



**PSEG**

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

Salem Generating Station

May 14, 1993

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

Dear Sir:

MONTHLY OPERATING REPORT  
SALEM NO. 2  
DOCKET NO. 50-311

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 1993 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:pc

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

Enclosures

8-1-7.R4

The Energy People

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OPERATING DATA REPORT

Docket No: 50-311  
 Date: 5/10/93  
 Telephone: 339-2122

Completed by: Mark Shedlock

Operating Status

1. Unit Name	<u>Salem No. 2</u>	<u>Notes</u>
2. Reporting Period	<u>April</u>	<u>1993</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) N/A

10. Reasons for Restrictions, if any N/A

	<u>This Month</u>	<u>Year to Date</u>	<u>Cumulative</u>
11. Hours in Reporting Period	<u>719</u>	<u>2879</u>	<u>101232</u>
12. No. of Hrs. Rx. was Critical	<u>0</u>	<u>1716.7</u>	<u>65482.31</u>
13. Reactor Reserve Shutdown Hrs.	<u>0</u>	<u>0</u>	<u>0</u>
14. Hours Generator On-Line	<u>0</u>	<u>1675.51</u>	<u>63233.97</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>0</u>	<u>5590744.8</u>	<u>150686434.6</u>
Gross Elec. Energy Generated (MWH)	<u>0</u>	<u>1913950</u>	<u>66621438</u>
18. Net Elec. Energy Gen. (MWH)	<u>-335</u>	<u>1830622</u>	<u>63416598</u>
19. Unit Service Factor	<u>0</u>	<u>58.2</u>	<u>62.5</u>
20. Unit Availability Factor	<u>0</u>	<u>58.2</u>	<u>62.5</u>
21. Unit Capacity Factor (using MDC Net)	<u>0</u>	<u>57.5</u>	<u>56.6</u>
22. Unit Capacity Factor (using DER Net)	<u>0</u>	<u>57.0</u>	<u>56.2</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>7.5</u>	<u>22.5</u>

24. Shutdowns scheduled over next 6 months (type, date and duration of each)  
Refueling outage scheduled to start 3-20-93 for approximately 74  
days.

25. If shutdown at end of Report Period, Estimated Date of Startup:  
06/01/93

VERAGE DAILY UNIT POWER LEVEL

Docket No.: 50-311  
Unit Name: Salem #2  
Date: 5/10/93  
Telephone: 339-2122

Completed by: Mark Shedlock

Month April 1993

Day Average Daily Power Level  
(MWe-NET)

Day Average Daily Power Level  
(MWe-NET)

1	<u>0</u>
2	<u>0</u>
3	<u>0</u>
4	<u>0</u>
5	<u>0</u>
6	<u>0</u>
7	<u>0</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>



SAFETY RELATED MAINTENANCE  
MONTH: - APRIL 1993

DOCKET NO: 50-311  
UNIT NAME: SALEM 2  
DATE: MAY 10, 1993  
COMPLETED BY: J. FEST  
TELEPHONE: (609) 339-2904

WO NO	UNIT	EQUIPMENT IDENTIFICATION
891103117	2	VALVE 2SJ1 FAILURE DESCRIPTION: 2SJ1 PACKING & BONNET LEAK - REPACK AND REPLACE
900728100	2	VALVE 22CS48 FAILURE DESCRIPTION: 22CS48 BONNET LEAK - OPEN AND INSPECT AND REPLACE GASKET
930225103	2	VALVE 2SJ2 FAILURE DESCRIPTION: 2SJ2 PACKING & BONNET LEAK - REPACK AND REPLACE
930323106	2	2FE980 FAILURE DESCRIPTION: FLANGE LEAK - REPLACE GASKETS
930325080	2	VALVE 2RH26 FAILURE DESCRIPTION: 2RH6 BONNET LEAK - OPEN & INSPECT, REPAIR AS NECESSARY

10CFR50.59 EVALUATIONS  
MONTH: - APRIL 1993

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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.  
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ITEM

