PSEG Nuclear LLC
P O Box 236, Hancocks Bridge, New Jersey 08038-0236

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REPORT OF CHANGES, TESTS AND EXPERIMENTS
SALEM GENERATING STATION, UNITS 1 AND 2
DOCKET NOs. 50-272 AND 50-311

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, 2001 through February 28, 2003. This report includes changes reviewed either in accordance with the three criteria of 10CFR50.59(a)(2) which were in effect prior to March 13, 2001, or the eight criteria of 10CFR50.50(c)(2) subsequent to that date.

Should you have any questions, please contact Carl Berger at (856) 339-1432.

Sincerely,

G. Salamon
Manager Nuclear Safety and Licensing

CLB
Attachments (3)

IE47

Attachment 1
LR-N03-0115

SUMMARY OF CHANGES TESTS AND EXPERIMENTS COMMON TO SALEM UNITS 1 AND 2

DESIGN CHANGES

80004814, 80004831, & 80005320, Deletion of RMS Process Filter & Waste Gas Decay Tank Chanels (50.59 Evaluation S00-007)
This modification deleted Unit I and Unit 2 Process Filter area radiation monitoring channels and a Unit 2 Waste Gas Decay Tank monitor. Radiation monitors were originally provided near the liquid process filters to determine when the filters should be replaced, based upon dose rate. Although Maintenance performs calibration and corrective maintenance on these channels, they are not used. Filter change-out is normally initiated due to high filter dP or from routine surveys by Radiation Protection.

The subject Waste Gas Decay Tank Radiation Monitor does not exist in Unit 1. Although Maintenance is calibrating and maintaining these channels, they are also not normally used. Radiation Protection will administratively control access to the Unit 2 Waste Decay Tank Room using the same process as is practiced in Unit 1.

None of the channels serve safety functions, nor are they used in EOPs or required for Reg. Guide 1.97; they will not cause a plant trip or transient and provide no control function. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80008234, Rev. 0, Installation of BEACON (Best Estimate Analyzer for Core Operations Nuclear) (50.59 Evaluation S00-023)
This modification added a Best Estimate Analysis Core Operations Nuclear (BEACON) power distribution monitoring system and Plant Historian System. BEACON receives data from the existing plant process computer and performs online power distribution calculations, allowing increased plant safety through improved reactivity monitoring. The Plant Historian System is a data warehousing business application, which provides improved access to plant process data.

The change does not impact safety-related equipment or equipment important-to-safety. This modification does not create any new failure modes, since the failure modes considered applicable are within the existing design basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80008507 & 80008741, PORV Control Circuit Modification (50.59 Evaluation S00-049, S00-027)
This modification adds interposing relays in the PORV control circuits to prevent inadvertent opening due to a fire-induced internal cable short. The same postulated

fire might also disable the associated PORV block valve in its normally open position, resulting in an uncontrolled loss of RCS inventory.

The use of a permissive in the valve open seal-in control circuit also restores the Pressurizer Overpressure Protection System (POPS) operation to its original design intent and eliminates the need to place the PORV in AUTO when POPS is in service. PORV operation is otherwise unaffected.

This modification does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80010402 and 80010403, Rev. 2, Installation of Crossflow Meters for Flow Nozzle Corrections, (50.59 Evaluation S00-039)
UFSAR section 15.14 states that feedwater flow instrumentation used for the calorimetric has accuracy tolerances much higher than for normal feedwater flow control. However, nozzle fouling affects the accuracy of measured flow. This modification adds correction factors to the feedwater flow nozzle indicated flows used for the online calorimetric procedure so that operation may be maintained at 100% rated power. The change maintains calorimetric uncertainty within 2% and the flow measurement accuracy is within 1.25%.

The modification does not increase the probability or consequences of an accident previously evaluated in the SAR, does not increase the probability of occurrence or consequences of a malfunction of equipment important to safely previously evaluated in the SAR, and does not create the possibility of an accident or malfunction of a different type from any previously evaluated in the SAR. The change does not reduce the margin of safety as defined in the basis for any Technical Specifications. Therefore, no Unreviewed Safety Question is involved.

