subject:

VIRGIL C. SUMMER NUCLEAR STATION

DOCKET NO. 50/395

OPERATING LICENSE NO. NPF-12

10 CFR 50.54(a)(3) / 10 CFR 50.59 BIENNIAL REPORT

South Carolina Electric & Gas Company (SCE&G) is submitting the Seventeenth Report pursuant to 10 CFR 50.59(d) and 10 CFR 50.54(a) for the Virgil C. Summer Nuclear Station.

This report contains a brief description of changes and modifications made to the facility, as described in the Final Safety Analysis Report (FSAR) and the Fire Protection Evaluation Report (FPER), as well as a summary of the 10 CFR 50.59 evaluations. Non-Conformance Notices (identified by their NCN numbers), procedure changes (identified by their procedure numbers), Modification Changes (identified by the MRF and MCN numbers), Engineering Change Requests (identified by the ECR numbers) and changes to the Physical Security Plan (identified by Amendment Number) were completed during the time frame of two years prior to August 6, 2000. There were no reportable changes to the quality assurance program during this period.

Should you have any questions, please call Mr. Arnie J. Cribb at (803-345-4346) at your convenience.

Very truly yours,

Stephen A. Byrne

AJC/SAB/dr Enclosure

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RTS (0-L-99-0298)

File (815.02-8, RR-8450)

DMS (RC-01-0173)

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Identification No.	Description
BAR 99-002	This Bypass Authorization Request temporarily disabled the Main Control Board alarm "RCS Delta T Deviation Hi/Lo" and, as compensatory action, determined that VCSNS will take readings every four hours of delta temperature. This change did not involve any unreviewed safety questions.
CP-920, Rev. 2	This change to the procedure allows for use of the Nuclear Sampling System under post accident conditions during drills. This change did not involve any unreviewed safety questions.
CTO # 98-002	This caution tag review noted that the temporary opening of the Main Feedwater Pump seal drain vents to resolve feedwater oil contamination constitutes a temporary change to the facility as described in Figure 10.4-11 of the FSAR. An ECR to make this a permanent modification has been initiated. This change did not involve any unreviewed safety questions.
ECR 50013	This change to the facility eliminated power relief valve XVM02801-MS. This change did not involve any unreviewed safety questions.
ECR 50055	This change to the facility eliminated several steam generator snubbers. This change did not involve any unreviewed safety questions.
ECR 50083	This change to the facility modified the setpoint for temperature transmitter ITY03222A. This change did not involve any unreviewed safety questions.
ECR 50089	This change to the facility installed a digital control system on the Main Steam Reheaters. This change did not involve any unreviewed safety questions.
ECR 50100 REP-107.013, Rev. 2	This change to the facility evaluated and then implemented the cycle 12 core design. This change did not involve any unreviewed safety questions.
ECR 50157A	This change to the facility upgraded EFW mini-flow lines from non-nuclear safety related to quality related. This change did not involve any unreviewed safety questions.
ECR 50157B	This change to the facility removed the TDEFWP speed control. This change did not involve any unreviewed safety questions.
ETBT 452	This change to the facility upgraded the EA system Instrumentation. This change did not involve any unreviewed safety questions.
ETBT 458	This change to the facility replaced the CCW to RCP thermal barrier check valves XVC09591A, B, C-CC. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 00-005 NCN 990071, Disposition #2	This change to the FSAR revised Figures 5.5-4 and 6.3-1 to clarify RHR normal design pressures. Also, Reactor Coolant System pressure isolation check valve leakage was evaluated under the NCN and documented in PIP O-C-99-056. This change did not involve any unreviewed safety questions.
FSAR RN 00-017	This change to the FSAR revised Section 12.3.3.2 to delete the requirement for an annual whole body count. This change did not involve any unreviewed safety questions.
FSAR RN 00-018 SAP-1141, Rev. 8	This change to the FSAR revised Section 17.2.15.2 to delete all references to "Evaluation Only" NCNs. This change to the implementing procedure deleted the section describing "Evaluation Only" NCNs. This change did not involve any unreviewed safety questions.
FSAR RN 93-055, Rev. 1	This change to the facility reflects minor changes to Figure 10.4-12 under MRF 20724. This change did not involve any unreviewed safety questions.
FSAR RN 95-027, Rev. 1	This change to the FSAR revised Chapter 15 for steam generator replacement and power upgrade in accordance with MRF 90010. This change did not involve any unreviewed safety questions.
FSAR RN 96-017, Rev. 2	This change to the FSAR removed XVG-1678 from Table 6.2-54. This change did not involve any unreviewed safety questions.
FSAR RN 96-017, Rev. 3	This change to the FSAR removed references to Delta-3 model steam generators from Section 10.4. This change did not involve any unreviewed safety questions.
FSAR RN 96-044, Rev. 1	This change to the FSAR revised references in Section 10.4 from Circulating Water cooling of the Main Condenser vacuum pumps to reflect MRF 90105 change to Turbine Closed Cycle Cooling of these pumps. This change did not involve any unreviewed safety questions.
FSAR RN 96-048, Rev. 1	This change to the FSAR corrected the references to Safety Injection and Residual Heat Removal drawings in Section 5.6. This change did not involve any unreviewed safety questions.
FSAR RN 97-004, Rev. 1	This change to the FSAR changes Figure 1.2-16 to reflect the upgrade of the communications equipment to fiber optics performed under ECR 50002. This change did not involve any unreviewed safety questions.
FSAR RN 97-084	This change to the FSAR corrected the Control Rod system speed and the horsepower rating of the rod drive motor generator sets referenced in Section 7.7.1.2.1. This change did not involve any unreviewed safety questions.
FSAR RN 97-095, Rev. 1	This change to the FSAR made editorial corrections on Figure 8.3-0m. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 97-119	This change to the FSAR removes the reference in Section 9.2.1.3 to Main Control Board switches for the Service Water Pump discharge valves. This change did not involve any unreviewed safety questions.
FSAR RN 97-125	This change to the FSAR corrected Section 9.2.1.5 by adding valves from the design bases document. This change did not involve any unreviewed safety questions.
FSAR RN 98-005	This change to the FSAR changes Figure 9.5-1 to reflect the deletion of the Integrated Fire and Security system and the replacement of that panel with the SIMPLEX system, accomplished under MRF 20951. This change did not involve any unreviewed safety questions.
FSAR RN 98-020	This change to the FSAR revised Section 5.5.7.1.1.3 to reflect the correct power supply for the pressurizer power operated relief valves. This change did not involve any unreviewed safety questions.
FSAR RN 98-021	This change to the FSAR revised Figure 6.2-54 to reflect the correct power supply for valve XVG08701B. This change did not involve any unreviewed safety questions.
FSAR RN 98-024	This change to the FSAR revised Figures 1.2-5 and 1.2-20 to reflect permanent plant equipment added to the security system under ECR 50045A. This change did not involve any unreviewed safety questions.
FSAR RN 98-027	This change to the FSAR revised Figure 8.3-3a to reflect the correct relays for Diesel Generator motoring and field failure trips. This change did not involve any unreviewed safety questions.
FSAR RN 98-028	This change to the FSAR revised Section 6.4.1.1.1 to include the 448' elevation of the Control Building in the Control Room envelope. This change did not involve any unreviewed safety questions.
FSAR RN 98-029	This change to the FSAR revised Section 6.2 for Reactor Building Cooling Unit testing to reference ANSI N510-1975. This change did not involve any unreviewed safety questions.
FSAR RN 98-030	This change to the FSAR revised Section 9.5.1.2.1 and FPER Section 5.0 to capture as-built information from MRF 34911. This change did not involve any unreviewed safety questions.
FSAR RN 98-031 ECR 50047	This change to the FSAR revised FPER Figures E-023-021 and E-023-008 to reflect the removal of four doors under ECR 50047. This change did not involve any unreviewed safety questions.
FSAR RN 98-032	This change to the FSAR revised Section 9.4.1.3 to agree with the as built configuration of the plant. This change did not involve any unreviewed safety questions.