SUMMARY

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A. Design Change Packages

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|----------|-------|--|
| 2EC-3179 | Pkg 3 | "Salem Fire Damper Upgrade" - The design scope for this package includes the replacement, relocation, addition and/or deletion of existing fire dampers to Unit 2's Diesel Fuel Oil Storage Area Ventilation (DFSAV) Subsystem of the Diesel Generator Area Ventilation (DGV) System. The function, basic configuration and operation of the system will not be altered and the codes, standards, qualifications and design criteria of the original system will apply. These modifications enhance the Fire Protection System to meet the criteria of 10CFR50 Appendix R. Therefore, there is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 93-031) |
| 2EC-3163 | Pkg 1 | "Installation of Unit Heaters in 2C Battery Room" - Convection heaters will be installed in the 2C battery room at el. 64'-0". These heaters will be of an explosion proof, NEC Code Class I, Division I and Group B design. The local Non-1E lighting panel A11A will be modified to provide power supplies for these heaters. This modification does not reduce the margin of safety as defined in the basis for any Technical Specification. (SORC 93-031)  |
| 2EC-3198 | Pkg 1 | "Overhead Annunciator System Modifications" - The purpose of this DCP is to provide the operators with enhanced failure detection and resolution for the Overhead Annunciator System (OHA). The changes are provided to enhance maintenance and troubleshooting. The new alarm design will ensure that all problems of the OHA system identified as significant are alarmed to the Control Room Operators. This modification does not reduce the margin of safety as defined in the basis for any Technical Specification. (SORC 93-031)   |

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2EC-3179 Pkg 7

"Salem Fire Damper Upgrade" - The design scope for this package Unit 2 includes the addition of a new fire damper and modification of an existing fire damper in the Control Area Air Conditioning System (CAACS) Subsystem of the Control Area Ventilation (CAV) 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. The basis for the Technical Specifications does not address the fire protection features. Since replaced or modified fire dampers associated with the CAAC system perform no safety related functions; these modifications do not affect a safety related system which is required for safe shutdown. There is no reduction in the margin of safety as defined in the basis for any Technical Specification.  
(SORC 93-033)

2EC-3222 Pkg 1

"Replacement of Heater and Springpack in Valve 2SJ135" - The purpose of this change package is to replace the existing motor, motor overload heater and springpack in the motor operator for valve 2SJ135. The proposed changes to 2SJ135 do not reduce the margin of safety as defined in the basis of any Technical Specification. The valve is not specifically mentioned in the Technical Specifications. The safety function to open has been previously assured by administratively controlling the valve in the locked open position in all modes of operation. The isolation function of the valve has been previously altered by closing the 21/22SJ134 valves in EOP-LOCA-4, prior to closing 2SJ135. (SORC 93-033)

2EC-3105 Pkg 1

"Rad Waste Panel 104 Modifications" - This DCP will perform modifications to Rad Waste Panel 104 and associated instruments and equipment. Work will include upgrading of instrument loops with new components, physical repair of Panel 104, removal of equipment no longer needed, and a functional verification of each instrument loop. Replacement of certain components used to monitor the administratively controlled transfer and release of radiological liquids and gasses will not affect any

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of the limiting conditions for operation or safety margins described in the Technical Specifications. The proposed modifications do not reduce the margin of safety as defined in the basis of any Technical Specification. (SORC 93-036)

2EC-3211 Pkg 1

"SGFP/Condensate Pump/Feedwater Heaters: System Design Press Modifications" - This DCP will provide a high pressure trip for the 21 and 22 SGFP turbines at 1620 psig. Two new transmitters will be installed on the discharge piping of each feedwater pump and by modifying the existing trip circuitry, the feed pump will trip (2/2 logic) on a high feed pump discharge pressure. The system pressure will be monitored by the P-250 computer. High and Low alarm limits will be installed to notify the operator when conditions have approached a pump trip pressure or a transmitter failure, respectively. Setpoint corrections for 5500 gpm will be made to the 21, 22 and 23 condensate pump recirculation flow control loops to ensure a maximum sustained pressure of approximately 625 psig during a cold startup. This DCP will also lower the setpoint for feedwater heaters 26A, 26B and 26C thermal relief valves 21, 22 and 23 HV22 from 2100 psig to 1600 psig. This will be accomplished by replacement of spring packs to lower relief valve actuation mechanical setpoints. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 93-036)

2EC-3098 Pkg 1

"Replacement of Rosemount Electronic Transmitters" - This modification replaced 30 Rosemount electronic transmitters with new transmitters having improved performance under harsh environmental conditions. The new transmitters are seismically and environmentally qualified for the installed locations. The tubing and valving arrangements will be standardized for all transmitters of the same type. Where space is available, differential pressure transmitters will be equipped with calibration volume chambers (CVCs). These chambers allow calibration with pneumatic signals without incursion of air into the transmitters or impulse tubing. The CVCs are not qualified components.