80008573 and 80008505, 4KV/125VDC Control Circuits Modification (50.59 Evaluation S00-050, S00-025)
This modification replaces the 2-pole 125V DC control circuit breaker for each vital 4kV circuit breaker with a 3-pole breaker. The third pole will interpose the neutral branch of the 4kV breaker trip and close coils. This change precludes the possibility of fire-induced shorts or grounds from spuriously operating any 4kV circuit breaker while bypassing local operator control.

This modification does not alter the function of any vital 4kV circuit breaker and maintains the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

SUMMARY OF CHANGES TESTS AND EXPERIMENTS COMMON TO SALEM UNITS 1 AND 2

80021000 Rev.0, 80022591 Rev. 0, 8002259 Rev 0, 80022593 Rev. 0, and 80022594 Rev. 0, Heater Drain Pump Piping Modifications (50.59 Evaluation S01-003)

The modifications replace three pipelines associated with the Salem Heater Drain Pumps with flexible jacketed hose and remove a Miscellaneous Condensate (MC) gauge from four of the pumps. This allows the lines to be disconnected and removed when needed, saving a great deal of time and effort.

The design of these features is to supply adequate seal flow and seal cooling from the MC System and Turbine Auxiliaries Cooling (TAC) System respectively. The flexible hose does not change the flow characteristics of the system.

There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80021213, 80021214, Increase Setpoint of Feedwater Thermal Relief Valves (50.59 Evaluation S01-004)

This modification replaces the feedwater system thermal relief valves (PSV's) which are presently set for 1350 psig with new thermal relief valves set at 1620 psig. The previous relief valves had "soft" seats which are prone to failure and have a history of not reseating. The new relief valves have more reliable metal seats.

The relief valves protect the feedwater piping from over pressurization due to thermal effects. The higher pressure setpoint of 1620 is permitted by the B31.1 piping code – 1967, which states that it is allowable to exceed the pipe stress by 20% for 1% of the operating period. Since these plant transient events occur very infrequently, advantage is being taken of the higher allowable set pressure afforded by the code. The relieving flow capacity of the replacement relief valves is identical to the relieving flow capacity of original relief valves.

This modification does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80018460, 80017961, Feed Water Heater Pressure Equalizing Line Orifice Resizing (50.59 Evaluation S01-013)

This modification resized the orifice in the pressure equalizing line connecting the fifth stage Feedwater Heaters (FWH) to their associated Heater Drain Tanks (HDT). Since the HDT is at a higher pressure than the FWH, the line allows pressure equalization to occur between the two vessels, thus permitting proper drainage. The

resized orifice ensures pressure equalizes more quickly, avoiding sudden high levels in the FWH string which automatically isolate the FWH, resulting in low Steam Generator Feed Pump suction pressure.

This modification does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80030170, Rev. 1 & 2, Hot shutdown Panel Cross-tie (50.59 Evaluation S01-017)
Revalidation of the Post Fire Safe Shutdown analysis for Units 1 & 2 determined that a potential fire in certain areas could cause a loss of AC power to the Hot Shutdown (HSD) Panel. This modification provides for an alternate electrical feed to the HSD panel from the opposite unit by means of an electrical cross-tie. The HSD Panel is required in case of a Control Room evacuation due to inaccessibility. If the operator must leave the Control Room, operating procedures require that he trip the reactor and turbine generator prior to leaving, thus ensuring control at the hot shutdown control stations.

Two new transfer breakers will be installed, allowing the HSD circuits to be energized from either unit. The cross feed between units is achieved with manual operation of a normally open circuit breaker located in each unit in addition to isolation of the normal feed breaker.