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Identification No.	<u>Description</u>
FSAR RN 98-033 MRF 31738	This change to the FSAR corrects the reference to the "Note" for 'C' Service Water Pump speed switch on Figure 8.2-4 (previously modified under MRF 31738). This change did not involve any unreviewed safety questions.
FSAR RN 98-036	This change to the FSAR deletes Section 15.2.6, Startup of an Inactive Reactor Coolant Pump. This change did not involve any unreviewed safety questions.
FSAR RN 98-037 ECR 50045A	This change to the FSAR revised Figures 1.2-4, 1.2-12 and 1.2-19 to reflect permanent plant equipment added to the security system under ECR 50045A. This change did not involve any unreviewed safety questions.
FSAR RN 98-038	This change to the FSAR revised the FPER and FSAR by adding permanent equipment (oil lockers, tool boxes, new portal monitors, etc.) to the 023 drawings. This change did not involve any unreviewed safety questions.
FSAR RN 98-039 ETBT 434	This change to the FSAR revised Section 10.4 to allow a shorter Feedwater Booster Pump suction relief valve under ETBT 434. This change did not involve any unreviewed safety questions.
FSAR RN 98-041, Rev. 2	This change to the FSAR Section 9.1.4.2 corrected a typographical error and clarified reactivity requirements for refueling. This change did not involve any unreviewed safety questions.
FSAR RN 98-043 ECR 34498	This change to the FSAR removed Thermo-Lag barriers, installed Rockbestos Firezone R cable, installed gypsum board barriers, and created Room 26-01A in Fire Zone IB-11 under ECR 34498. This change did not involve any unreviewed safety questions.
FSAR RN 98-044 MRF 21156 ECR 50004	This change to the FSAR revised Note 53 of Table 7.1-2 to add power lockout valves modified by MRF 21156 and ECR 50004. This change did not involve any unreviewed safety questions.
FSAR RN 98-045	This change to the FSAR revised Figure 8.3-1 to agree with design calculation DC08320-018. This change did not involve any unreviewed safety questions.
FSAR RN 98-046	This change to the FSAR revised Figure 5.2-8 to reflect normal valve positions. This change did not involve any unreviewed safety questions.
FSAR RN 98-047	This change to the FSAR revised Figures 7.2-1, 10.3-1, and 10.4-16 to correctly reflect signals from AMSAC (previously installed under MRF 20726). This change did not involve any unreviewed safety questions.
FSAR RN 98-048 ECR 50010	This change to the FSAR revised Figure 9.4-11 to reflect as built per ECR 50010. This change did not involve any unreviewed safety questions.

