



PSEG

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

Salem Generating Station

May 12, 1994

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

Dear Sir:

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

In compliance with Section 6.9.1.6, Reporting Requirements for the Salem Technical Specifications, the original copy of the monthly operating reports for the month of April 1994 are being sent to you.

Average Daily Unit Power Level
Operating Data Report
Unit Shutdowns and Power Reductions
Safety Related Maintenance
10CFR50.59 Evaluations
Operating Summary
Refueling Information

Sincerely yours,

General Manager -
Salem Operations

RH:mp

cc: Mr. Thomas T. Martin
Regional Administrator USNRC
Region I
631 Park Avenue
King of Prussia, PA 19046

Enclosures

8-1-7.R4

The power is in your hands.

9405180387 940430
PDR ADOCK 05000272
R PDR

VERAGE DAILY UNIT POWER LEVEL

Docket No.: 50-272
 Unit Name: Salem #1
 Date: 05/10/94
 Telephone: 339-2122

Completed by: Mike Morroni

Month April 1994

Day Average Daily Power Level
(MWe-NET)

Day Average Daily Power Level
(MWe-NET)

1	<u>647</u>
2	<u>626</u>
3	<u>596</u>
4	<u>522</u>
5	<u>712</u>
6	<u>760</u>
7	<u>265</u>
8	<u>0</u>
9	<u>0</u>
10	<u>0</u>
11	<u>0</u>
12	<u>0</u>
13	<u>0</u>
14	<u>0</u>
15	<u>0</u>
16	<u>0</u>

17	<u>0</u>
18	<u>0</u>
19	<u>0</u>
20	<u>0</u>
21	<u>0</u>
22	<u>0</u>
23	<u>0</u>
24	<u>0</u>
25	<u>0</u>
26	<u>0</u>
27	<u>0</u>
28	<u>0</u>
29	<u>0</u>
30	<u>0</u>
31	<u>0</u>

OPERATING DATA REPORT

Docket No: 50-272
 Date: 05/10/94
 Telephone: 339-2122

Completed by: Mike Morroni

Operating Status

1. Unit Name	<u>Salem No. 1</u>	<u>Notes</u>
2. Reporting Period	<u>April 1994</u>	
3. Licensed Thermal Power (Mwt)	<u>3411</u>	
4. Nameplate Rating (Gross MWe)	<u>1170</u>	
5. Design Electrical Rating (Net MWe)	<u>1115</u>	
6. Maximum Dependable Capacity (Gross MWe)	<u>1149</u>	
7. Maximum Dependable Capacity (Net MWe)	<u>1106</u>	
8. If Changes Occur in Capacity Ratings (items 3 through 7) since Last Report, Give Reason	<u>N/A</u>	

9. Power Level to Which Restricted, if any (Net MWe) 0

10. Reasons for Restrictions, if any Investigation of reactor trip by NRC.

	<u>This Month</u>	<u>Year to Date</u>	<u>Cumulative</u>
12. Hours in Reporting Period	<u>719</u>	<u>2879</u>	<u>147576</u>
12. No. of Hrs. Rx. was Critical	<u>153.9</u>	<u>1628.1</u>	<u>96760.1</u>
13. Reactor Reserve Shutdown Hrs.	<u>0</u>	<u>0</u>	<u>0</u>
14. Hours Generator On-Line	<u>153.9</u>	<u>1253.7</u>	<u>93141.5</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>338930.4</u>	<u>4536528.0</u>	<u>295308842.0</u>
17. Gross Elec. Energy Generated (MWH)	<u>106100</u>	<u>1167310</u>	<u>97703280</u>
18. Net Elec. Energy Gen. (MWH)	<u>93232</u>	<u>1078207</u>	<u>93015760</u>
19. Unit Service Factor	<u>21.4</u>	<u>43.5</u>	<u>63.1</u>
20. Unit Availability Factor	<u>21.4</u>	<u>43.5</u>	<u>63.1</u>
21. Unit Capacity Factor (using MDC Net)	<u>11.7</u>	<u>33.9</u>	<u>57.0</u>
22. Unit Capacity Factor (using DER Net)	<u>11.6</u>	<u>33.6</u>	<u>56.5</u>
23. Unit Forced Outage Rate	<u>78.6</u>	<u>40.1</u>	<u>21.3</u>

24. Shutdowns scheduled over next 6 months (type, date and duration of each)
None.

25. If shutdown at end of Report Period, Estimated Date of Startup:
May 13, 1994.

UNIT SHUTDOWN AND POWER REDUCTIONS
REPORT MONTH APRIL 1994

DOCKET NO.: 50-272
UNIT NAME: Salem #1
DATE: 05-10-94
COMPLETED BY: Mike Morroni
TELEPHONE: 339-2122

