



PSEG

Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038-0236

Nuclear Business Unit

FEB 17 1998

LR-N98078

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

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**MONTHLY OPERATING REPORT
SALEM UNIT NO. 1
DOCKET NO. 50-272**

Gentlemen:

In compliance with Section 6.9.1.6, Reporting Requirements for the Salem Technical Specifications, the original Monthly Operating report for January, 1998, is attached. This report has incorporated format changes to reflect the reporting requirements specified by Generic Letter 97-02.

Sincerely,

A. C. Bakken III
General Manager -
Salem Operations

RBK/rbk
Enclosures

C Mr. H. J. Miller
Regional Administrator USNRC, Region 1
475 Allendale Road
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The power is in your hands.

DOCKET NO.: 50-272
 UNIT: Salem 1
 DATE: 2/15/98
 COMPLETED BY: R. Knieriem
 TELEPHONE: (609) 339-1782

Reporting Period: January 1998

OPERATING DATA REPORT

Design Electrical Rating (MWe-Net)
 Maximum Dependable Capacity (MWe-Net)
 No. of hours reactor was critical
 No. of hours generator was on line (service hours)
 Unit reserve shutdown hours
 Net Electrical Energy (MWH)

1115		
1106		
Month	Year-to-date	Cumulative
0	0	104380
0	0	100388
0	0	0
0	0	100148489

UNIT SHUTDOWNS

NO.	DATE	TYPE F=FORCED S=SCHEDULED	DURATION (HOURS)	REASON (1)	METHOD OF SHUTTING DOWN THE REACTOR (2)	CORRECTIVE ACTION/COMMENT
1	1/1/98 - 1/31/98	F	744	F,C	4	Steam Generator Replacement and Refueling Outage

(1) Reason

- A - Equipment Failure (Explain)
- B - Maintenance or Test
- C - Refueling
- D - Regulatory Restriction
- E - Operator Training/License Examination
- F - Administrative
- G - Operational Error (Explain)
- H - Other

(2) Method

- 1 - Manual
- 2 - Manual Trip/Scram
- 3 - Automatic Trip/Scram
- 4 - Continuation
- 5 - Other (Explain)

Summary:

The unit is in a refueling and a steam generator replacement outage and remained shutdown for the entire period. According to commitments from PSE&G and a subsequent confirmatory action letter from the NRC, the unit will remain shutdown pending completion of the following actions:

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- Appropriately address long standing equipment reliability and operability issues.
- After the work is completed, conduct a restart readiness review to determine for ourselves the ability of the unit to operate in a safe, event free manner.
- After the restart review, meet with the NRC and communicate the results of that review.

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SUMMARY OF CHANGES, TESTS, AND EXPERIMENTS
FOR THE SALEM UNIT 1 GENERATING STATION

MONTH JANUARY 1998

The following items completed during **January 1998** have been evaluated to determine:

1. If the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased; or
2. If a possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report may be created; or
3. If the margin of safety as defined in the basis for any technical specification is reduced.

The 10CFR50.59 Safety Evaluations showed that these items did not create a new safety hazard to the plant nor did they affect the safe shutdown of the reactor. These items did not change the plant effluent releases and did not alter the existing environmental impact. The 10CFR50.59 Safety Evaluations determined that no unreviewed safety or environmental questions are involved.

Design Changes Summary of Safety Evaluations

1EC-3244, Pkg. 1, Radiation Monitoring System (RMS) Channel 1R41 Replacement. This design change deleted RMS channels 1R41 A, B, replaced RMS Channel 1R41C, added two new channels which provide the same functional capability as existing RMS channels 1R45B, C, added particulate and iodine samplers for low-range noble gas monitoring mode of operation, and added particulate and iodine pre-conditioning for intermediate/high range noble gas monitoring mode of operation.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3277, Pkg. 1, Pressure Resistant Barrier Review Project. This modification provided engineering analysis, inspection, maintenance, and programmatic activities to ensure that Moderate Energy Line Break (MELB)