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<u>Identification No.</u>	<u>Description</u>
FSAR RN 98-050	This change to the FSAR incorporated the latest design input into Table 8D-1 from design calculation DC08200-001 to reflect correct minimum voltage levels for motors and busses. This change did not involve any unreviewed safety questions.
FSAR RN 98-053	This change to the FSAR clarified the EFW performance and required operator actions in Section 10.4 and Table 10.4-8. This change did not involve any unreviewed safety questions.
FSAR RN 98-056 ETBT 448	This change to the FSAR corrected Section 6.3.2.2.6.1 to reflect ETBT-448 which evaluated Flexicarb or graphite filled gaskets as being equivalent to asbestos gaskets. This change did not involve any unreviewed safety questions.
FSAR RN 98-059	This change to the FSAR revised Figure 9.3-4 to show valve XVT09397-SS as normally closed. This change did not involve any unreviewed safety questions.
FSAR RN 98-060 SAP-200, Rev. 7D	This change to the FSAR revised Figure 13.5-1 to reflect carpet color change in Main Control Room. This change to the procedure also reflects the carpet color change in the Main Control Room. This change did not involve any unreviewed safety questions.
FPER RN 98-063 MRF 34851 NCN 4851	This change to the FPER corrected Section 4.5 to reflect as-built MRF 34651 descriptions for Control Building floor/ceiling assemblies and walls surrounding stair towers. This change also incorporated fire areas CB-16 and CB-19 into fire area CB-8. This change did not involve any unreviewed safety questions.
FSAR RN 98-067	This change to the FSAR revised Section 9.3.2 to correct errors and remove the reference to sodium analysis in the Nuclear Sampling system. This change did not involve any unreviewed safety questions.
FSAR RN 98-071	This change to the FSAR revised Section 9.3.3.2, Item 3 to properly reflect the location of RB IA system equipment. This change did not involve any unreviewed safety questions.
FSAR RN 98-072	This change to the FSAR revised Section 8.3.2.1.5.4 to eliminate the specific size of circuit breakers used in the distribution cabinets. This change did not involve any unreviewed safety questions.
FSAR RN 98-073	This change to the FSAR revised Section 10.4.5 to allow operation with 2 Circulating Water pumps at reduced load, provided that initial conditions are met. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 98-074 NCN 5334	This change to the FSAR added a reference to Section 3A of drawing S-200-926 per NCN 5334. This change did not involve any unreviewed safety questions.
FSAR RN 98-075	This change to the FSAR revised Section 17.2.15.2 to remove the Manager, Nuclear Licensing and Operating Experience as the responsible manager for the trend report, and inserts the Manager, Quality Services as the new responsible manager. This change did not involve any unreviewed safety questions.
FSAR RN 98-076	This change to the FSAR revised Sections 9.1.3.3 and 9.1.4.3.4 to reflect the as-built location of the anti-siphon holes in the lines penetrating the Spent Fuel Pool walls. This change did not involve any unreviewed safety questions.
FSAR RN 98-078	This administrative change to the FSAR Figures 10.4-12, 10.4-16, and 9.2 2 corrected various discrepancies. This change did not involve any unreviewed safety questions.
FSAR RN 98-079 SPCR 50083	This change to the FSAR corrected the condensate temperature at the Blowdown Heat Exchanger discharge in Section 10.4. This change did not involve any unreviewed safety questions.
FSAR RN 98-081 NCN 5134 NCN 5134A	This change to the FSAR revised Section 10.4 to reflect the acceptance of the Nuclear Blowdown Holdup Tank and the Nuclear Blowdown Monitor Tank without diaphragms, as evaluated under NCNs 5134 and 5134A. This change did not involve any unreviewed safety questions.
FPER RN 98-082	This change to FPER Section 4 removed references to the overall fire loading and updated the total combustible content for two fire areas. This change did not involve any unreviewed safety questions.
FSAR RN 98-083 ECR 50097	This change to the FSAR revised Section 10.4.9.5.5 to reflect plant changes under ECR 50097 to allow securing flow to a faulted steam generator by securing the TDEFP. This change did not involve any unreviewed safety questions.
FSAR RN 98-085 MRF 22767	This change to the FSAR revised Figures 1.2-16 and 12.1-19a to indicate additional nonsafety equipment installed in the Control Building 448' elevation as a result of MRF 22767. This change did not involve any unreviewed safety questions.
FSAR RN 98-089 CBA 980001	This change to the FSAR added a discussion of CST outlet valve handwheel to Section 10.4.9.2 and deletes a commitment. This change did not involve any unreviewed safety questions.
FSAR RN 98-093	This change to the FSAR revised Section 6.3 to reflect increased

unreviewed safety questions.

