



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

November 14, 1991

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 October 1991 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

220014

9111220195 911031
PDR ADDCK 05000311
R - PDR

IE24
11

AVERAGE DAILY UNIT POWER LEVEL

Docket No.: 50-311
 Unit Name: Salem #2
 Date: 11/10/91
 Telephone: 339-2122

Completed by: Mark Shedlock

Month October 1991

Day Average Daily Power Level
(MWe-NET)

Day Average Daily Power Level
(MWe-NET)

1	<u>1058</u>
2	<u>1092</u>
3	<u>1069</u>
4	<u>1082</u>
5	<u>1063</u>
6	<u>1079</u>
7	<u>1082</u>
8	<u>1064</u>
9	<u>1083</u>
10	<u>1075</u>
11	<u>1087</u>
12	<u>1058</u>
13	<u>1099</u>
14	<u>874</u>
15	<u>1085</u>
16	<u>1078</u>

17	<u>1084</u>
18	<u>781</u>
19	<u>0</u>
20	<u>25</u>
21	<u>534</u>
22	<u>1086</u>
23	<u>1049</u>
24	<u>1075</u>
25	<u>1071</u>
26	<u>1091</u>
27	<u>1077</u>
28	<u>1073</u>
29	<u>990</u>
30	<u>1086</u>
31	<u>1110</u>

OPERATING DATA REPORT

Docket No: 50-311
 Date: 11/10/91
 Telephone: 339-2122

Completed by: Mark Shedlock

Operating Status

1. Unit Name	<u>Salem No. 2</u>	<u>Notes</u>
2. Reporting Period	<u>October 1991</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>745</u>	<u>7296</u>	<u>88105</u>
12. No. of Hrs. Rx. was Critical	<u>745</u>	<u>7056.6</u>	<u>58412.8</u>
13. Reactor Reserve Shutdown Hrs.	<u>0</u>	<u>0</u>	<u>0</u>
14. Hours Generator On-Line	<u>698.1</u>	<u>6985.4</u>	<u>56695.4</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2318373.6</u>	<u>23428358.4</u>	<u>129421827.4</u>
17. Gross Elec. Energy Generated (MWH)	<u>756950</u>	<u>7767241</u>	<u>59499168</u>
18. Net Elec. Energy Gen. (MWH)	<u>724109</u>	<u>7447518</u>	<u>56655329</u>
19. Unit Service Factor	<u>93.7</u>	<u>95.7</u>	<u>64.3</u>
20. Unit Availability Factor	<u>93.7</u>	<u>95.7</u>	<u>64.3</u>
21. Unit Capacity Factor (using MDC Net)	<u>87.9</u>	<u>92.3</u>	<u>58.1</u>
22. Unit Capacity Factor (using DER Net)	<u>87.2</u>	<u>91.5</u>	<u>57.7</u>
23. Unit Forced Outage Rate	<u>6.3</u>	<u>.7</u>	<u>22.1</u>

24. Shutdowns scheduled over next 6 months (type, date and duration of each)
Refueling outage scheduled to start 1-4-92 and last 75 days.

25. If shutdown at end of Report Period, Estimated Date of Startup:
N/A

UNIT SHUTDOWN AND POWER REDUCTIONS
 REPORT MONTH OCTOBER 1991

DOCKET NO.: 50-311
 UNIT NAME: Salem #2
 DATE: 11/10/91
 COMPLETED BY: Mark Shedlock
 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
0072	10/14/91	F	14.2	A	5	-----	CH	INSTRU	#21 S.G. FEED PUMP CONTROLS
0076	10/18/91	F	46.9	A	1	-----	HH	HTEXCH	STEAM GEN. CHEMISTRY
0077	10/28/91	F	7.6	H	5	-----	EB	TRANSF	SOLAR MAGNETIC DISTURBANCES

