PSE&G

Public Service Electric and Gas Company
Salem Generating Station P.O. Box #168 Hancocks Bridge, New Jersey 08038

February 15, 1978

Director, Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Sir:

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

In compliance with Section 6.9, Reporting Requirements for the Salem Technical Specifications, 10 copies of the following monthly operating reports for the month of January, 1978 are being sent to you.

Average Daily Unit Power Level
Operating Data Report
Unit Shutdowns and Power Reductions
Major Plant Modification
Summary of Safety Related Maintenance
Operating Summary

Sincerely yours,

H. J. Heller
Manager - Salem Generating Station

JMZ:jcm
cc: Mr. Boyce H. Grier (1 Copy)
Director of U. S. NRC
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, PA 19406

Director, Office of Management (2 Copies)
Information and Program Control
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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Page 1 of 16
8-1-7.R3

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-272
UNIT Salem No. 1
DATE February 15, 1978
COMPLETED BY J.M. Zupko, Jr.
TELEPHONE 609-365-7000 X507

MONTH January, 1978

DAY	AVERAGE DAILY POWER LEVEL (MWe-NET)	DAY	AVERAGE DAILY POWER LEVEL (MWE-NET)
1	1050	17	119
2	1116	18	884
3	1086	19	1100
4	428	20	1089
5	1066	21	1095
6	1009	22	1073
7	1082	23	410
8	1042	24	0
9	1066	25	0
10	941	26	0
11	23	27	0
12	0	28	0
13	0	29	0
14	0	30	783
15	0	31	996
16	0		

OPERATING DATA REPORT

DOCKET NO.: 50-272
DATE: February 15, 1978
COMPLETED BY: J.M. Zupko, JR.
TELEPHONE: 609-365-7000 X507

OPERATING STATUS

1. Unit Name: Salem No. 1
2. Reporting Period: January, 1978
3. Licensed Thermal Power (MWt): 3338
4. Nameplate Rating (Gross MWe): 1135
5. Design Electrical Rating (Net MWe): 1090
6. Maximum Dependable Capacity (Gross MWe): 1124
7. Maximum Dependable Capacity (Net MWe): 1079
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reason:

None

Notes:

9. Power Level To Which Restricted, If Any (Net MWe): None
10. Reasons For Restrictions, If Any: None

	This Month	Year to Date	Cumulative
11. Hours In Reporting Period	744	744	5185
12. Number Of Hours Reactor Was Critical	496.5	496.5	3039.7
13. Reactor Reserve Shutdown Hours	0	0	0
14. Hours Generator On-Line	435.5	435.5	2866.1
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	1286153	1286153	7981373
17. Gross Electrical Energy Generated (MWH)	439000	439000	2625310
18. Net Electrical Energy Generated (MWH)	415482	415482	2470657
19. Unit Service Factor	58.5	58.5	55.3
20. Unit Availability Factor	58.5	58.5	55.3
21. Unit Capacity Factor (Using MDC Net)	51.8	51.8	44.2
22. Unit Capacity Factor (Using DER Net)	51.2	51.2	43.7
23. Unit Forced Outage Rate	41.5	41.5	18.9

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
None

25. If Shut Down At End of Report Period, Estimated Date of Startup: N/A
26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY	9/30/76	12/11/76
INITIAL ELECTRICITY	11/1/76	12/25/76
COMMERCIAL OPERATION	12/20/76	6/30/77

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH January, 1978

DOCKET NO.: 50-272
UNIT NAME: Salem Unit #1
DATE: February 15, 1978
COMPLETED BY: J.M. Zupko, Jr.
TELEPHONE: 609-365-7000 X507

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
78-1	1-4-78	F	4.1	A	3	------	HF	Filter	Loss of 11B, 12A, 13A, 13B Circulators due to high screen ΔP.
78-2	1-5-78	F	0	A	4(A)	------	HH	Filter	Clean 11, 12 Condensate Pump Suction Strainers.
78-3	1-7-78	S	0	A	4(A)	------	HH	Filter	Clean 11, 12, 13 Condensate Pump Suction Strainers.
78-4	1-8-78	F	0	A	4(A)	------	HF	Filter	Loss of 13A, 13B Circulators due to high screen ΔP.
78-5	1-9-78	F	0	A	4(A)	------	HF	Filter	Frozen traveling screens.
78-6	1-10-78	F	0	A	4(A)	------	HF	Filter	Frozen traveling screens.
78-7	1-11-78	F	12.2	A	2	------	HF	Filter	Freezing conditions and low tide caused low suction conditions on circulators. Operator manually tripped turbine.