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They are seismically supported above the transmitter enclosures. The CVCs are isolated from the transmitters by two (2) isolation valves in each line. The valves are both normally closed when the transmitters are in service. The modification also replaces the electronics assemblies on 16 Rosemount transmitters in accumulator level (8) and pressure (8) service. Each of the 46 transmitters affected by this modification will be equipped with a qualified electrical connector to facilitate maintenance. There is no change to the instrument process variable spans. The new or modified transmitters are equal to or better than the previous instruments under all conditions. There is no reduction in the margin of safety as defined in the basis of any Technical Specification. (SORC 93-038)

2EE-0014 Pkg 1

"Vacuum Breaker Gooseneck Reduction and Pressure Indicator Installation" - This design change proposes to modify the Circulating Water (CW) pump discharge piping vacuum breaker goosenecks and adjacent guard posts, and to add pressure indicators into the instrument enclosures at each vacuum breaker. The vacuum breaker goosenecks will be lowered to provide additional clearance between the top of the goosenecks and the base of the mobile crane. A section will be cut out from the straight piping in the gooseneck standpipe. Each guard post will have the top section removed so that the top of the guard post is even with, but not higher than, the top of the gooseneck. The proposed modifications affect only the non-safety related CW system. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 93-038)

2EE-0013 Pkg 1

"Chemical Feed Pipe Removal - Condensate and Feedwater Systems" - This DCP entails the removal of three (3) chemical injection feed lines on the condensate system and one (1) chemistry sample line on the feedwater system at the following valve locations:

2BF10 (1" Chemistry sample isolation valve)

10CFR50.59 EVALUATIONS  
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TELEPHONE: (609) 339-2904

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ITEM	SUMMARY
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21CF19 (1" Chemical feed isolation valve)  
22CF19 (1" Chemical feed isolation valve)  
23CF19 (1" Chemical feed isolation valve)

Chemical injection/sample lines similar to the subject lines have a history of failure (Reference PSE&G Research and Testing Laboratory Report No. 74151) which could affect the operation/function of equipment and components downstream of these feed/sample points. The subject chemical feed/sample line are not functional or used by the chemistry department for chemical feed or sampling (Ref. attach. Ltr. from the Salem Chemistry Dept.). Elimination of these lines will preclude the potential of a malfunction of equipment and components downstream of these lines. There is no reduction in the margin of safety as defined in the basis for any Technical Specification.  
(SORC 93-038)

B. Safety Evaluations

NFS 93-224

"Salem Unit 2 Cycle 8 Core Loading Pattern and Safety Evaluation for Refueling and Operation in Mode 6" - During the Salem Unit 2 Cycle 7/8 refueling, 73 fuel assemblies will be replaced with 1 once burned Region 5A (3.81 w/o) fuel assembly, 1 twice burned Region 7A (4.00 w/o) fuel assembly, 2 once burned Region 3 (3.12 w/o) fuel assemblies, 13 Region 4 (3.41 w/o) assemblies, 4 fresh Region 10A (4.00 w/o) fuel assemblies, 20 fresh Region 10A (4.00 w/o, containing 104 Integral Fuel Burnable Absorbers - IFBA pins), 24 fresh Region 10B fuel assemblies (4.4 w/o containing 64 IFBA pins). The Cycle 8 core contains 416 fresh burnable absorber rodlets arranged in clusters as shown in Attachment 1A. The scope of this evaluation is limited to refueling and operation in MODE 6, for Cycle 8. A full evaluation covering all operational modes will be provided prior to leaving MODE 6. Operation of the Salem Unit 2 Cycle 8 reload core design for refueling and Mode 6 operation has been analyzed in accordance with approved Westinghouse reload methodology which takes into consideration the

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ITEM

SUMMARY  
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normal operating conditions as allowed in the Technical Specifications. Within the assumptions used in this safety evaluation, there are no reductions in margin of safety as defined in the bases of the Technical Specifications since the Cycle 8 reload does not cause any of the acceptance limits to be exceeded. (SORC 93-036)

C. Temporary Modifications

T-Mod # 93-034

"Switchgear Penetration Area Ventilation" - The purpose of this TMOD is to supply temporary power to the 22 Fuel Handling Building Exhaust Fan, No. 2 Battery Room Exhaust Fans, and Radiation Monitor R41A, B & C Pump. The temporary jumpers are limited in use to Modes 5, 6 or mode undefined. all temporary jumpers must be removed and equipment returned to normal configuration before entering mode 4. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 93-029)