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

SAFETY RELATED MAINTENANCE
MONTH: - OCTOBER 1991

DOCKET NO: 50-311
UNIT NAME: SALEM 2
DATE: NOVEMBER 10, 1991
COMPLETED BY: J. FEST
TELEPHONE: (609) 339-2904

WO NO	UNIT	EQUIPMENT IDENTIFICATION
900614136	2	2N31 FAILURE DESCRIPTION: 2N31 FAULTY - TROUBLESHOOT
910523152	2	21 CHILL WATER PUMP FAILURE DESCRIPTION: 21 CHILL WATER PUMP MECHANICAL SEAL LEAKING - TROUBLESHOOT
910622073	2	22 CHILLER CONDENSER PUMP FAILURE DESCRIPTION: 22 CHILLER CONDENSER PUMP OIL LEAK - REPAIR
910716156	2	VALVE 24SW24 FAILURE DESCRIPTION: 24SW24 DIAPHRAGM LEAKING - REPLACE DIAPHRAGM
910905133	2	VALVE 21SW47 FAILURE DESCRIPTION: VALVE 21SW47 FAILED X-RAY - REPLACE
910918167	2	SERVICE WATER PIPING FAILURE DESCRIPTION: THROUGH WALL LEAK IN THE SW PIPING TO 21 CHARGING PUMP - REPAIR
910919122	2	SERVICE WATER PIPING FAILURE DESCRIPTION: 2S27C CHILLER CONDENSER SW SUPPLY AND RETURN PIPING PIN HOLE LEAKS - REPLACE
910928099	2	25 CONTAINMENT FAN COIL UNIT FAILURE DESCRIPTION: 25 CFCU FLOW IS LOW IN HIGH SPEED - INVESTIGATE
911010116	2	RMS MONITOR 2R12B FAILURE DESCRIPTION: 2R12B CONTAINMENT IODINE RADIATION MONITOR FAILED - INVESTIGATE

SAFETY RELATED MAINTENANCE
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TELEPHONE: (609) 339-2904

(cont'd)

WO NO	UNIT	EQUIPMENT IDENTIFICATION
911011149	2	CHARCOAL FILTER 2VHE304 FAILURE DESCRIPTION: 2VHE304 CHARCOAL FILTER WAS DELUGED - REPLACE
911021162	2	CONTAINMENT NOBLE GAS RADIATION MONITOR FAILURE DESCRIPTION: 2R12A NOBLE GAS RADIATION MONITOR ERRATIC - INVESTIGATE
911022165	2	RMS MONITOR 2R45 FAILURE DESCRIPTION: 2R45 CONTROL TERMINAL/NO RESPONSE - INVESTIGATE
911024148	2	SW SPOOL RD-2-SW-444 FAILURE DESCRIPTION: SPOOL RD-2-SW-444 LEAKING - REPAIR

10CFR50.59 EVALUATIONS
MONTH: - OCTOBER 1991

DOCKET NO: 50-311
UNIT NAME: SALEM 2
DATE: NOVEMBER 10, 1991
COMPLETED BY: J. FEST
TELEPHONE: (609) 339-2904

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 (DCP)

- DCP # 2SC-2166 PKG. 1 "Service Water Pipe Replacement - SWIS Bay # 2"
- This DCP involves changing out various sections of the existing Service Water (SW) piping and valves in the Salem Unit 2 Service Water Intake Structure, Bay No. 2, during a refueling outage. The existing SW piping is primarily cement lined carbon steel with small sections of low alloy stainless steel and aluminum bronze. This piping which is Nuclear Class 3, Seismic Class 1, and Pipe Class 27C is being upgraded with 6% molybdenum stainless steel. The new piping is also Nuclear Class 3, Seismic Class 1, however, the new Pipe Class is 27F. The safety related portions of this new piping is designed to ANSI B31.1 1967 and fabricated, erected and inspected per ANSI B31.7 1969. It should be noted that these are the original construction codes as permitted under ASME SECTION XI - RULES FOR PLANT REPLACEMENT. The temporary conditions associated with the installation of this modification do not impact the ability of the SW system to perform its intended safety functions. The permanent configuration does not affect the emergency operation of the SW system. The SW system will function in the same manner as it did prior to these modifications, since this is a material upgrade and the configuration changes are minor. The proposed modification does not reduce the margin of safety as defined in the basis for the Technical Specifications.
(SORC 91-101)
- DCP # 2EC-3043 PKG. 1 "Penetration Area 6% Moly Pipe Replacement" -
This DCP involves the replacement of 10" cement lined carbon steel Service Water (SW) pipe with 6% molybdenum stainless steel on elevation 78' in the mechanical piping penetration area.

10CFR50.59 EVALUATIONS
MONTH: - OCTOBER 1991

DOCKET NO: 50-311
UNIT NAME: SALEM 2
DATE: NOVEMBER 10, 1991
COMPLETED BY: J. FEST
TELEPHONE: (609) 339-2904

(Cont'd)

ITEM

SUMMARY

The scope of work for this DCP entails the replacement of 10 containment fan coil unit SW supply and return lines from the first set of break flanges outside No. 21 and 23 SW valve rooms through the containment penetrations to the first set of break flanges inside containment. There are a number of major configuration changes which have been incorporated into the new piping and hanger design package which will significantly reduce the material and installation costs while enhancing the system reliability, maintainability and operability. The proposed modification will not increase the probability of an accident previously evaluated in the SAR. The proposed modification fully meets the design, material and construction requirements applicable to the modified system. The new piping material and its installation is designed to be equivalent or better than the pipe it replaces and will result in a significant reliability improvement. (SORC 91-101)