hydrotest pump discharge pressure. This change did not involve any

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Identification No.	Description
FSAR RN 98-094	This change to the FSAR revised Section 8.3.1.2.1 to reflect load values for the accident limiting load, maximum load under loss of offsite power, and connected load to be consistent with design calculation DC08360-006 Revision 7. This change did not involve any unreviewed safety questions.
FSAR RN 98-096	This change to the FSAR revised Section 11.2.4.1.4.1 to reflect that the resin sluice pump remains in operation during switchover from resin bed fluffing to transfer. This change did not involve any unreviewed safety questions.
FSAR RN 98-097 ECR 50019	This change to the FSAR revised Figure 2.4-6 to reflect as-built conditions per ECR 50019. This change did not involve any unreviewed safety questions.
FSAR RN 98-099	This change to the FSAR revised Section 9.2.2.1 to reflect the seismic classification of CCW system. This change did not involve any unreviewed safety questions.
FSAR RN 98-103	This change to the FSAR revised Sections 6.2.2.1.2, 6.5.1.6.2, 9.4.1.2.4, 9.4.7.2, and 9.4.8.2.3; Figure 9.4-26c; and Tables 3.2-1, 6.2-52, 6.4-3, and 15.4-17 to correct errors, incorporate HVAC system as-built data, and clarify wording. This change did not involve any unreviewed safety questions.
FSAR RN 98-107	This change to the FSAR revised Sections 6.3.1.4, 6.3.2.2.7, 6.3.2.17, 6.3.2.2.4.4, and 6.3.3.12, Figures 6.3-1 and 6.3-2, and Tables 6.2-54, 6.3-3, and 6.3-7 to properly reflect safety analysis results, Safety Injection system operations, and component descriptions. This change did not involve any unreviewed safety questions.
FSAR RN 98-108	This change to the FSAR revised Table 6.2-54 to reflect the correct power supply for valve XVG08885-SI. This change did not involve any unreviewed safety questions.
FSAR RN 98-110 MRF 21262	This change to the FSAR revised Tables 6.3-1, 6.3-6 and Figure 6.3-2 to reflect the nominal accumulator values revised by MRF 21262. This change did not involve any unreviewed safety questions.
FSAR RN 98-113	This change to the FSAR revised Section 6.3.2.11.2 by clarifying sump "A" operation and deleting reference to the one minute time period. This change did not involve any unreviewed safety questions.
FSAR RN 98-115	This change to the FSAR revised Section 6.3.2.11.3.1 to remove a discussion of flanged connections on the non-radioactive side (shell side) of heat exchangers, making it consistent with the design bases documents. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 98-118 MRF 21432	This change to the FSAR revised Sections 7.6.1.1 and 7.7.2.1 to reflect the correct voltage for the inverters replaced under MRF 21432. This change did not involve any unreviewed safety questions.
FSAR RN 98-119	This change to the FSAR revised Section 7.2.1.1.2 and Table 7.2-3 to reflect the correct underfrequency relay setpoint range capability. This change did not involve any unreviewed safety questions.
FSAR RN 98-126	This change to the FSAR revised Table 9.2-12 to reflect the as-built CCW Booster Pump design data for total dynamic head and horsepower ratings. This change did not involve any unreviewed safety questions.
FSAR RN 98-127	This change to the FSAR revised Table 7.5-9 to reflect the correct indication range of the CCW flow indicators. This change did not involve any unreviewed safety questions.
FSAR RN 98-134	This change to the FSAR revised Table 3.10-3 to reflect the proper locations and numbers for instrumentation. This change did not involve any unreviewed safety questions.
FSAR RN 98-141	This change to the FSAR revised TABLE 9.2-1 to reflect the correct Service Water Pump high speed shutoff head Service Water Travelling Screen capabilities. This change did not involve any unreviewed safety questions.
FSAR RN 98-147	This change to the FSAR revised Section 9.5.6.2 and 9.5.7.2 to clarify the pressures and temperatures associated with the Diesel Generator Air Start and Lube Oil systems. This change did not involve any unreviewed safety questions.
FSAR RN 98-148	This change to the FSAR revised Table 9.3-5 to reflect the correct cubic feet of resin volume. This change did not involve any unreviewed safety questions.
FSAR RN 98-149	This change to the FSAR revised Sections 5.5.7.1.1.2, 9.2.6.2, 10.4.7.1.1, and 10.4.9.1 and Figure 10.4-8 to correct the CST volume available for use by the Emergency Feedwater system. This change did not involve any unreviewed safety questions.
FSAR RN 98-154	This change to the FSAR revised Sections 4.5.2.4.3.B and 4.5.17.4.3.H to correctly reflect the operational capability and the conditional restrictions for the operation of 'C' CCW Pump in high speed. This change did not involve any unreviewed safety questions.
FSAR RN 98-156 MRF 90102	This change to the FSAR revised Figure 10.4-9 to reflect the latest version of the flow diagram modified by MRF 90102. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 98-157 SPCR 50083	This change to the FSAR revised the data on Figure 10.4-9 and Table 10.4-7 to reflect the change in condensate temperature for the outlet of the Blowdown Heat Exchanger. This change did not involve any unreviewed safety questions.
FSAR RN 98-161	This change to the FSAR revised Section 15.2.4 to clarify available methods to detect a boron dilution event. This change did not involve any unreviewed safety questions.
FSAR RN 98-164	This change to the FSAR revised Appendix 3A to change the wording in the discussion of Regulatory Guide 1.13, Regulatory Position 1. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 98-166	This change to the FSAR revised Appendix 3A to change the reference on Page 3A-19, Regulatory Guide 1.35, from FSAR Section 16.4 to VCSNS Technical Specifications. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 98-167	This change to the FSAR revised Appendix 3A, Page 3A-59, Regulatory Guide 1.93, to insert "Construction Permit" just before SER and "August 1972" after the date in the first paragraph. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 98-169	This change to the FSAR revised Table 17.2-1, which inserts an asterisk in Section V after the Operational QA Plan section. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 98-177	This change to the FSAR revised Table 3.9-8 to delete valves 1-8146 and 1-8147. These valves are no longer active. This change did not involve any unreviewed safety questions.
FSAR RN 98-178 ECR 50049	This change to the FSAR revised Figures 9.3-8 and 9.3-9 to reflect that ECR 50049 relocated the I&C shop sink outlet from the Floor Drain Tank to the Turbine Building Sanitary Drain. This change did not involve any unreviewed safety questions.
FSAR RN 98-179	This change to the FSAR revised Table 6.2-52e to reflect the change in allowable minimum and maximum values for the NaOH Storage Tank. This change did not involve any unreviewed safety questions.
FSAR RN 98-182 NCN 980304	This change to the FSAR revised Figure 10.4-16 to reflect the correct design pressures in the Emergency Feedwater piping system, per design calculation DC05220-078 and evaluated under NCN 980304. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 98-183	This change to the FSAR revised Figures 1.2-9 and 1.2-10 to show permanent reactor vessel head radiation shield added by MRF 20406. This change did not involve any unreviewed safety questions.
FSAR RN 98-185 MRF 90105	This change to the FSAR revised Section 10.4.5.2 to reflect the impact of MRF 90105 on the function of the Circulating Water Jockey Pump. This change did not involve any unreviewed safety questions.
FSAR RN 99-004 MRF 22074	This change to the FSAR revised Appendix 3A, Page 3A-39, in the discussion of Regulatory Guide 1.63 to correct the type of installed protection devices added under MRF 22074. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 99-009	This change to the FSAR revised Section 9.3.4.2.5.29 to incorporate rewording for the sizing of relief valve XVR-8123. This change did not involve any unreviewed safety questions.
FSAR RN 99-010	This change to the FSAR revised Section 6.3.2.2.6.1 and Table 6.3-2 to properly reflect RHR System operations and Safety Injection System component descriptions. This change did not involve any unreviewed safety questions.
FSAR RN 99-013	This change to the FSAR revised Sections 6.3.2.2.6.2 and 6.3.2.2.6.4, and Tables 6.3-2 and 6.3-5 to update component descriptions for ECCS valves. This change did not involve any unreviewed safety questions.
FSAR RN 99-014	This change to the FSAR revised Sections 8.3.3.1.4, 8.3.3.1.5, 8.3.3.1.6, and 8.3.5, Appendix 8A.1.1 and 8A.1.3 to clarify the cable tray fill and tray support criteria. This change did not involve any unreviewed safety questions.
FPER RN 99-016	This change to the FPER revised Figure E-023-018 to correct the location of the wall separating Room 12-14 at the Control Building 412' elevation. This change did not involve any unreviewed safety questions.
FSAR RN 99-017 ECR 50076	This change to the FSAR revised Figure 2.4-6 to reflect changes to the top elevation of storm drain catch basins as a result of paving the radwaste yard area. This change did not involve any unreviewed safety questions.
FSAR RN 99-019	This change to the FSAR revised Section 17.2.17.2 to correct a typographical error. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 99-021	This change to the FSAR revised Section 17.2.1.2.1 to reflect Administrative changes to the business structure and provides an equivalent method for responsibilities / interfaces. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 99-022	This change to the FSAR revised Section 17.2.10.2 to allow maintenance personnel, other than journeymen, to perform a second verification. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 99-023 ETBT 470	This change to the FSAR revised Figure 9.3-20 to reflect the replacement of XVC09420A. This change did not involve any unreviewed safety questions.
FSAR RN 99-025	This change to the FSAR revised Figure 12.1-19 to reflect the actual usage of Room CB 412-12. This change did not involve any unreviewed safety questions.
FSAR RN 99-026	This change to the FSAR revised Section 9.2.2.5.1 to reflect that RM-L2A/B will not alarm on Reactor Coolant Pump Seal leakage. This change did not involve any unreviewed safety questions.
FSAR RN 99-027 ECR 50102	This change to the FSAR revised Sections 9.3.4.1.1.2, 9.3.4.2.1, 9.3.4.2.2, 9.3.4.2.2, 9.3.4.2.3, 9.3.4.2.4, 9.3.4.2.5.7, 9.3.4.2.5.18, 9.3.4.2.5.24, 9.3.4.2.6.1, 15.3.7, 15.4.2.1.4, and 15.4.3.4, Tables 6.2-54, 9.3-4, 9.3-5, 11.1-1, 15.3-6, 15.3-7, 15.3-8, 15.4-24b, 15.4-25, 15.4-26, 15.4-27, 15.4-29, 15.4-32, and 15.4-33, and Figure 9.3-16 to reflect normal plant operations with up to two letdown orifices in service to achieve a flow range of 60 to 120 GPM. This change did not involve any unreviewed safety questions.
FSAR RN 99-028 ECR 50102	This change to the FSAR revised Appendix 12.A.4 and 12A.6, and Tables 12A.3-2, 12A.4-1, and 12A.4-2 to reflect changes in Volume Control Tank waste gas sources due to new letdown flow rate per ECR 50102. This change did not involve any unreviewed safety questions.
FSAR RN 99-031	This change to the FSAR revised Section 10.4.6.2 to reflect actual Condensate Polisher backwash flow. This change did not involve any unreviewed safety questions.
FSAR RN 99-033 ECR 50108	This change to the FSAR revised Figures 1.2-25 and 9.3-11 to reflect removal of non-safety equipment under ECR 50108. This change did not involve any unreviewed safety questions.