T-Mod # 93-036

"Provide Temporary Power to Bus 2F During 22 SPT Outage" - The purpose of this TMOD is to supply temporary power to various buildings and components during 22 Station Power Transformer outage. The sizes of the temporary jumpers are in accordance with the National Electrical Code; Table 310-16, based on the expected load requirements. The overcurrent protection selected for the temporary jumpers will prevent overload, should the actual load exceed the expected load. System voltage degradation and electrical system overload concerns have been addressed per the requirements to monitor and/or shed loads as described in this TMOD package. There is no reduction in the margin of safety as defined in the basis of any Technical Specification. (SORC 93-031)

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T-Mod # 93-037

"Temporary Power for 22 Spent Fuel Pit Pump" - The purpose of this TMOD is to provide temporary power to 22 Spent Fuel Pit Pump. The temporary jumpers are limited in use to Modes 5, 6 or mode undefined. all temporary jumpers must be removed and equipment returned to normal configuration before entering mode 4. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 93-033)

T-Mod # 93-035

"Provide Temporary Power to Bus 2A During the Outage" - The purpose of this TMOD is to provide temporary power to the 21 Fuel Handling Bldg. Exhaust Fan, Radiation Monitor R11A, 12A & 12B Pump & 2RP4 Status Panel. The temporary jumper cables specified are used in the same application and environment as the normal power supply cables. The temporary power cables are of the same size, type, temperature rating, voltage rating and meet the same qualification requirements as the normal power supply cables. The overcurrent protection provided to the temporary jumper and normal supply cables is not altered by this TMOD. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 93-036)

T-Mod # 93-039

"Salem Unit 2 Pressurizer Enclosure Temperature Monitoring" - The ambient temperature in the pressurizer enclosure is high and is affecting the qualified life the cables inside the enclosure. The pressurizer insulation was patched with fiberglass NUKON insulation to reduce the hot spots. This temporary modification proposes to monitor the temperature inside the pressurizer enclosure. The results will be used determine the ambient temperature of the enclosure and will be used to evaluate the qualified life of the cables inside the enclosure, and provide reliable means of evaluating heat stress conditions inside the pressurizer enclosure. This modification involves installation of thermocouples connected to Bitloggers (data acquisition units). These would be 16 thermocouples (T/C), T/C wires (16 gauge Type T cables and two

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ITEM

SUMMARY  
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Bitloggers, 3 T/C's will be at selected EQ equipment locations, 12 T/C's will measure pressurizer enclosure air temperature and 1 T/C will measure air temperature at the Bitlogger location. The thermocouple wire is 16 gauge Type T cable. The Bitloggers will be located outside the pressurizer enclosure at elevation 130'. Power supply is from Six (6) C-Cell batteries for each Bitlogger. The thermocouples will be tywrapped to the component that is being measured. Every six weeks the data from the Bitlogger will be downloaded to a computer for evaluation. The data derived from the Bitlogger will be temperature readings at each of the thermocouple locations. This data will be used to evaluate the enclosure temperature, heat stress conditions inside the enclosure and the evaluation of qualified life of the cables. The temperature monitoring device does not perform any safety related function and does not affect any safety related system required for the safe shutdown of the Salem Unit. There is no reduction in the margin of safety as defined in the basis for any Technical Specification. (SORC 93-038)

SALEM GENERATING STATION  
MONTHLY OPERATING SUMMARY - UNIT 2  
APRIL 1993

SALEM UNIT NO. 2

The Unit remained shutdown throughout the entire period for the Seventh Refueling Outage.

REFUELING INFORMATION  
MONTH: --APRIL 1993

DOCKET NO: 50-311  
UNIT NAME: SALEM 2  
DATE: MAY 10, 1993  
COMPLETED BY: J. FEST  
TELEPHONE: (609) 339-2904

MONTH APRIL 1993

1. Refueling information has changed from last month:  
YES  NO
2. Scheduled date for next refueling: MARCH 20, 1993
3. Scheduled date for restart following refueling: JUNE 1, 1993
4. a) Will Technical Specification changes or other license amendments be required?:  
YES  NO   
NOT DETERMINED TO DATE
- b) Has the reload fuel design been reviewed by the Station Operating Review Committee?:  
YES  NO   
If no, when is it scheduled?: MAY 1993
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 0
  - b. In Spent Fuel Storage 657
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: March 2003