DCP # 2EC-3045 PKG. 1

"Service Water Pipe Replacements - 21-25 CFCUs"
- This DCP involves the replacement of the 10" cement lined carbon steel SW supply and return piping for fan coil units 21, 22, 23, 24 & 25, below elevation 102, down to the break flanges at the penetrations inside containment, including all associated vents. The purpose of this replacement is to significantly increase system reliability and service life. Routing of the new piping is expected to be identical to the existing routing. The configuration was not changed, therefore, the system will function identically to that currently installed. Therefore, there is no increase in the probability of an accident previously evaluated in the SAR. The proposed change also does not create the potential for an accident not previously evaluated. There is no increase in the consequences of an accident previously evaluated in the SAR. (SORC 91-101)

10CFR50.59 EVALUATIONS
MONTH: -OCTOBER 1991

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

(Cont'd)

ITEM

SUMMARY

DCP # 2EC-3040 Pkgs 1-2 "Boric Acid Transfer Pumps" - These modifications propose to install a larger diameter shaft in the Boric Acid Transfer (BAT) pump. A new frame adapter, frame foot, power end, stuffing box, and mechanical seal will be used to accommodate the new shaft. The new stuffing box is designed with a tapered bore allowing increased circulation in the seal cavity which provides improved seal cooling. Being that all hydraulic characteristics, manual and automatic controls, and pump to pipe connections will remain unchanged and overall pump integrity is improved with the new shaft, there are no unreviewed safety concerns pertaining to the completed pump upgrade. (SORC 91-103)

DCP # 2EC-3073 Pkg. 2 "MSIV Internal Modifications" - This change package consists of four different topics: 1) Increase the diameter of the bore hole in the equalizing orifice within the steam cylinder piston from 1/16" (1.6mm) to .441"; 2) Modify structural platforms in the vicinity of the MSIVs to enable ease of removal required during MSIV maintenance; 3) Modify the pipe whip restraints on the vent line off 23MS167 to enable ease of removal required during MSIV maintenance, and 4) Provide documentation to allow the use of three different OEM supplied materials for the MSIV discs. The proposed changes do not create the possibility of an accident of a different type than any previously evaluated in the SAR. The modifications will not require change to any previously analyzed accidents which credit steam line isolation capability and will not impose new transients on the facility. The originally intended function of the pressure equalization orifice will be retained and as such the possibility of a different type of accident is not created. The change in material of the MSIV discs will not alter the performance of the MSIV and will therefore not create the possibility of an accident of a different type other than previously evaluated in the SAR. (SORC 91-106)

10CFR50.59 EVALUATIONS
MONTH: -OCTOBER 1991

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(Cont'd)

ITEM

SUMMARY

DCP # 2EC-3073 Pkg. 3

"MSIV Vent Valve Actuator Replacement" - This modification proposes to replace existing Fischer Type 657, Size 50 air actuators on MSIV vent valves (MS169 & MS171) with Fischer type 657, Size 60 actuators to improve seat leak tightness. Since the new actuators are designed and operated in the same manner as the existing actuators, the consequences of a malfunction will not be any greater than those for the existing actuators. The method and modes of operation for the vent valves and MSIVs will not be changed as a result of making these modifications. Therefore, the possibility of an accident of a different type than any previously evaluated is not created. (SORC 91-106)

DCP # 2EC-3056 Pkg. 1

"Phase III Annunciator Modifications" - The purpose of this modification is to implement the corrective actions required to resolve 14 of the Human Engineering Discrepancies (HED) identified in the Salem Unit 2 Control Room. The HEDs were generated during the Detailed Control Room Design Review (DCRDR) conducted in accordance with NRC NUREG-0700 requirements. This modification is a replacement and an upgrade of the existing overhead annunciator system. This modification does not affect any existing safety related system and has no effect on Class 1E circuits. There is no change to system performance, instrument setpoints, or any other operating parameter. The modification enhances notification to the operator of abnormal conditions. The modification does not increase the radiological consequences of any of the accidents evaluated in the SAR because the change does not: 1) prevent or degrade actions assumed in the SAR accident analysis; 2) alter any assumptions previously made in evaluating the radiological consequences of an accident described in the SAR, or 3) affect a fission product barrier. (SORC 91-110)