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Identification No.	<u>Description</u>
FSAR RN 99-034 NCN 5312	This change to the FSAR revised Figure 1.2-24 to remove the method of securing manhole covers in the Service Water Pump House evaluated under NCN 5312. This change did not involve any unreviewed safety questions.
FSAR RN 99-035 ARP-001-XCP-601, Rev. 5A ARP-001-XCP-602, Rev. 5A	This change to the FSAR revised Section 9.2 to allow adjusting CCW flow through the RHR Heat Exchanger using the outlet valve as described in the Design Basis Document. The annunciator response procedures were revised accordingly. This change did not involve any unreviewed safety questions.
FSAR RN 99-036	This change to the FSAR revised Table 6.3-6 to reflect the actual nominal accumulator pressure. This change did not involve any unreviewed safety questions.
FSAR RN 99-038	This change to the FSAR revised Section 6.3.2.4 to correct the description of chemical spray used for environmental qualification of ECCS components. This change did not involve any unreviewed safety questions.
FSAR RN 99-040	This change to the FSAR revised Section 7.2.2.2.3.10 to provide a description of the Nuclear Instrumentation system testing consistent with the actual reactor trip interlock setpoints in Technical VCSNS Specifications. This change did not involve any unreviewed safety questions.
FSAR RN 99-042	This change to the FSAR revised Sections 9.4.4.2 and 9.4.7.2.11 and Figure 9.4-13 to reflect the correct as-built data for the Turbine Building Switchgear Air Handling Unit equipment. This change did not involve any unreviewed safety questions.
FSAR RN 99-043	This change to the FSAR revised Section 6.3.5.4.1 to accurately describe how many channels are used to provide the high, low, and empty level alarms for the Refueling Water Storage Tank. This change did not involve any unreviewed safety questions.
FSAR RN 99-047	This change to the FSAR revised Table 3.2-3 to reflect the correct year and addenda for which VCSNS is committed. This change did not involve any unreviewed safety questions.
FSAR RN 99-048 CNSI Procedure FO-OP-023-49402	This change to the FSAR revised Section 11.5.3.2.2 to allow a vendor to utilize a different temperature monitoring method for dewatering containers. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 99-057	This change to the FSAR revised Sections 3.11.5.1, 6.2.2.5.1.2, and 6.2.2.2.1.2, Appendix 12A.4.1, and the Emergency Operating Procedures to clarify that the Reactor Building spray minimum required operating period of 2 hours is a design basis LOCA requirement. This change did not involve any unreviewed safety questions.
FPER RN 99-058	This change revised the FPER by referring to the updated combustible load calculations and ensures that the FPER reflects the as-built condition of the plant. This change did not involve any unreviewed safety questions.
FSAR RN 99-060 MRF 22771	This change to the FSAR revised Figures 11.2-2, 5.1-1 to reflect the installation of piping for directing expelled gas from the Pressurizer, Pressurizer Relief Tank, and Reactor Coolant Drain Tank to the Reactor Building Purge exhaust manifold during RCS venting. This change did not involve any unreviewed safety questions.
FSAR RN 99-061 ECR 50078A	This change to the FSAR revised Figure 9.2-9A to show the Amertap system pressure transmitter flush line. This change did not involve any unreviewed safety questions.
FSAR RN 99-063	This change to the FSAR revised Section 13.1.2.2.3 to clarify the qualifications of Engineering Services personnel. This change did not involve any unreviewed safety questions.
FSAR RN 99-064 ECR 50143	This change to the FSAR revised Figure 9.2-9B to reflect the addition of a cooling spray system to the Main Transformer (XTF0001). This change did not involve any unreviewed safety questions.
FSAR RN 99-065 ECR 50084	This change to the FSAR revised Section 9.1, Figures 8G-5 and 9.1-7, and Table 3.2-1 to reflect the modification made to the method of moving the fuel transfer car. This change did not involve any unreviewed safety questions.
FSAR RN 99-066	This change to the FSAR revised Appendix 3A, Page 3A-64, to take exception to the accelerated testing and reporting provisions of RG 1.108. This change did not reduce or change any Quality Assurance commitments. This change did not involve any unreviewed safety questions.
FSAR RN 99-067 MRF 21577	This change to the FSAR revised Section 12.2.4.2.2 and Figures 12.1-7, 12.1-16, and 12A.4-6 to reflect the new panel XPN7321 added by MRF 21577. This change did not involve any unreviewed safety questions.
FSAR RN 99-068 ECR 50144	This change to the FSAR revised Figures 8G-1, 8G-8, and 8G-9 to reflect the larger fuses utilized in ECR 50144. This change did not involve any unreviewed safety questions.