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-Other (Explain)

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

5
Exhibit 1-Same Source

NOTES:

A. Load Reduction
B. Continuation of previous outage.

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH January, 1978

DOCKET NO.: 50-272
UNIT NAME: Salem Unit No.1
DATE: February 15, 1978
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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
78-8	1-11-78	F	66.0	A	4 (B)	------	SF	Valvex	11SJ56 bonnet leaking.
78-9	1-14-78	F	38.6	A	4 (B)	------	SF	Valvex	11SJ54 valve operator failure.
78-10	1-15-78	F	15.4	A	4 (B)	------	HA	Motorx	Main Turbine Turning Gear Motor winding burned out.
78-11	1-16-78	F	8.1	A	4 (B)	------	HF	Filter	Spurious losses of circulators.
78-12	1-17-78	F	0	A	4 (A)	------	HF	Filter	Loss of 11B, 13B Circulators due to high screen ΔP.
78-13	1-17-78	F	6.4	A	3	------	HH	Valvex	Feedwater flow transients due to a faulty feedwater heater bypass valve.
78-14	1-18-78	F	0	A	4 (A)	------	HH	Filter	Clean 11, 12, 13 Condensate Pump suction strainers.
78-15	1-18-78	F	0	A	4 (A)	------	HH	Filter	Clean #13 Heater Drain Pump suction strainer.
78-17	1-23-78	F	114.8	A	3	------	HA	Instru	Electrical Fault in Electro-Hydraulic Control System causing false turbine overspeed protective action.
78-18	1-28-78	F	42.9	A	4 (B)	------	HF	Filter	Circulating Water Trash Rack Ice Accummulation.

UNIT SHUTDOWNS AND POWER REDUCTIONS

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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
78-19	1-30-78	F	0	A	4 (A)	------	HF	Filter	Frozen traveling screens.
78-20	1-30-78	F	0	A	4 (A)	------	HH	Filter	Clean 11, 12, 13 Condensate Pump Suction Strainers.

MAJOR PLANT MODIFICATIONS

REPORT MONTH January, 1978

DOCKET NO.: 50-272

UNIT NAME: Salem Unit #1

DATE: February 15, 1978

COMPLETED BY: J. M. Zupko, Jr.

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*DCR NO.	PRINCIPLE SYSTEM	SUBJECT
ED-0042	Service Water	Modify intake enclosure to prevent traveling screen freeze-up.
ED-0211	Switchgear Ventilation	Relocate pressure taps.
ED-0093	115VAC Inverters	Install blown fuse indicators.

* DESIGN CHANGE REQUEST

SUMMARY OF SAFETY RELATED MAINTENANCE

DEPARTMENT MAINTENANCE

REPORT MONTH January, 1978

DOCKET NO.: 50-272

UNIT NAME: Salem Unit #1

DATE: February 15, 1978

COMPLETED BY: J. M. Zupko, Jr.

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WORK ORDER NO.	EQUIPMENT	FAILURE DESCRIPTION	CORRECTIVE ACTION
RE-124	In Core Flux Map System.	Check Clutch Tension on "F" Drive Unit.	Adjusted clutch.
PD-4330	Control Room Ventilation.	Dampers Bind	Oiled and adjusted dampers.
PD-4340	#11 B.A. Trans. Pump	Heat tapes shorted.	Repaired damaged heat tape.
OD-5260	Valve 11RH29	Packing leak.	Repacked.
OD-6760	Vital Heat Tracing.	Panels 1HTGA1 and 1HTGA2 alarming.	Replaced thermostats.
OD-6826	Valve 13RC22	Packing leak.	Repacked valve.
OD-6828	11 R.C. Pump	Packing leak-return loop	Tighten valve packing.
OD-6832	Valve 11SJ56	Repack and repair.	Seal welded bonnet seal.
OD-6843	Valve 1CC136	Failed closure time check.	Adjusted stroke.
OD-6867	#12 SW Pump Strainer.	Shear Pin broken.	Replaced Shear Pin.
OD-6868	#14 SW Pump Strainer.	Shear Pin broken.	Replaced Shear Pin.
OD-6880	#14 SW Pump Strainer.	Shear Pin broken.	Replaced Shear Pin.
OD-7345	Valve 11SJ56	Valve cover leaking.	Replaced gasket.
OD-7790	Valve 1SJ68	Packing leak.	Tightened packing.