10CFR50.59 EVALUATIONS
MONTH: -OCTOBER 1991

DOCKET NO: 50-311
UNIT NAME: SALEM 2
DATE: NOVEMBER 10, 1991
COMPLETED BY: J. FEST
TELEPHONE: (609)339-2904

(Cont'd)

ITEM	SUMMARY
DCP # 2EC-3079 Pkg. 1	<p>"Ammonia & Hydrazine Injection" - The purpose of this design change is to provide a permanent addition path for injection of ammonia and hydrazine into the Condensate Polishing discharge line. The existing ammonia path, which runs from valve 2CF103 to a common injection line for the two chemicals, (upstream of 2CF87) will be modified to connect to valve 2CN129. The tie in to the common injection path will be capped. This change will remove and supersede temporary modification STD 89-072. The additional chemical injection path will enhance the ability of the Chemistry Department to maintain proper chemistry control while the Condensate Polishing system is in service, thereby improving the reliability and integrity of the Feed & Condensate system chemistry. There is no change to the function of any system and the change is to a non-safety related system. Therefore, there is no possibility of an accident or malfunction of a different type than that evaluated in the SAR being created. (SORC 91-110)</p>
B. Safety Evaluations	
WO 911023150	<p>"PSWR S-1587" - This 10CFR50.59 Review and Safety Evaluation is issued to permit the breaching of a penetration seal in the barrier located between the Mechanical Penetration at the 100' elevation and the 100' elevation North-South Aisle of SGS Unit No. 2. In order to breach this penetration, it is necessary to breach a contiguous zone barrier for a short period of time. The time period will be governed by the time required to complete the work activity and may range, for example, from four to seven days in length. If a postulated HELB were to occur during the time period the environmental effects on equipment in the Auxiliary Building at 100' elevation would not be significant due to many mitigating effects.</p>

10CFR50.59 EVALUATIONS
MONTH: --OCTOBER 1991

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(Cont'd)

ITEM

SUMMARY

Because of these mitigating effects, it is judged that a significant increase in temperature will not occur in the Auxiliary Building. Therefore, operability of any 1E equipment in this area would not be affected by this postulated HELB. (SORC 91-108)

C. Temporary Modifications

TMR # 91-088

"Temporary Power For No. 21 Station Power Transformer Outage (SPT)" -

TMR # 91-089

"Temporary Power For No. 22 Station Power Transformer Outage (SPT)" -

The purpose of these modifications is to install temporary 460V and 230v electrical jumpers to supply power to necessary loads during 21 & 22 SPT outages. The only accident having relevance to these TMRs is "Loss of Offsite Power to the Station Auxiliaries". A somewhat related event, "Loss of Offsite Power as seen by the Vital Busses", occurred at the Salem plant during August 1986, due in part to unanalyzed increased electrical system loading. These TMRs will not increase existing electrical system loading above already analyzed levels. Therefore, the probability of causing a "Loss of Offsite Power as seen by the Vital Busses" event will not increase as a result of installing these TMRs. The Reactor Coolant Pump (RCP) flow was not lost during the above described "Loss of Offsite Power as seen by the Vital Busses" event. If for some reason, this event could/did cause a loss of RCP flow, the existing "Loss of Offsite Power to the Station Auxiliaries" accident analysis demonstrates the reactor core to remain adequately cooled without RCP motors. (SORC 91-108)

SALEM GENERATING STATION
MONTHLY OPERATING SUMMARY - UNIT 2
OCTOBER 1991

SALEM UNIT NO. 2

The Unit began the period operating at full power and continued operating at full power until October 14, 1991, when power was reduced to 70% to investigate an instrumentation problem on 21 Steam Generator Feedwater Pump (SGFP). The SGFP was returned to service and the Unit was restored to 100% power later the same day. The Unit continued to operate at full power until October 18, 1991, when a shutdown was commenced to remove chlorides from a steam generator. The Unit was restored to full power on October 21, and, with the exception of a minor load reduction on October 28, 1991, due to a Solar Magnetic Disturbance, continued to operate at full power throughout the remainder of the period.

REFUELING INFORMATION
MONTH: --OCTOBER 1991

DOCKET NO: 50-311
UNIT NAME: SALEM 2
DATE: NOVEMBER 10, 1991
COMPLETED BY: J. FEST
TELEPHONE: (609) 339-2904

MONTH OCTOBER 1991

1. Refueling information has changed from last month:
YES X NO
2. Scheduled date for next refueling: *JANUARY 4, 1992
3. Scheduled date for restart following refueling: *MARCH 21, 1992
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?: December 1991
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 356
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

8-1-7.R4

* - Refueling outage dates may be revised due to turbine generator failure.