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Identification No.	<u>Description</u>
FSAR RN 99-069	This change to the FSAR revised Sections 6.3.2.2.7, 6.3.3.3.1, and 6.3.6 to remove conflicting statements and make it more consistent with the Safety Injection system Design Basis Document. This change did not involve any unreviewed safety questions.
FSAR RN 99-070 MRF 20482	This change to the FSAR revised Section 8.3.1.1.4 to delete heat tracing of the Boron Injection system, performed under MRF 20482. This change did not involve any unreviewed safety questions.
FSAR RN 99-071	This change to the FSAR revised Section 6.3.3.13 to delete a specific lag time for Safety Injection following a LOCA. This change did not involve any unreviewed safety questions.
FSAR RN 99-072	This change to the FSAR revised Table 7.2-3, Reactor Trip from Turbine Trip low hydraulic fluid pressure to properly reflect the accuracy and range of the instrumentation installed in the plant. This change did not involve any unreviewed safety questions.
FSAR RN 99-073	This change to the FSAR revised Section 9.3.4.2.5.8 and Table 9.3-5 to correctly describe the Design Case and Alternative Case for the Seal Water Heat Exchanger. This change did not involve any unreviewed safety questions.
FSAR RN 99-075 MRF 21511	This change to the FSAR revised Sections 1.2.3.8.8 and 9.3.4 to reflect modifications to the Boron Thermal Regeneration system performed under MRF 21511. This change did not involve any unreviewed safety questions.
FSAR RN 99-076	This change to the FSAR revised Section 3.8.1.3.1.2 to properly define minimum temperature used for Reactor Building structure thermal gradient calculations. This change did not involve any unreviewed safety questions.
FSAR RN 99-077	This change to the FSAR revised Table 6.2-53 to reflect the correct asbuilt "pipe length to valve" dimensions for penetrations 201, 209, 210, 219, and 224. This change did not involve any unreviewed safety questions.
FSAR RN 99-078	This change to the FSAR revised Table 6.2-54 to correct the as-built valve type, power failure position, and the number of solenoid valves for the MSIV's and MS PORV's. This change did not involve any unreviewed safety questions.
FSAR RN 99-079	This change to the FSAR revised Section 8.3.1.1.4(4) to delete "120 ohm Nickel RTDs" as potentially being used in some 6900V ESF motors. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 99-081	This change to the FSAR revised Section 7.3.1.2.6 to eliminate confusing definition of allowable time delays for loss of coolant protection actuation signals. This change did not involve any unreviewed safety questions.
FSAR RN 99-082	This change to the FSAR revised Section 3.8.1.3.1.2 to properly show the minimum adjacent building temperature to 65 degrees F. This change did not involve any unreviewed safety questions.
FSAR RN 99-083	This change to the FSAR revised Tables 8F-1 and 8F-2 to properly reflect the Safety Injection valve reaction times from 22 seconds to 27 seconds. This change did not involve any unreviewed safety questions.
FSAR RN 99-084	This change to the FSAR revised Table 9.3-1 and Figures 9.3-3 and 9.3-3A to correctly show the compressors scfm and horsepower ratings, along with correcting the system data for flow stream number 1 in the Reactor Building Instrument Air system. This change did not involve any unreviewed safety questions.
FSAR RN 99-085	This change to the FSAR revised Sections 7.7 (TOC) and 7.7.1.10, Table 7.7-2, and Figures 7.7-10, 7.7-11, 7.7-12, and 7.7-13 to delete extraneous detail concerning the Boron Concentration Measuring system since the system is not a control system affecting plant safety. This change did not involve any unreviewed safety questions.
FSAR RN 99-086	This change to the FSAR revised Figures 8G-2 and 8G-10 to update the drawings to the latest revision. This change did not involve any unreviewed safety questions.
FSAR RN 99-087	This change to the FSAR revised Sections 8.0 (TOC), 8.3.1.1.1 and Appendix 8D to reflect deletion of Table 8D-1 and changed all references to calculation DC-08200-001. This change did not involve any unreviewed safety questions.
FSAR RN 99-089 NCN 990483	This change to the FSAR revised Section 6.3.2.2.7 to reflect the addition of stem mounted limit switches on the RHR loop suction valves and corrected the flood level, as evaluated under NCN 990483. This change did not involve any unreviewed safety questions.
FSAR RN 99-090 MRF 22594	This change to the FSAR revised Figure 9.2-7 to reflect instrumentation details for valves XVG09684A, B, C-CC (RCP Seal cooling) installed under MRF 22594. This change did not involve any unreviewed safety questions.
FSAR RN 99-091	This change to the FSAR revised Section 5.2.2.4 and Table 5.2-7a to properly reflect the IST test requirements for check valves XVC-8379, 8346, 8378, and 8347. This change did not involve any unreviewed safety

questions.

