



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

LR-N98-0243

May 15, 1998

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

Attn: Document Control Desk

**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 April 1998 is attached.

Sincerely,

A. C. Bakken III  
General Manager -  
Salem Operations

1/1  
Je 24

/rbk  
Enclosures

C Mr. H. J. Miller  
Regional Administrator USNRC, Region 1  
475 Allendale Road  
King of Prussia, PA 19046

9805260057 980430  
PDR ADOCK 05000272  
R PDR

The power is in your hands.

DOCKET NO.: 50-272  
 UNIT: Salem 1  
 DATE: 5/15/98  
 COMPLETED BY: R. Knieriem  
 TELEPHONE: (609) 339-1782

Reporting Period: April 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		
<b>Month</b>	<b>Year-to-date</b>	<b>Cumulative</b>
559	559	104940
318	318	100707
0	0	0
181900	181900	100318443

**UNIT SHUTDOWNS**

NO.	DATE	TYPE F=FORCED S=SCHEDULED	DURATION (HOURS)	REASON (1)	METHOD OF SHUTTING DOWN THE REACTOR (2)	CORRECTIVE ACTION/COMMENT
1	4/1/98 - 4/17/98	F	401	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:

Salem Unit 1 was synchronized to the electric power grid at 1743 on April 20. The unit was operating at approximately 19% reactor power at the time of synchronization. Operators successfully conducted integrated testing and continued to increase power.

DOCKET NO.: 50-272  
UNIT: Salem 1  
DATE: 5/15/98  
COMPLETED BY: R. B. Knieriem  
TELEPHONE: (609) 339-1782

At the end of the month, reactor power was at approximately 90%. Following NRC concurrence, reactor power will be increased to 100%.

DOCKET NO.: 50-272  
UNIT: Salem 1  
DATE: 5/15/98  
COMPLETED BY: R. B. Knieriem  
TELEPHONE: (609) 339-1782

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

**MONTH: APRIL 1998**

The following items completed during **April 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-3301, Pkg. 1, Salem Unit 1 Steam Generator Blowdown Piping And Valve Modification**

This design change modified Salem Unit 1 Steam Generator Blowdown system piping and components to improve system reliability. The changes included the replacement of components with upgraded designs, improvements to component accessibility, and piping material upgrades.

This design change does not negatively impact any accident response; nor does it 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-3342, Pkg. 1, Circulating Water Bearing Lubrication/Screen Wash Setpoints And System Changes**

This modification implemented changes to the Circulating Water system to improve system reliability and performance. The changes included recalibration of system pressures and flows, changes to the Lubrication pump and Screen Wash pump controls for strainer backwash, replacement of the Lubrication Water

and Screen Wash strainer pressure gauges, and replacement of control valves with manual valves to simplify the system.

This design change does not negatively impact any accident response; nor does it 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-3345, Pkg. 1, Turbine Runback/Steam Generator Feed Pump (SGFP) Control Circuit Modification**

This modification installed circuitry to provide an automatic runback of the Main Turbine in the event of a SGFP trip. The runback circuitry will also open the Condensate Polishing Bypass valves and the Feedwater Heater Bypass valve. These actions will occur above a turbine power level of 60%-70% without operator intervention, to prevent a reactor trip.

This design change does not negatively impact any accident response; nor does it 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-3353, Pkg. 1, Smallbore Piping Replacement**

This design change replaced carbon steel piping and valves in the Main Steam, Steam Generating, Condensate, and Feedwater systems with components manufactured from upgraded materials to reduce erosion/corrosion induced failures.

This design change does not negatively impact any accident response; nor does it 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-3370, Pkg. 1, Moisture Separator Heater Tube Bundle Replacement**

This modification removed and replaced the low pressure tube bundles on three Salem Unit 1 Moisture Separator Reheaters. The new tube bundles are manufactured from stainless steel and replaced the existing copper-nickel alloy tubes. The existing copper-nickel tubes were replaced to address their contribution to corrosion pitting of steam generator tubes.

This design change does not negatively impact any accident response; nor does it 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-3388, Pkg. 1, Steam Generator Feed Pump (SGFP) Recirculation System Upgrade**

This modification implemented changes to the SGFP Recirculation Control valve design and system configuration to address erosion/corrosion concerns in the SGFP Recirculation piping. The change will also reduce Feedwater system flow transients during startup caused by instabilities in the existing valves while operating in the automatic mode.

This design change does not negatively impact any accident response; nor does it 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-3441, Pkg. 1, Automatic Temperature Control For The Air Side And Hydrogen Side Seal Oil Coolers**

This design change provided automatic temperature control for the Air Side Seal Oil cooler and Hydrogen Side Seal Oil coolers through the installation of an air-operated, fail as-is, temperature control valve in each of the Turbine Auxiliary Cooling system discharge lines from these components.

This design change does not negatively impact any accident response; nor does it 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-3458, Pkg. 1, Doric Temperature Monitor Replacement**

This modification replaced the existing Doric Temperature monitoring system, which remotely monitors the temperatures of numerous secondary, non-safety-related system parameters, with a more reliable and up-to-date system.

This design change does not negatively impact any accident response; nor does it 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-3481, Pkg. 1, Moisture Separator Reheater Drain And Vent System Modifications**

This design change modified and upgraded the Moisture Separator Reheater bleed steam coil drain and Main Steam coil drain system to improve system performance. The change involved increasing drain line piping sizes, drain piping rerouting, control valve replacement, and resizing of drain orifices.

This design change does not negatively impact any accident response; nor does it 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-3505, Pkg. 10, Work Control Center Air Conditioning System**

This modification provided an independent non-safety related roof-top air conditioning system to provide heating, cooling, and ventilation for the Salem Unit 1 and Unit 2 Common Work Control Center and the Field Senior Reactor Operator Office area.