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WORK ORDER NO.	EQUIPMENT	FAILURE DESCRIPTION	CORRECTIVE ACTION
OD-7845	125 VDC	Ground on system.	Ground in R.M.S. cabinet removed.
OD-7853	#12 Component Cooling Pump.	Vent line leaking.	Rethreaded and reinstalled vent line.
OD-7872	#12 SW Pump Pump Strainer.	Strainer packing leaking.	Repacked strainer.
OD-7882	Valve 12RH29	Motor trips on overload.	Replaced valve operator.
OD-7889	#14 SW Pump Pump backwash.	Transformer burnt.	Replaced burnt transformer and solenoid valve.
OD-7902	Valve 12SJ20	Packing leak.	Tightened packing.
OD-7909	15 S.W. Pump	Repack pump.	Repacked pump.
OD-7929	#12, 14, 16 S.W.Pump strainers	Shear Pin broken.	Replaced shear pin.
OD-7938	Valve 12SW17	Will not open from control console.	Adjusted torque switch.
OD-7943	12 S.W. Pump Strainer.	Runs continuous in auto.	Recalibrate instrumentation.
OD-7977	Aux. Bldg. Ventilation	Replace 11 & 12 Exhaust Fan Roughing Filters.	Replaced filters.
OD-7989	#13 Service Water Strainer.	Hand hole cover leaking	Replaced gasket.
OD-8011	#14 S.W. Pump Pump Strainer.	Shear Pin broken.	Replaced shear pin.

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WORK ORDER NO.	EQUIPMENT	FAILURE DESCRIPTION	CORRECTIVE ACTION
OD-8027	1A-125 VDC Bus.	Bus Voltage is higher than normal.	Adjusted voltage.
OD-8034	Elev. 130' air lock.	Interior door has a cracked upper roller.	Replaced bearing.
OD-8043	Valve 11RC28	Packing leak.	Repacked valve.
OD-8044	Valve 13RC16	Packing leak.	Repacked valve.
MD-2078	Valve 11CA681	Remove and test, reinstall	Performed as directed.
MD-2406	#1 Emerg. Control Air Comp.	Overhaul Compressor.	Overhauled compressor.
MD-2419	Valve 12MS130	Packing gland leak.	Repacked valve.
MD-2437	#16 S.W. Pump Backwash.	Disassemble and repair.	Changed orifice plate.
MD-2441	Valve 11SW24	Diaphragm ruptured.	Replace diaphragm.
MD-2447	Valve 11CV155	Diaphragm ruptured.	Replaced diaphragm.
MD-2471	Valve 16SW24	Diaphragm ruptured.	Replaced diaphragm.
MD-2472	Valve 1CV56	Packing leaking.	Repacked valve.
OP-159	Main Stm. Supports	Hanger supports not loaded properly.	Reset main steam supports.

SUMMARY OF SAFETY RELATED MAINTENANCE

DEPARTMENT PERFORMANCE

REPORT MONTH January, 1978

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DATE: February 15, 1978

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WORK ORDER NO.	EQUIPMENT	FAILURE DESCRIPTION	CORRECTIVE ACTION
PD-4324	Service Water Bypass Valve Timers.	Timers not operating.	Replace limit switch on 11SW49
PD-4359	Valve 12MS18	Valve leaking at the diaphragm bolts.	Replaced diaphragm.
PD-4428	Protection System status panel.	Erroneous indication.	Replaced shorted diode.
OD-7689	Service Water PA-8707-Z.	ΔP instrument has tubing blown off.	Installed new bourdon tube
OD-7780	13 A.F.W. Pump	No indication of Stm. Press. in the Control Room.	Replaced force motor in pressure transmitter.
OD-7923	Valve 13SW58	Will not close in time allowed.	Reworked limit switch.
OD-7996	N-43 Power Range	Instrument spiking.	Cleaned potentiometer.
OD-8004	Service Water #11 Screen.	Runs continuously.	Blew down bubbler tubes.
PD-4336	Heat Trace.	Heat trace thermostats and thermocouples - 701P, 701S, 702P, 702S heat damaged.	Replaced and calibrated thermostats and thermocouples.
PD-4363	Safety Injection RWST level ind.	Level indication frozen.	Heated lines and calibrated.
PD-4365	RMS 1R16	Loss of indication.	Replaced G.M. tube and calibrated.
PD-4388	R.C.S. CH-1 Press. Indicator.	Indication High.	Replaced signal isolator.