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Identification No.	Description
FSAR RN 99-092 MCN 34428A	This change to the FSAR revised Section 3.10 and Figures 9.3-6 and 9.3-7 to reflect modifications made to the Auxiliary Building Leak Detection system performed under MCN 34428A. This change did not involve any unreviewed safety questions.
FSAR RN 99-096 ECR 50056	This change to the FSAR revised Table 3.2-1 and Figure 9.2-2 to show that the 'A' Train Diesel Generator Heat Exchangers have been replaced with ASME Section VIII heat exchangers installed under ECR 50056. This change did not involve any unreviewed safety questions.
FSAR RN 99-098 NCN 5317	This change to the FSAR revised Sections 6.6, 9.4 and Table 11.3-9a to incorporate changes, identified in NCN 5317 and approved in Technical Specification Amendment 131, to the Control Building and Fuel Handling Building charcoal absorbers. This change did not involve any unreviewed safety questions.
FSAR RN 99-099	This change to the FSAR revised Figure 9.2-5 to reflect the current revision of this drawing. This change did not involve any unreviewed safety questions.
FSAR RN 99-100 NCN 990964	This change to the FSAR revised Figure 9.5-1 to reflect that the Reactor Building Fire Service supply valve XVG06770-FS is normally closed, as identified in NCN 990964. This change did not involve any unreviewed safety questions.
FSAR RN 99-105 ECR 50088A	This change to the FSAR revised Sections 6.3.2.2.6.1 and 6.2.6.3.1, Table 6.2-53a, and Figure 6.3-1 to reflect the addition of a bonnet relief, installed under ECR 50088A, to XVG08889-SI to prevent potential pressure locking conditions. This change did not involve any unreviewed safety questions.
FSAR RN 99-111	This change to the FSAR revised Table 9.2-12 to correct the as-built data for the CCW system pumps, heat exchangers, and surge tank. This change did not involve any unreviewed safety questions.
FSAR RN 99-113	This change to the FSAR revised Tables 9.2-3 through 9.2-10 to reflect the as-built CCW conditions. This change did not involve any unreviewed safety questions.
FSAR RN 99-118	This change to the FSAR revised Section 10.4.6.1 to include actual design basis purity limits for Condensate Polisher effluent chemistry. This change did not involve any unreviewed safety questions.
FSAR RN 99-130 NSAL 97-003	This change to the FSAR revised Section 6.3.2.15 to clarify operation of the Safety Injection Accumulator isolation valves and bypasses, as identified in Westinghouse NSAL 97-003. This change did not involve any unreviewed safety questions.

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Identification No.	Description
FSAR RN 99-138	This change to the FSAR revised Section 8.3.2.1.3 to reflect the updated load profiles for the safety-related station batteries. This change did not involve any unreviewed safety questions.
FSAR RN 99-139	This change to the FSAR revised Sections 15.3 and 15.4 and Table 15.3-2 to reflect updates to the LOCA analysis. This change did not involve any unreviewed safety questions.
FSAR RN 99-140	This change to the FSAR revised Appendix 3A, Page 3A-60, to describe the VCSNS position associated with conformance to RG 1.100. This change did not involve any unreviewed safety questions.
FSAR RN 99-141	This change to the FSAR revised Section 4.2.3.2.1.3 to reflect the cycle 12 core reload and the removal of secondary neutron sources from the core. This change did not involve any unreviewed safety questions.
FSAR RN 99-151	This change to the FSAR revised Table 6.3-1 to update ECCS Accumulator operating temperature range. This change did not involve any unreviewed safety questions.
FSAR RN 99-155 MRF 22423	This change to the FSAR revised Sections 2.4.8.2, 2.4.11.5, 2.5.6.1, 3.1.2.1, 9.2.1.3, 9.2.5.2, and 9.2.5.3.3.2, and Figures 1.2-23, 2.4-12, and 10.4-5 to reflect the addition of a butterfly isolation valve between the Monticello reservoir and the Service Water Pond, as well as the chemical treatment system for the Service Water Pond, installed under MRF 22423. This change did not involve any unreviewed safety questions.
FSAR RN 99-156 MCN 22423A	This change to the FSAR revised Figure 9.5-1 to reflect the addition of a permanent post indicating Fire Service valve, installed under MCN 22423A, allowing temporary Fire Service to be connected to the underground fire main. This change did not involve any unreviewed safety questions.
FSAR RN 99-159	This change to the FSAR revised Sections 12.3.2.3.2 and 12.3.2.3.3 to clearly address Radiation Work Permit requirements for positive control of High Radiation Areas (>100 mr/hr and <1000 mr/hr). This change did not involve any unreviewed safety questions.
FSAR RN 99-163	This change to the FSAR revised Sections 12.3.1.2 and 12.3.2.1.1 and Table 12.3-2 to delete references to TLD reader and accurately reflect the Health Physics program changes at VCSNS. This change did not involve any unreviewed safety questions.
FSAR RN 99-165	This change to the FSAR revised Section 12.3.2.3.7 to reflect changes to the RWP/SRWP software and actual practices at VCSNS. This change did not involve any unreviewed safety questions.

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Identification No.	<u>Description</u>
FSAR RN 99-171	This change to the FSAR revised Section 9.4.6.2.2 to reflect that the air handling units for the CCCW Pump Speed Switch rooms are not equipped with expansion cooling coils. This change did not involve any unreviewed safety questions.
FSAR RN 99-172	This change to the FSAR revised Figures 8.3-0b and 8.3-5 to reflect revisions conducted on their source drawings. This change did not involve any unreviewed safety questions.
FSAR RN 99-173	This change to the FSAR revised Sections 6.2.2.3.1.1 and 6.2.7 to show Reactor Building Spray Pump available NPSH, NPSH margins, and preoperational test results. This change did not involve any unreviewed safety questions.
FSAR RN 99-174	This change to the FSAR revised Tables 6.3-1 and 6.3-2 to delete the pressure relief disc leakage limit and update motor-operated valve stroke times. This change did not involve any unreviewed safety questions.
FSAR RN 99-178	This change to the FSAR revised Table 9.5-3 to include the results of design calculation DC06610-008, Determination of Excess Heat Removal Capability of Diesel Generator Cooling System. This change did not involve any unreviewed safety questions.
GOP-5, Rev. 10	This change revised the General Operating Procedure to make shutdown margin consistent with STP-134.001, ensure a shutdown margin verification is performed, and direct the use of Pressurizer Back-Up Heaters to induce spray. This change did not involve any unreviewed safety questions.
GTP-702, Rev 11B	This change to the General Test Procedure reworded the requirement to calibrate the High Flux at Shutdown alarm to eliminate the need to perform this calibration "immediately" upon plant shutdown. This change did not involve any unreviewed safety questions.
Helium Troubleshooting Plan	This trouble shooting plan injected helium into the condenser and extraction steam lines in an attempt to evaluate the condition of the expansion joints. This change did not involve any unreviewed safety questions.
MCN 22393A	This change to the facility provided for nitrogen sparging of the CST. This change did not involve any unreviewed safety questions.
MRF 20951E	This change to the facility installed a portion of the new fire detection and control system which supports primarily the operation of fire protection devices located in various areas of the plant. This change did not involve any unreviewed safety questions.