NO.	DATE	TYPE ¹	DURATION (HOURS)	REASON ²	METHOD OF SHUTTING DOWN REACTOR	LICENSE EVENT REPORT #	SYSTEM CODE ⁴	COMPONENT CODE ⁵	CAUSE AND CORRECTIVE ACTION TO PREVENT RECURRENCE-
0583	4-7-94	F	565.2	A	3	-----	HF	PUMPXX	INTAKE SYSTEM PROBLEMS

¹
F: Forced
S: Scheduled

²
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 (Explain)

³
Method:
1-Manual
2-Manual Scram
3-Automatic Scram
4-Continuation of Previous Outage
5-Load Reduction
9-Other

⁴
Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

⁵
Exhibit 1 - Same Source

10CFR50.59 EVALUATIONS
MONTH: - APRIL 1994

DOCKET NO: 50-272
UNIT NAME: SALEM 1
DATE: MAY 10, 1994
COMPLETED BY: R. HELLER
TELEPHONE: (609)339-5162

The following items were evaluated in accordance with the provisions of the Code of Federal Regulations 10CFR50.59. The Station Operations Review Committee has reviewed and concurs with these evaluations.

ITEM

SUMMARY

A. Design Change Packages

1EC-3298 Pkg 1

"Primary Water Oxygen Reduction" - This DCP applies to Unit 1 only and will reduce the dissolved oxygen level in the Primary Makeup Water supplied in the CVCS by: 1.) The addition of an air operated valve 1DR171, in the existing Demineralized Water supply line to the PWMP suction header. 2.) The addition of a manual shut-off valve, 1WR190, in the existing line from the PWST to the PWMPs suction header. 3.) Reducing the total head developed by the Primary Water Makeup Pumps so that the total system head remains relatively unchanged when the suction to the pumps is from the pressurized Demineralized Water header. 4.) Modification of the existing pump control logic so that when a pump start signal is received the Demineralized Water supply valve will open before the pump(s) start (start delay will be provided by a time delay relay). The logic will also maintain the existing pump protection that prevents operation on low suction pressure. None of the non-safety related components in the PWST system are required to be operable by any of the Technical Specifications. These bases for the Technical Specifications do not consider the PWST or subcomponents in the safety evaluation of the Technical Specifications. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 94-032)

1EA-1061 Pkg 1

"DM System Piping As-Built" - This DCP covers revisions to Drawing No. 205213, Sht. Nos. 2 & 3, to reflect the as-built condition of the Demineralized Water Makeup System as identified in DEF DES 93-00256. None of these revisions involve physical changes to the plant. No field labor is required to implement this DCP although, in several instances, new valve tags will be hung.

(cont'd)

ITEM

SUMMARY

In some cases, valves and gauges are shown on the drawing that do not exist in the field. In another instance, the same valve tag numbers have been used twice. In a third case, valves that are already in the field are not shown on the drawing. All of these inconsistencies will be corrected by means of this DCP. Sect. Nos. 1.2 & 1.3 of Procedure NC.NA-AP.ZZ-0059(Q) were reviewed and a determination was made that the drawing revisions covered by this DCP do not impact either the radioactive waste treatment or the fire protection programs. The activities covered by this package do not affect the margin of safety in the basis for the Salem Technical Specifications. The Demineralized Water Makeup System is not safety related nor is any radioactivity present. The system is not specifically cited in the Technical Specifications. (SORC 94-036)

1EC-3208 Pkg 5

"Salem Fire Damper Upgrade" - The design scope for this package includes the replacement & relocation of existing fire dampers in the Unit 1 Switchgear & Penetration Area Ventilation (SPAV) System. The function, basic configuration and operation of the system will not be altered and the codes, standards, qualification and design criteria of the original system will apply. Fire dampers 1CVF-601, 1CVF-602, 1CVF-603, & 1CVF-810 will be replaced with new fire dampers rated for 3.0 hours and relocated to the fire barrier. New duct sections will be installed in these dampers' present locations. Fire damper 1CVF-815 is a new 3 hour damper that will be located in an existing sleeve in the fire barrier. Penetration seal activities required to support this modification involves breaching and resealing a penetration to route temporary power and lighting and the breaching and repair of the penetration seal to facilitate cable removal. The basis for the Technical Specifications does not address either the fire protection features or the SPAV system. The replaced or new fire dampers associated the SPAV system perform no safety related functions. Since the area temperatures are

10CFR50.59 EVALUATIONS
MONTH: - APRIL 1994

DOCKET NO: 50-272
UNIT NAME: SALEM 1
DATE: MAY 10, 1994
COMPLETED BY: R. HELLER
TELEPHONE: (609)339-5162

(cont'd)