penetration and internal conduit seals meet the appropriate established barrier criteria.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3289, Pkg. 1, Cable Protection. This design change provided protection for various safety-related cables through modifications to the 1E 230/115VAC distribution system trains 1A, 1B, and 1C. These modifications included the replacement of heaters in thermal overload relays, installation of replacement circuit breakers, addition of seismically mounted fuses, and the removal of jumpers from overload relay circuits that were installed on safety-related MOVs.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3292, Pkg. 2, 12 Component Cooling (CCW) Heat Exchanger Control System Upgrade. This design change replaced the existing control system for the Service Water flow control valves for the 12A and 12B CCW heat exchangers with two independent cascade type control systems, one for each valve. This system will position the respective inlet and outlet valves simultaneously with a common control air signal to the valve positioners to provide a more even distribution of pressure drop across both valves. This will reduce uneven pressure drop and the possibility for cavitation damage to the valves.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3311, Pkg. 2, Auxiliary Building Ventilation (ABV) System Air Flow Balancing. This design change performed Auxiliary Building ventilation air flow balancing to meet the requirements of the design basis. In order to perform the flow balancing it was necessary to place the ABV system in an interim configuration that was different than that stated in the SAR. Following completion of the flow balance the ABV system configuration was restored to meet the configuration stated in the SAR.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an

accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3324, Pkg. 6, Containment Isolation Valve Indication and Control Modifications. This design change modified the existing wiring circuit designations, and circuit breaker assignments for the Regulatory Guide 1.97 Containment Isolation valve control and indication circuits.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3330, Pkg. 1, 13 Service Water Pump (1SWE3) Replacement Modification. This design change replaces Service Water pump 1SWE3 with a pump that is manufactured of materials that are more resistant to the corrosive, erosive, and silt laden river water present in the Service Water system.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3332, Pkg. 1, Replacement Of Degraded Piping and Fittings. This modification replaced various carbon steel pipe fittings and pipe segments due to pipe wall thicknesses that were approaching minimum thickness values. The pipe segments and fittings were replaced with carbon steel fittings and pipe, and chrome alloy fittings and pipe that are more resistant to erosion and corrosion. In some applications the existing materials were also replaced by components with increased wall thickness.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3335, Pkg. 1, Volume Control Tank (VCT) Low-Low Setpoint Change From 1" to 2.5". This modification changed the VCT low-low level setpoint and revised the scaling values for the level transmitters to account for instrument uncertainties. This will ensure that adequate net positive suction head is available during swapover of the Charging pump suction from the VCT to the Refueling Water Storage tank during a low level condition in the VCT.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an

accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3361, Pkg. 1, Background Subtraction Performance Upgrade And Declassification Of Post-accident Plant Vent Monitor R45A, B, and C. This modification installed a small .035 uCi Cs-137 keep-alive source in the 1R45A and 1R45D detectors to prevent "low fail" occurrences and nuisance alarms.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3371, Pkg. 1, Condenser Hotwell Controls Upgrade. This modification provided changes to the Condenser Hotwell level control system. Existing instrumentation was replaced on all six hotwells and additional functions were added including the ability to select which hotwell to control condensate flow on, and the ability to remotely control the demineralized water inlet valve. In addition, indication was provided at Control Console 1CC3 and 1RP1 for hotwell level, demineralized water inlet flow, and hotwell overflow flowrate.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3389, Pkg. 2, P-250 Plant Computer Replacement - Computer Installation. This modification replaced the Salem Unit 1 data acquisition plant computer system and associated computer inverter. Package 1 of this modification installed the replacement computer inverter and associated power feeds, but did not place it in service. Package 2 removed the existing plant computer and associated inverter from service, installed the replacement plant computer equipment, and placed the new equipment in service.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3390, Pkg. 4, Addition Of Time Delay For 1G Group Bus Undervoltage. This design change interposes an external time delay element on the 4KV group bus 1G undervoltage trip to prevent spurious reactor trips caused by momentary electrical power transients.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3392, Pkg. 1, Turbine Gland Sealing Steam and Leak Off Modifications.

This design change modifies the Turbine Gland Sealing Steam and Leak-off system. The modifications include a new control valve, a new gland seal steam header pressure controller, a strainer with drain valves and a blowdown line, new internals for the High Pressure Turbine cylinder warming header steam pressure control valves, new turbine gland local steam pressure gauges and root valves, new orifice couplings, and the relocation of free blow valve piping connections.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3408, Pkg. 1, 15 Service Water Pump (1SWE5) Replacement

Modification. This design change replaces Service Water pump 1SWE5 with a pump that is manufactured from materials that are more resistant to the corrosive, erosive, and silt laden river water present in the Service Water system.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3473, Pkg. 1, 15 Refueling Water Storage Tank (RWST) Level Setpoint

Changes. This design change provided enhancements to ensure adequate net positive suction head during Containment Spray swapover from injection to sump recirculation. The change raises the RWST Low-Low level alarm setpoint from 0.0 feet to 1.0 feet to allow for instrument uncertainties between the setpoint and the 0.0 foot process limit (0.0 feet corresponds to the location of the lower instrument tap). It also rounded the Low level alarm setpoint down from 15.24 feet to 15.2 feet to match the readability of the Control Room indicator and raised the Low Backup level alarm setpoint from 11.53 feet to 15.2 feet (the same setpoint as for the low level alarm).