The design functions of the HSD panels and power supply inverters are not changed by this modification. No change in Technical Specifications is required and there is not more than a minimal increase in the frequency or consequences of an accident or in the likelihood of occurrence or consequences of a malfunction. The modification does not create the possibility of a new accident or malfunction with a different result, design basis limits of fission product barriers are unaffected and the methods of analysis are consistent with the UFSAR. Therefore, the change may be implemented without obtaining a License Amendment.

80029150, Analysis of CVCS Cross-Tie, (50.59 Evaluation S2002-001)

The Chemical Volume Control System (CVCS) Positive Displacement Charging Pumps (PDP) for each Salem Unit have been previously removed from normal charging service and are under administrative control of Operations. Revalidation of the post fire safe shutdown analysis has resulted in installing a cross-tie between the Salem Units to allow use of the PDP during fires.

The pumps remain isolated from their own unit's ESF recirculation flow path but are available to provide reactivity management, RCP seal injection and RCS make-up for normal cooldown to the other unit during Post Fire Safe Shutdown evolutions. This evaluates use of the cross-ties only for a Post Fire Safe Shutdown scenario and

normal charging in the operating unit during modes 5-6, and does not address using the PDP for power operation or UFSAR Chapter 15 accidents.

The Technical Specifications will govern the operating unit. This 50.59 evaluation demonstrates that the cross-tie modifications will not impair the ability to support the operating unit's continued power operation, safety functions or orderly shutdown, even when supporting a safe shutdown of the opposite unit.

No change in Technical Specifications is required and there is not more than a minimal increase in the frequency or consequences of an accident or in the likelihood of occurrence or consequences of a malfunction. The modification does not create the possibility of a new accident or malfunction with a different result, design basis limits of fission product barriers are unaffected and the methods of analysis are consistent with the UFSAR. Therefore, the change may be implemented without obtaining a License Amendment.

ENGINEERING CALCULATIONS

DS1.8-0062, Rev. 0, Mode 3 Steam Line Break (50.59 Evaluation S01-001)

This recalculation of a Steam Line Break (SLB) event results in an addition to the UFSAR describing the bounded Mode 3 scenarios. The SLB event is only analyzed at the top end of Mode 3 up through Mode 1 and bounds SLBs initiated from all other initial conditions. An evaluation was performed to demonstrate that this is indeed the case for the Salem Units.

This calculation does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this calculation does not represent an Unreviewed Safety Question.

S-C-SW-MDC-1351, NPSH for Salem Service Water System Pumps, (50.59 Evaluation S01-002)

This calculation revises the description of the Service Water pump Net positive Suction Head (NPSH) provided in the UFSAR. The computation of available net positive suction head was made for licensing basis conditions which meet the guidance of Regulatory Guide 1.1. The values previously listed in the UFSAR were not consistent with current evaluations.

The calculation does not increase the probability or consequences of an accident previously evaluated in the SAR, it does not increase the probability of occurrence or the consequences of a malfunction of equipment important to safety previously evaluated in the SAR, it does not create the possibility of an accident or malfunction of a different type from any previously evaluated in the SAR, and it does not reduce

the margin of safety as defined in the basis for any Technical Specifications; therefore, the calculation does not involve an unreviewed safety question.

S-C-EDG-MEE-1623, Salem EDG Operability with Outside Hatch Open, (50.59 Evaluation S2002-005)

Each of three separate emergency diesel generator (EDG) rooms contains a 3' x 3' equipment hatch in the exterior wall of the building. During normal operations, the EDG hatch covers are bolted in place and sealed. However, during outage periods, the hatches can be opened to facilitate maintenance. Since Technical Specifications require two EDGs to be operable at all times during Reactor Operating Modes 5 and 6, past activities have been limited to opening hatches only when the associated EDG is already inoperable for other reasons. This evaluation removes that restriction.

The hatch covers are part of the EDG rooms' protective envelope to protect from various natural phenomena such as external flooding, earthquakes and tornado missiles. They also support fire protection, room temperature control and physical security. This Engineering Evaluation concludes required support functions remain operable with the EDG hatches open. Hence, the associated EDGs remain operable because all support functions are capable of being performed with the hatch covers removed.