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Identification No.	Description
MRF 20951F	This change to the facility removes components of the old fire protections system which has been replaced by the Simplex fire detection system upgrade. This change did not involve any unreviewed safety questions.
MRF 22423A	This change to the facility provided temporary backup fire suppression supply during isolation of the main fire service pumps while an isolation valve was installed in the Circulating Water/Service Water cross-connect line. This change did not involve any unreviewed safety questions.
MRF 22553E	This change to the facility installed advanced areo design high pressure turbine and steam path components and made modifications to the turbine casing. This change did not involve any unreviewed safety questions.
MRF 22553G	This change to the facility provides HP turbine controls to support HP turbine replacement as well as replacing Main Control Board Turbine Panel Throttle Pressure and Intermediate Pressure indicators. This change did not involve any unreviewed safety questions.
MRF 22553I	This change to the facility provides new scaling and setpoints for various instruments to allow operation within technical specifications and existing accident analyses subsequent to the HP turbine rotor replacement. This change did not involve any unreviewed safety questions.
NCN 990504 Disposition # 1	This change to the facility removed the reference pin and stop pin from fuel assembly M-24 hold down spring assembly. This change did not involve any unreviewed safety questions.
PSP - Amendment 42	This change to the Physical Security Plan revised commitments to reflect corresponding changes in regulatory requirements. This amendment did not decrease the effectiveness of the safeguards plan.
PSP - Amendment 43	This change to the Physical Security Plan allows qualified personnel to search and seal containers outside of the Protected Area. This amendment did not decrease the effectiveness of the safeguards plan.
PSP - Amendment 44	This change to the Physical Security Plan provides contingency plans for a total failure of the security system computer. This amendment did not decrease the effectiveness of the safeguards plan.
SAP-1169, Rev. 2	This change to the Station Administrative Procedure incorporated the responsibilities of the PRA team into the procedure. This change did not involve any unreviewed safety questions.

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Identification No.	<u>Description</u>
SAP-364, Rev. 0	This change created a new Station Administrative Procedure for the control of temporary cables. This change did not involve any unreviewed safety questions.
SOP-106, Rev. 8F	This change to the system operating procedure allows for boration of the Reactor Coolant system through valves FCV00113A and B with the controller in manual. This change did not involve any unreviewed safety questions.
STP-205.002, Rev. 8	This change to the surveillance test procedure allows the use of the Leading Edge Flow Meter to measure feedwater flow and temperature as opposed to the use of venturi dp transmitters and RTD temperature elements. This change did not involve any unreviewed safety questions.
STP-230.006A, Rev. 3A	This restricted change to the surveillance test procedure provided for post maintenance testing of pump XPP-0043C (CHG/SI Pump). This change did not involve any unreviewed safety questions.
Westinghouse Procedure NSD 2073, Rev. 5	This change to the vendor procedure allows the vendor to obtain a CRUD sample from irradiated fuel and ship it offsite. This change did not involve any unreviewed safety questions.
WO - 9919193	This change allowed the temporary installation of flanges and a blank to isolate leakage past valve XVT0167-FS. This change did not involve any unreviewed safety questions.

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ABBREVIATIONS and ACRONYMS

AMSAC ATWS Mitigation System Actuation Circuitry

ANSI American National Standards Institute
ARP Annunciator Response Procedure

ASME American Society of Mechanical Engineers

ATWS Anticipated Transient Without Scram

BAR Bypass Authorization Request

CBA Cost Benefit Analysis
CCW Component Cooling Water

CHG Charging

CNSI Chem-Nuclear Services Incorporated

CP Chemistry Procedure

CRUD Chalk River Unknown Deposit
CST Condensate Storage Tank

CTO Caution Tag Out dp Differential Pressure

EA Environmental Assurance System
ECCS Emergency Core Cooling System
ECR Engineering Change Request
EFW Emergency Feed Water

ESF Emergency Safeguards Features

ETBT Equal To / Better Than

FO Field Operating procedure (CNSI)
FPER Fire Protection Evaluation Report
FSAR Final Safety Analysis Report
GOP General Operating Procedure

GPM Gallons per minute
GTP General Test Procedure

HP High Pressure

HVAC Heating Ventilation and Air Conditioning

IA Instrument Air
IB Intermediate Building
I&C Instrumentation and Control
LOCA Loss of Coolant Accident

MCN Minor Change Notification (to a Modification Request Form)

MRF Modification Request Form

MS Main Steam

MSIV Main Steam Isolation Valve

NaOH Sodium Hydroxide

NCN Non-Conformance Notification
NPSH Net Positive Suction Head

NSAL Nuclear Safety Advisory Letter (from Westinghouse)

NSD Nuclear Safety Division (Westinghouse)

PIP Problem Identification Program
PORV Power Operated Relief Valve
PRA Probabilistic Risk Assessment

PSP Physical Security Plan
QA Quality Assurance
RB Reactor Building
RCP Reactor Coolant Pump

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ABBREVIATIONS and ACRONYMS

RCS Reactor Coolant System

REP Reactor Engineering Procedure

Rev Revision

RG Regulatory Guide
RHR Residual Heat Removal

RN Revision Notice

RTD Resistance Temperature Detector

RWP Radiation Work Permit

SAP Station Administrative Procedure

SI Safety Injection

SOP Standard Operating Procedure
SPCR Set Point Change Request
SRWP Standing Radiation Work Permit
STP Surveillance Test Procedure

TDEFWP Turbine Driven Emergency Feed Water Pump

TLD Thermal Luminescent Dosimeter

TYPO Typographical error

VCSNS Virgil C. Summer Nuclear Station

WO Work Order