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3474, Pkg. 1, High Energy Line Break Relief Path Modifications. This design change implemented modifications that resolved obstructions and degraded material conditions for the existing pressure relief path to preclude the possibility of compartment pressurization beyond the design basis due to postulated high energy line breaks in the Auxiliary Building.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3475, Pkg. 1, Penetration Area Blowout Panel Modifications. This design change implemented modifications that resolved obstructions and degraded material conditions for the existing pressure relief path to preclude the possibility of compartment pressurization beyond the design basis due to postulated high energy line breaks in the Inner and Outer Penetration Areas.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3495, Pkg. 1, Steam Trap Replacement Project. This design change installed a restricting orifice, a strainer, and a bypass valve in lieu of a steam trap in the Main Steam system to reduce the potential of dumping excessive quantities of steam into the condenser when steam traps are bypassed due to trap failure. The modification will also minimize the contribution of Main Steam piping condensate removal systems to the Reactor Coolant system excess cooling phenomenon. This package affects 27 steam traps, 1MSE21 through 1MSE35 and 1MSE38 through 1MSE49.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3531, Pkg. 1, Reactor Vessel Level Indicating System Mid-Loop Wide Range Level Upgrade. This design change installed a wide range mid-loop channel in order to provide level indication during reduced inventory conditions and during vacuum fill.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3595, Pkg. 1, Turbine Driven Auxiliary Feed Pump Enclosure Damper Modification. This design change addressed overpressure conditions in the Turbine Driven Auxiliary Feed pump enclosure in the event of a steam line break. The modification removed the ABS-6 damper and associated controls and installed two blowout panels at the same location in the enclosure wall between the pump room and the pipe alley. It also added an automatic damper and controls for the enclosure to return air to the room cooler and added two temperature switches to the Turbine Driven Auxiliary Feed Pump enclosure.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3595, Pkg. 2, Turbine Driven Auxiliary Feed Pump Enclosure Floor Drain And Door Tightness Modification. This design change addressed overpressure conditions in the Turbine Driven Auxiliary Feed pump enclosure in the event of a steam line break to preclude the undesirable effects of steam flooding. The modification augmented the pressure boundary of the Turbine Driven Auxiliary Feed pump enclosure and the piping alley on elevation 84ft of the Auxiliary Building. It installed a new floor drain with loop seal for the Turbine Driven Auxiliary Feed Pump enclosure, rerouted steam and equipment drains in the enclosure to the new floor drain, sealed the existing floor drains, and modified the enclosure access door.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3647, Pkg. 1, Reactor Coolant Pump Vibration Monitors 1XA8943 And 1Y9498 Replacement. This design change replaced the obsolete vibration monitoring equipment associated with the Reactor Coolant pumps with a single digital vibration monitoring rack.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3668, Pkg. 2, 3, 6, 11, 12, and 13, Generic Letter 96-06 Modifications. This design change brings Salem Unit 1 into conformance with the Salem SAR and SER to eliminate the potential for two-phase flow, voiding, water hammer, and thermally induced overpressure in the Containment Fan Coil Unit Service Water piping. Packages 3, 6, and 11 involve the installation of Storage Tanks

on the CFCU Service Water headers. Package 2 installs valves downstream of the CFCU to provide backpressure to force Service Water flow through the CFCU fan motor cooler. Package 12 modifies the stroke time and valve control logic for Service Water flow control valves for the Component Cooling Water heat exchangers. Package 13 installs operator aids in the Control Room to prevent inadvertent operation of CFCU isolation valves to prevent CFCU overpressurization during a Loss Of Coolant Accident.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3668, Pkg. 9, Generic Letter 96-06 Modifications, Service Water System 12 Header Check Valve Installation. This modification installed a redundant check valve in the 12 Service Water Nuclear header Containment Fan Coil Unit (CFCU) 16" supply piping downstream of existing check valve 12SW51. This check valve will prevent potential drainage of the 11 and 12 CFCU supply piping that could be caused by current piping configuration.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3668, Pkg. 10, Generic Letter 96-06 Modifications, Remove High Radiation Closure Signal from Containment Fan Coil Unit (CFCU) Valves SW58 and SW72.. This modification removed the equipment that provided the AUTO mode of operation for CFCU Service Water (SW) isolation valves SW58 and SW72. It also removed the SW outlet High Radiation automatic valve closure signal and the Control Console high radiation bezel alarms.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3718, Pkg. 1, Generic Letter 96-06 Over-pressurization Related Modifications, Unit 1 This modification installed seven relief valves to limit the post accident peak pressures of certain piping segments inside containment to within their corresponding design pressures.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an

accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EC-3719, Pkg. 1, Addition Of Fuses To Circuits To Protect Penetrations

This modification provided backup protection for low values of over current for the penetration conductors in Pressurizer Heater Control Group and Back-up Groups 11 and 12 power supply circuits and in several containment lighting system supply circuits.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EE-0130, Pkg. 1, Containment Airlock Equalizing Valve Replacement. This modification replaced the existing Containment Airlock Equalizing valves with a design more suitable for the anticipated post-accident environment. It also added in-line filters at the flanged connection to protect the valve from debris damage.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

1EE-0348, Pkg. 1, Anti-Sweat Insulation for CFCU Service Water piping.

This modification installed anti-sweat insulation on the 3" and 3/4" diameter Service Water piping, and replaced the insulation on the 2" diameter Service Water Motor cooler piping associated with the CFCUs located at Elevation 130'-0 of the Salem Unit 1 Containment Building.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

5EC-0008, Pkg. 1, Hand Geometry Access Project. This modification installed a Hand Geometry Reader (HGR) system for plant access control. The system uses biometric identification technology in lieu of visual identification by a security officer comparing the person's features to a security badge.

This design change does not negatively impact any accident response. This design change does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this design change does not involve an Unreviewed Safety Question.

Temporary Modifications Summary of Safety Evaluations

There were no changes in this category implemented during January, 1998.

Procedures Summary of Safety Evaluations

There were no changes in this category implemented during January, 1998

UFSAR Change Notices Summary of Safety Evaluations

UFSAR Change Notice 98-005, Nuclear Business Unit Organization Change. This change adds the position of Executive Vice-President - Nuclear Business Unit (EVP-BU) who will report to the Chief Nuclear Officer/President Nuclear Business Unit (CNO-PNBU).

This evaluation does not negatively impact any accident response. This procedure revision does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this procedure revision does not involve an Unreviewed Safety Question.

UFSAR Change Notice 97-136, Update To Emergency Operating Procedure EOP-LOCA-3 And UFSAR: Revised Draindown Evaluation. This change modifies UFSAR section 6.3.2.6 and Table 6.3-6, which provides representative switchover sequences from injection to containment sump recirculation, to reflect changes being made to 1-EOP-LOCA-3. The changes to 1-EOP-LOCA-3 include step relocation to allow for earlier operator actions to assure switchover to recirculation at the Refueling Water Storage Tank (RWST) low level alarm. The UFSAR change also notes that both the RWST Low Level and the RWST Low Backup alarm setpoints are the same.

This evaluation does not negatively impact any accident response. This procedure revision does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this procedure revision does not involve an Unreviewed Safety Question.

Deficiency Reports Summary of Safety Evaluations

There were no changes in this category implemented during January, 1998.

Other Summary of Safety Evaluation

Salem Unit 1 Core Load Foreign Material Exclusion (FME), Loose Paint Chip and Missing Part Contained within the Salem Unit 1 RCS. This Safety Evaluation addresses two FME issues from the Salem Unit 1 Cycle 13 Core

Reload. The first is a missing burnable poison rod assembly (BPRA) crimp nut. This crimp nut could be anywhere between the RCS and the Spent Fuel Pool. Since it has not been recovered, it was assumed to be in the RCS. The second issue is a paint chip that was last seen in the reactor vessel and could not be recovered.

This evaluation does not negatively impact any accident response. This procedure revision does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this procedure revision does not involve an Unreviewed Safety Question.

Safety Evaluation S97-318. Revise Technical Specification Bases 3/4.1.3 Movable Control Assemblies. This evaluates a revision to the Technical Specification Bases section 3/4.1.3 for the Movable Control Assemblies to indicate that rod position may be verified by either the control console rod position indicators or by the plant computer.

This evaluation does not negatively impact any accident response. This procedure revision does not increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this procedure revision does not involve an Unreviewed Safety Question.