No change in Technical Specifications is required and there is not more than a minimal increase in the frequency or consequences of an accident or in the likelihood of occurrence or consequences of a malfunction. The analysis does not create the possibility of a new accident or malfunction with a different result, design basis limits of fission product barriers are unaffected and the methods of analysis are consistent with the UFSAR. Therefore, the change may be implemented without obtaining a License Amendment.

UFSAR CHANGES

SCN 01-010, Spent Fuel Pool Demineralizer Resin Types (50.59 Evaluation S01-007)

The resin type for use in the Spent Fuel Pool (SFP) Demineralizers currently specifies "anion and cation" resins. The revised text allows for use of "Approved Nuclear Grade" resins. This revision allows for more flexibility in the resin loading of the vessel in order to optimize control of chemical and radioactive contaminants. Second, the stated "Minimum D/F" value is deleted from the SFP Demineralizer description. This is not a design requirement, and may cause operational confusion due to the general nature of the description.

**SUMMARY OF CHANGES TESTS AND EXPERIMENTS
COMMON TO SALEM UNITS 1 AND 2**

The design bases described in this section states that a secondary function of the SFP Cooling System "is to clarity and purify spent fuel pool, transfer pool, and refueling water.

These design bases and functions are unaffected by the revision. No credit is taken for the performance of the demineralizers either as an accident initiator or mitigator. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this UFSAR change does not represent an Unreviewed Safety Question.

SCN 01-008, Use of Maximum 3.5-ppm Lithium Concentration in RCS, (50.59 Evaluation S01-016)
This UFSAR change documents reviews in support of increasing the Reactor Coolant lithium concentration limit from 2.35 ppm to 3.5 ppm as discussed by the EPRI PWR Primary Chemistry Guidelines. This change allows for improved controls of the Reactor Coolant pH as described in the Strategic Chemistry Plan and in Engineering Evaluation, Salem Reactor Coolant Lithium Control Program.

This change does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

PROCEDURES

S1(2).OP-SO.ABV-0001(Q) Rev. 13/14; SH.OP-AP.ZZ-0107(Q) REV. 2, Auxiliary Building Ventilation System Operation (50.59 Evaluation S01-006)
This procedure revision removes a precaution and limitation statement from the Auxiliary Building Ventilation Normal Operating Procedure requiring an Operator to be available to monitor Auxiliary Building Ventilation System Status. The requirement was added in 1997 in response to a design bases concern regarding auxiliary building ventilation fan status following a blackout accident condition.

Resolution of the above design issue was accomplished by administratively disabling one supply fan, which is now detailed in the technical specifications. Operator action is required to ensure the minimum complement of one supply and two exhaust fans are available following a failure which disables the running supply fan.

The original precaution requiring the watch-bill position was conservative. Two hours are available to restore proper ABV configuration following accident initiation, which can be accomplished by the Operations Support Center (OSC).

**SUMMARY OF CHANGES TESTS AND EXPERIMENTS
COMMON TO SALEM UNITS 1 AND 2**

This procedure change does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this revision does not represent an Unreviewed Safety Question.

SC.MD.FR.CBV-0001(Q), Containment Cooling During Refueling, (50.59 Evaluation S01-012)
This procedure provides additional cooling for the containment building during Salem refueling outages. Two packaged chiller units will be located outside the containment building and connected to the Service Water System (SWS) valves of two Containment Fan Coil Units (CFCUs) via temporary rubber hose and temporary three way valves.

Implementation of this procedure will ensure that the remainder of the SWS header (unused portion) and the other SWS header will continue to function in accordance with its existing design and licensing bases.