ITEM	SUMMARY
B. Procedures and Revisions	
S1.OP-SO.CC-0002(Q)	suitable for the safety related equipment located in the area served by the SPAV system, the equipment is available during this modification. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 94-036)
B. Procedures and Revisions	
S1.OP-SO.CC-0002(Q)	"11 & 12 Component Cooling Heat Exchanger Operations" - These changes will limit the total service water flow if the Service Water (SW) system is challenged by an accident scenario that coincides with a single active component failure of the CCHX flow or temperature control devices. These are temporary restrictions which will be in place only up to a river temperature of 70 ^o Fahrenheit. DCPs 1EC-3316 and 2EC-3274 will be installed prior to the river temperature reaching 70 ^o . These two DCPs will address the excess flow through the CCHXs resulting from a flow control device failure, by means of a fixed restriction (manual valve permanently throttled). Engineering Calculation S-C-SW-MDC-1347 demonstrates that with these operating procedure revisions, the CCHX will satisfy normal plant operating conditions for the rejection of heat and will also perform the required design function for heat rejection from the Component Cooling System during the most limiting accident scenario. This proposal will result in no reduction in SWS flow to the CCHXs. This flow reduction does not reduce the capability of the CCHXs to perform their intended design function. There is no reduction in the margin of safety as defined in the bases for any Technical Specification. (SORC 94-032)
C. SAR Change Notices	
SCN 93-60	"MSIV Response Time Allocation" Rev. 1 - This SCN revision will make several changes to the UFSAR based on an analysis of the closure time of the main steam isolation valves (MSIVs) for Salem

10CFR50.59 EVALUATIONS
MONTH: - APRIL 1994

DOCKET NO: 50-272
UNIT NAME: SALEM 1
DATE: MAY 10, 1994
COMPLETED BY: R. HELLER
TELEPHONE: (609)339-5162

(cont'd)

ITEM	SUMMARY
	<p>Generating Station, Units 1 and 2, component numbers 11MS167 through 14MS167 and 21MS167 through 24MS167. A Technical Specification surveillance test change will be made to increase the allowed time limit from five (5) seconds to six (6) seconds. Although this number has increased, the overall ESF response time, which includes the six (6) second surveillance test time, remains unchanged. This increase allows margin in the surveillance test. The time response procedures will administratively limit the surveillance test to five (5) seconds and limit instrumentation delays to one (1) second. The applicable sections of the Salem Units 1 & 2 Technical Specifications were found to be identical for both Units. The applicable sections are 4.7.1.5, table 3.3-5 and bases section 3/4.7.1.5. The margin of safety for these Technical Specifications is not reduced by the change to remove the outdated references to acceptable closure times before refueling outages 10 and 6 for Units 1 & 2 respectively. Also, the margin of safety for bases section 3/4.7.1.5 is not reduced by the change to add an explanation of the relationship between the MSIV test closure times and the 12 second MSIV isolation time used in the main steam pipe rupture analysis. (SORC 94-029)</p>

D. Temporary Modifications

T-MOD #94-041

"Temporary Isolation Of Unit 1 Fuel Handling Building Exhaust Fans" - DCP 1EC-3278 provides design changes to the Fuel Handling Building exhaust fans 1VHE20 and 1VHE21, including (1) the replacement of backdraft dampers, flexible connections and adjustable motor sheaves, (2) the installation of duct mounted access doors on fan inlet ducts and (3) the installation of bracing to stiffen the fan motor supports. Normally both exhaust fans operated continuously along with the system supply fan 1VHE24. However, during the installation of DCP 1EC-3278, the Fuel Handling

10CFR50.59 EVALUATIONS
MONTH: - APRIL 1994

DOCKET NO: 50-272
UNIT NAME: SALEM 1
DATE: MAY 10, 1994
COMPLETED BY: R. HELLER
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(cont'd)

ITEM

SUMMARY

Area ventilation system will be taken out of service. This T-MOD provides blanking plates on the ductwork downstream of the exhaust fan discharge backdraft dampers to ensure gaseous effluent from the Auxiliary Building Ventilation and/or Waste Decay Tank does not inadvertently enter Auxiliary Building, Elev. 100', while the required work is being performed as outlined in DCP No. 1EC-3278. The Technical Specification requires that whenever irradiated fuel is in the storage pool, the fuel handling area ventilation system shall be operable. In the event the ventilation system is not operable, all operations involving the movement of fuel within the storage pool or crane operations with loads over the storage pool shall be suspended until the ventilation is restored. During the temporary modification, all fuel handling operations will be suspended in accordance with Technical Specification 3/4.9.12 and Procedure S1.OP-SO.FHV-0001(Q). Therefore, the temporary modification will not reduce the margin of safety as defined in the bases of the Technical Specifications. (SORC 94-032)