This design change does not negatively impact any accident response; nor does it 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-3523, Replacement Of Westinghouse-Hagan/7100 Reactor Protection And Control System With NUS Modules**

This design change replaced Westinghouse-Hagan/7100, Class 1E isolator, summator, comparator, resistance temperature detector low level amplifier, and power supply modules in the Reactor Control and Protection system with equivalent modules manufactured by NUS.

This design change does not negatively impact any accident response; nor does it 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-3537, Pkg. 1, Circulating Water System Controls Modification**

This design change modified the Circulating Water pump starting circuitry to remove the pump start vacuum interlock. This interlock was removed after it was determined that starting a Circulating Water pump with a vacuum present in the condenser water box could produce pressures that exceed the water box design values.

This design change does not negatively impact any accident response; nor does it 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-3576, Pkg. 1, Bleed Steam/Heater Drain Control Valve (11HD9, 12 HD9, 13HD9) Replacement**

This design change replaced the existing 10", carbon steel, Fisher Model 100 control valves with 12" Copes-Vulcan D600 control valves. The new valves are designed to minimize flashing and erosion and to provide more precise control.

This design change does not negatively impact any accident response; nor does it 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-3631, Pkg. 2, Moisture Separator Reheater (MSR) Drain Piping**

This design change increased the capacity of the pumped drain system by replacing drain control valves and the impeller in the 11 Bleed Steam Coil Drain Tank pump. This capacity increase was necessary to accommodate modifications that replaced the MSR tube bundles and the gravity drain lines from the 12E and 13E Bleed Steam Reheat Coils to the 11 Bleed Steam Coil Drain tank.

This design change does not negatively impact any accident response; nor does it 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-3650, 4KV Group Bus G.E. Magne-blast Breaker Replacements**

This design change replaced the 2000A infeed breakers and the 1200A load breakers for all 4160V Group bus applications on Salem Unit 1. Specifically, the existing G. E. Magne-blast air circuit breakers were replaced with Siemens manufactured vacuum circuit breakers, within the existing switchgear cubicles.

This design change does not negatively impact any accident response; nor does it 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-3652, Pkg. 1, Moisture Separator Reheater (MSR) Control Logic Upgrades**

This design change replaced the existing Bailey 820 control system with a more up-to-date Programmable Logic Controller (PLC) based system.

This design change does not negatively impact any accident response; nor does it 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. 14, Protection For Service Water Accumulator Tanks And Associated Equipment**

This modification installed a gated security barrier in the area of the Service Water Accumulator vessel enclosure and a tornado missile barrier on the roof of the Auxiliary Building. The barrier was installed to provide protection for the vessels and their associated equipment.

This design change does not negatively impact any accident response; nor does it 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.

### **Minor Modification, S97-142, Pkg. 1, Upgrade Of Circulating Water Emergency Backup Line Pressure Reducing Valve (1SC13)**

This modification installs a Fisher Model 4160K Pneumatic Pressure Controller that utilizes an isolation diaphragm seal connected to the process piping being monitored. This modification was implemented to prevent intrusion of silt, impurities, and other debris into the reducing valve internals that in the past have impacted the reliability of the valve and resulted in unnecessary valve maintenance.

This design change does not negatively impact any accident response; nor does it 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**

### **Installation Of A Mechanical Gag On 11CC6, 11 Component Cooling Water (CCW) Heat Exchanger Isolation Valve**

This temporary modification installed a mechanical gag on valve 11CC6 to hold the valve in the open position. The valve is a manually operated gate valve and serves as the inlet isolation valve for the 11CCW heat exchanger. The gag was installed to hold the valve in the open position until plant conditions permit repair of a damaged valve shaft.

This temporary modification does not negatively impact any accident response; nor does it increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this temporary modification does not involve an Unreviewed Safety Question.

## **Procedures - Summary of Safety Evaluations**

There were no changes in this category implemented during April 1998.

## **UFSAR Change Notices - Summary of Safety Evaluations**

There were no changes in this category implemented during April 1998.

## **Deficiency Reports - Summary of Safety Evaluations**

### **Deficiency Report, 12TB10 Pipe Nipple And Cap Repair**

This repair replaced a damaged pipe nipple and cap welded into the turbine bypass pipe with a tapered metal plug. The tapered plug was seal welded directly to the main pipe to serve as an equivalent pressure boundary to the damaged pipe and nipple.

This repair does not negatively impact any accident response; nor does it increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this repair does not involve an Unreviewed Safety Question.

## Other - Summary of Safety Evaluations

### **Change To Salem Unit 1 Technical Specification Bases 3/4.9.1, Refueling Operations, Boron Concentration**

This change to the Bases for Technical Specification 3/4.9.1 provided clarification of the Technical Specification requirements for sampling of the Salem Unit 1 Refueling Canal.

This change does not negatively impact any accident response; nor does it increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this change does not involve an Unreviewed Safety Question.

### **Change To Salem Unit 1 Technical Specification Bases 2.2.1, Safety Limits And Limiting Safety System Settings**

This change to Technical Specification Bases 2.2.1 revised the description of Negative Flux Rate Trip (NFRT) to make the Bases consistent with the Salem Updated Final Safety Analysis Report. This change was required because of the implementation of an updated Westinghouse rod drop methodology in which the NFRT is no longer credited with protecting against minimum Departure From Nucleate Boiling Ratio (DNBR) concerns.

This change does not negatively impact any accident response; nor does it increase the probability or consequences of either an accident or a malfunction of equipment important to safety. Therefore, this change does not involve an Unreviewed Safety Question.