There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

S1/2.CC-SP.FP-0001(Q), Rev. 0, Switchgear and Penetration Areas CO_2 Discharge Determination Test (50.59 Evaluations S2002-003 and S2002-004)
Testing determined the amount of CO_2 required to be discharged to the 4160V Switchgear Room and the Electrical Penetration Area in order to meet the concentration and retention time required by National Fire Protection Association (NFPA). In order to perform the tests, the 4160V Switchgear Room was isolated and a tracer gas discharged to the room to simulate a CO_2 injection while the remainder of the Switchgear and Penetration Area Ventilation System (SPAV) system is in a CO_2 actuation alignment. In another test, the Electrical Penetration Area was likewise isolated and tracer gas discharged while the SPAV system remains in its normal alignment.

All areas served by the SPAV were maintained within design basis temperature limitations and system alignments as identified in the UFSAR, except for a portion of the CO_2 system placed in manual. No new accident or failure scenarios are introduced, and no previously analyzed accidents are affected. Technical Specifications are unaffected by this test, design basis limits of fission product barriers remain unaffected, and there is no change to evaluations or analyses as identified in the UFSAR. Therefore it is concluded that prior NRC approval was not required for the test.

Attachment 1
LR-N03-0115

SUMMARY OF CHANGES TESTS AND EXPERIMENTS COMMON TO SALEM UNITS 1 AND 2

SC.OP-PM.SA-0001(Z), Removal of Station Air Compressors from Service for Maintenance, (50.59 Evaluation S2003-001)

This procedure replaces all three Station Air Compressors with temporary compressors and disables an automatic start signal to the Emergency Control Air Compressors (ECAC) in order to perform maintenance work. The Station Air (SA) system is the normal source of air supply to the Control Air (CA) system during normal and abnormal plant conditions. The CA system provides compressed air to both safety and non-safety related pneumatically operated instruments and control valves throughout the plant. The temporary compressors will maintain these functions.

The automatic start signal from opening all three air compressor breakers is being disabled and replaced with manual Operator action. Without any compressor running, air header pressure will eventually decrease to less than 85 psig, causing an automatic ECAC start signal. An automatic start signal on accident conditions remains fully functional. The procedure change does not affect the ability of the safety-related ECACs to perform their safety function once started.

At the end of the maintenance work, Operations will return SA to service and restore the automatic start signal. No change in Technical Specifications is required and there is not more than a minimal increase in the frequency or consequences of an accident or in the likelihood of occurrence or consequences of a malfunction. The analysis does not create the possibility of a new accident or malfunction with a different result, design basis limits of fission product barriers are unaffected and the methods of analysis are consistent with the UFSAR. Therefore, the change may be implemented without obtaining a License Amendment.

Attachment 2
LR-N03-0115

SUMMARY OF CHANGES TESTS AND EXPERIMENTS
SALEM UNIT 1

DESIGN CHANGES

80014605, Rev. 0, Midloop Transmitter Replacement Project (50.59 Evaluation S00-074)
The purpose of this modification is to relocate a toggle switch, level transmitters and associated calibration volume chambers to mitigate the effects of non-condensable gases on the tubing during vacuum fill. The function, operation and overall design of the Midloop operation will be enhanced with the addition of an isolation valve in the RCS Sampling line. This will allow isolation of the RCS Sampling and make the Midloop tubing run short and easy to vent during Midloop operation.

This modification does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80015439 Rev. 0, Installation of a by-pass line and valve in Service Water (50.59 Evaluation S00-075)
The modification installs a by-pass line and valve around the service water discharge pressure control valve for the main turbine lube oil coolers and steam generator feed pump (SGFP) and turbine lube oil coolers. The by-pass line is six inches and incorporates a valve that will allow manual throttling in the event of a control valve failure during normal operations.

There is no safety or important to safety related equipment affected by this modification. This modification does not increases the probability or consequences of an accident previously evaluated in the SAR. The modification does not increase the possibility of an accident or a malfunction of a different type from any previously evaluated in the SAR. Therefore, this modification has no impact on safety and there are no Unreviewed Safety Questions.