PORV OR SAFETY VALVE CHALLENGES

Salem Unit 1

In accordance with the requirements of Salem Generating Station Unit 1 Technical Specifications Section 6.9.1.6, the following recent challenges to PORVs or Safety Valves are being reported:

- * 04/07/94 On 04/07/94, following a reactor trip, one power operated relief valve (PORV), (Copes-Vulcan Model D-100) was identified to have cycled approximately 200 times, and the other PORV cycled approximately 100 times during their duty cycle. The reactor trip included a spurious safety injection which caused the pressurizer to go "solid". The valves operated satisfactorily to relieve pressurizer pressure as per design and there was no reason to suspect any problem.

An engineering assessment, including vendor participation, was performed to determine if valve disassembly was warranted based on duty cycle versus expected radiation exposure and the possibility of causing a problem via intrusive maintenance. The assessment concluded and internal inspection was not warranted based on design and testing data. However, due to the number of operating cycles that the valves experienced and the fact that water passed through the valves, both valves were disassembled for inspection as a precautionary measure. The inspection revealed component wear greater than what was expected to the following valve internal components:

1PR2 (~200 operating cycles)

- * The valve stem has scratches that penetrated through the chrome surface to the 316 stainless steel stem material. The scratches were located on the stem area that passes through the bonnet (could only be detected by valve disassembly).
- * The valve plug and cage has scratches where contact is made during an operating cycle, on the downstream side.
- * Crack indications on the valve plug anti-rotation pin hole area (this is a roll pin that is installed by the manufacturer after the plug is installed onto the stem).

1PR1 (~100 operating cycles)

- * Minor wear indications on the cage, stem and plug.
- * Crack indications in the valve plug in the anti-rotation pin hole area.

These components had been replaced per design change during the most recent refueling outage which ended in January 1994. The design modification changed the part materials for two reasons:

1. Improved reliability of ASTM-A276, Type 420 stainless steel for this application per the vendor recommendations; and
2. Cobalt reduction program.

Following this event, the internals of both valves were replaced and tested satisfactorily.

Details of this event are contained in Licensee Event Report 272/94-007-00

SALEM GENERATING STATION
MONTHLY OPERATING SUMMARY - UNIT 1
APRIL 1994

SALEM UNIT NO. 1

The Unit began the period operating at reduced power due to heavy grass conditions at the circulating water intake. A reactor trip occurred at 10:47 on April 7, 1994, after heavy grass buildup on the river caused a loss of circulating water to the condenser. Subsequent to the trip, a precautionary ALERT was declared after receiving two automatic safety injection signals. The Unit remained in Mode 5, "Cold Shutdown" throughout the remainder of the period. Design changes to correct the causes of the spurious safety injections have been completed. The power operated relief valves (PORVs) were disassembled for inspection as a precautionary measure due to the fact that water passed through the valves during the transient. Scratches were identified on the stem, plug and cage. These components were replaced in both PORVs. The pressurizer safety valves were removed to verify the pressure setpoints. Testing of the atmospheric relief valves, and design changes for the turbine drain valves and main turbine stop valves are in progress. The NRC Augmented Inspection Team (AIT) completed their investigation on April 22, 1994 and presented their findings on April 26, 1994. The presentation agreed with our assessment that the plant trip was a result of human error, complicated by equipment problems.

REFUELING INFORMATION
MONTH: - APRIL 1994

DOCKET NO: 50-272
UNIT NAME: SALEM 1
DATE: MAY 10, 1994
COMPLETED BY: R. HELLER
TELEPHONE: (609) 339-5162

MONTH APRIL 1994

1. Refueling information has changed from last month:
YES _____ NO X
2. Scheduled date for next refueling: MARCH 25, 1995
3. Scheduled date for restart following refueling: MAY 23, 1995
4. a) Will Technical Specification changes or other license amendments be required?:
YES _____ NO _____
NOT DETERMINED TO DATE X
- b) Has the reload fuel design been reviewed by the Station Operating Review Committee?:
YES _____ NO X
If no, when is it scheduled?: MARCH 1995
5. Scheduled date(s) for submitting proposed licensing action:
N/A
6. Important licensing considerations associated with refueling:

7. Number of Fuel Assemblies:
 - a. Incore 193
 - b. In Spent Fuel Storage 732
8. Present licensed spent fuel storage capacity: 1170
Future spent fuel storage capacity: 1170
9. Date of last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity: September 2001