80015206, Providing Containment Ventilation Isolation from Radiation Monitoring During Testing (50.59 Evaluation S01-010)
This Design Change consists of modifying the Solid State Protection system by permanently wiring in the three associated relays and hardware that were installed under a previous DCP. The new circuits will continue to mimic those currently in place that provide for Containment Purge and Pressure/Vacuum Relief Isolation from a Containment Ventilation Isolation signal. This modification will maintain RMS automatic and manual actuation of the Containment Ventilation Isolation system terminating the Purge and Pressure/Vacuum Relief system with both trains of SSPS in test or out of service. These circuit changes are required in order to comply with Tech Specs whenever both trains of SSPS

are in test or out of service (applicable during modes 5 and 6 only). This Design Change will also satisfy TS requirements for providing alarm and automatic termination of release during Containment Purge and Pressure/Vacuum Relief operation.

Switches were also added to each train of SSPS to maintain the Source Range Nuclear Instrumentation channels operable without lifting leads or installing jumpers. The mod will therefore allow Containment Purge and Pressure/Vacuum Relief operations to be performed while dual SSPS Train testing is in progress, permit complete testing of the SSPS trains and eliminate the human error concerns associated with lifting leads and installing jumpers.

The function and operation of the Containment Ventilation Isolation Purge and Pressure/Vacuum Relief system have not changed, nor has this modification altered the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80013936, Rev. 0, Main Turbine Lube Oil Evactor Suction Piping Modification, (50.59 Evaluation S01-011)
The Main Turbine Lube Oil (MTLO) evactors establish the vacuum in the MTLO Reservoir. At normal full vacuum on the reservoir, oil must be emptied 3-4 times per shift, requiring two operators to manipulate two valves simultaneously.

This modification relocates the suction for the evactors and provides a new isolation valve to permit oil reclamation activities to be performed by one operator. A new check valve prevents backflow of oil if the valve manipulation is not performed in the same timeframe. Existing motors on the MTLO Seal Oil Cooler Filters are replaced with manual cranks.

The modification does not affect operation of the system or the system design basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

T-Mod 01- 007, Installation of Temporary Support and Blind Flanges for Service Water Spool Removal (50.59 Evaluation S01-014)
This temporary plant modification (T-Mod) installed a pipe support and blind flanges on a temporary basis to allow Service Water (SW) Bay 3 to remain operable while SW pipe spools were removed. The T-Mod changes have been evaluated and found to be acceptable. The support, blind flanges and operable

piping system are all within their applicable design specification, allowable or Code requirement.

This temporary modification does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

80034979, Steam Generator Snubber Elimination
(50.59 Evaluation S02-006)
All of the steam generator snubbers at Salem Unit 1 have been deactivated. Two on each steam generator have been removed, and the other two were converted to rigid compression struts using collars clamped to the snubber bodies.

Non-linear, time history seismic and pipe break analyses have been performed, incorporating the revised configuration. The use of non-linear time history analysis is a change in the method of evaluation for the structural evaluation of the Salem reactor coolant system. However, this methodology has been previously reviewed and approved by the NRC for similar evaluations at other plants involving the elimination of steam generator snubbers.
The revised design will continue to resist loads at the steam generator upper supports and unrestrained thermal movement of the reactor coolant loops is maintained. From the results of the reanalysis, stresses in the affected components, piping, and associated supports have been shown to meet the appropriate allowable limits. The application of leak-before-break to the reactor coolant loop piping has been verified.

There is not more than a minimal increase in the frequency or consequences of an accident or in the likelihood of occurrence or consequences of a malfunction. The analysis does not create the possibility of a new accident or malfunction with a different result, design basis limits of fission product barriers are unaffected and the methods of analysis are consistent with the UFSAR. Therefore, the change may be implemented without obtaining a License Amendment.

ENGINEERING CALCULATIONS

DS1.8-0064, Rev. 1, Salem U1 Cycle 15 Reload Safety Evaluation for Operation in All Modes (50.59 Evaluation 01-009)
The Salem Unit 1 Cycle 15 refueling will change the reactor core configuration. This Reload Safety Evaluation was based on the current rated thermal power of 3411 MWt. Uprated power of 3459 MWt was analyzed for the core design, contingent upon NRC approval of LCR S00-06 (Amendments 243 and 224). All

applicable core design criteria were met for both uprated and current power conditions.

Based upon failed fuel found during refueling, a core redesign was necessary. In addition, this incorporates a design change in the length of the annular axial blanket fuel pellet, the Low Rod Internal Pressure Fuel Rod (ZIRLO) design, a change in the top nozzle spring screw material, and implementation of Replacement Reconstitutable Top Nozzles (RRTN) on irradiated fuel assemblies.

Operation of the Salem Unit 1 Cycle 15 core design in all MODES has been analyzed in accordance with Westinghouse's, NRC approved, Reload Safety Evaluation Methodology. It is concluded that the core reload design satisfies the acceptable safety limits for each accident and meets all applicable design licensing basis acceptance criteria. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this calculation does not represent an Unreviewed Safety Question.

DS1.8-0065, Salem U1 Loose Parts Evaluation (50.59 Evaluation S01-015)
A foreign object similar to a washer or grommet was observed lying on the lower core plate during refueling operations for Salem Unit 1 Cycle 15. This object could not be recovered hence is being evaluated as a loose part in the primary system. Based on this analysis, it has been determined that there are no effects on any of the associated systems, structures or components important to safety with the following exceptions.

In the unlikely event this object wears or breaks down it could pass through the small flow hole in the assembly bottom nozzle and lodge between the fuel rods and bottom grid, resulting in potential fuel rod fretting failures. A conservative assumption is that in the worst-case scenario, all four fuel rods around a trapped piece of metallic debris could possibly fail, which would be detected by routine monitoring primary coolant activity levels. The potential for up to four pin failures here can result in a small increase in the coolant activity levels which will remain well below both the Technical specification limit and coolant activity levels assumed as an initial condition in the accident analyses that result in radiological releases.

Although highly improbable, a loose part could become lodged inside the control rod drive mechanism and cause the rod to stick. The accident analyses already consider the highest worth control rod struck in the fully withdrawn position and the sticking of two or more rods is not considered a credible event.

Based on the assessment performed, the unrecovered foreign object will not

result in: more than a minimal increase in the frequency of occurrence or consequences of an accident, likelihood of occurrence or consequences of a malfunction of an SSC important to safety, the possibility of an accident of a different type or malfunction of an SSC with a different result than previously evaluated in the UFSAR, exceeding or altering a design basis limit for a fission product barrier, or a departure from a method of evaluation described in the UFSAR used in establishing the design basis or in the safety analyses. Therefore, no license amendment is required.

UFSAR CHANGES
None unique to Salem 1

PROCEDURES
None unique to Salem 1

Attachment 3
LR-N03-0115

SUMMARY OF CHANGES TESTS AND EXPERIMENTS
SALEM UNIT 2

DESIGN CHANGES

80009054 and 80015669, Upgrade Chemistry Secondary Sampling Capability (Safety Evaluation No. S00-047)
This change consists of installing isokinetic sampling nozzles into the Condensate Polisher Influent and effluent, the heater Drain Pump common discharge, steam Generator Feedwater, and Steam Generator Blowdown lines. Sample coolers will be provided and the sample effluent discharged to the Chemical Waste System. Fresh water will be routed to the cooler and returned to the Raw Water Basin for reclamation. A Dissolved Oxygen Sensor will also be installed in close proximity to the Steam Generator Feedwater process sample point.

This modification does not alter the design and licensing basis. There is no increase in the probability or consequences of any accident or malfunction, no new accidents or malfunctions created and the margin of safety is not reduced. Therefore, this modification does not represent an Unreviewed Safety Question.

ENGINEERING CALCULATIONS
None unique to Salem 2

UFSAR CHANGES
None unique to Salem 2

PROCEDURES
None unique to Salem 2