SUMMARY OF SAFETY RELATED MAINTENANCE

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WORK ORDER NO.	EQUIPMENT	FAILURE DESCRIPTION	CORRECTIVE ACTION
PD-4391	Safety Injection #11 Accum. Level	Erroneous readings.	Vented level transmitter.
OD-7731	CVCS	Flow indicator reading low.	Reset square root extractor.
OD-7927	Valve & 1PR2	Stroke time too long.	Replaced solenoid valve and tightened diaphragm bolts.
OD-7937	Valve 1CV79	No open indication.	Adjusted limit switch.
PD-4355	ΔT Protection Loop 13.	Setpoint dropped.	Replaced two capacitors and calibrated.
RE-117	Excore Detector Voltage Recorder.	Reading incorredtly.	Recalibrated recorders.
OD-7540	13 and 14 Steam Flow and Feed Flow Recorders.	Channel 2 reads higher than others.	Recalibrated recorders.
OD-7852	Vital Heat Trace-Recorder	Bank advance malfunction.	Replace two transistors and repaired broken wire.
PD-4340	Valve 14AF21	Demand indication reads zero.	Resoldered loose wire.
PD-4343	14 Steam Flow, CH-II. FT-543	Functional test out of spec.	Recalibrated loop.
OD-6812	Stack Flow	FA8605 reading 100,000 cfm. (steady reading)	Ice in feed lines.
OD-6820	RWST Level B	Reads Lower than Level D.	Recalibrated Transmitter
OD-6825	CVCS	Valves 1CV185, 1CV-181 1CV-179, do not open on automatic.	Replaced controller for valve 1CV179.

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WORK ORDER NO.	EQUIPMENT	FAILURE DESCRIPTION	CORRECTIVE ACTION
OD-6875	N-43 Lower	Erroneous reading.	Replaced signal isolator.

OPERATING SUMMARY

SALEM UNIT #1

January, 1978

1-1 With the plant operating at 88% of capacity, the heater drain pumps were cycled as part of a program to clean the Feed and Condensate System. Power was then reduced to 70% to clean all condensate pump suction strainers.

At 0825 unit output was returned to full load of 1140 MWe gross. The unit operated at full load until 1-4.

1-4 With the unit at full power, Circulating Water System problems forced a load reduction to 50% power. Several minutes after the load reduction, #12 Steam Generator Feed Pump tripped; followed by a trip of #11 Steam Generator Feed Pump. A Reactor Turbine Trip occurred from 50% power caused by low condenser vacuum.

At 0350 the reactor was taken critical and the unit was synchronized at 0625.

1-5 At 0449 the unit output was returned to full load.

At 2128 load was reduced to 70% to clean condensate pump strainers.

1-6 At 1210 unit output was returned to full load.

1-7 At 2145 load was reduced to cycle heater drain pumps and clean condensate pump suction strainers.

1-8 At 0827 unit output was returned to full load.

1-9 The unit remained at full load essentially all day except for a short period at 70% due to circulating water problems.

1-11 At 0146 the turbine was manually tripped from 30% power due to problems with the Circulating Water System.

At 1945 a Reactor Coolant System cooldown was initiated to repair a non-isolable valve in the Safety Injection System. The outage lasted until 1-16.

1-16 The reactor was taken critical at 0828 and the unit was synchronized at 2206.

1-17 At 0713 the unit tripped from 150 MWe gross due to high-high level in #13 Steam Generator. This stemmed from frozen feeler lines on a feedwater heater drainage valve that operated a bypass valve which caused an unstable feedwater condition. The operator attempted to manually control feedwater to avoid a low-low level trip. The transient led to a high-high level trip.

The reactor was taken critical at 0852 and the unit was synchronized at 1331.

1-18 At 0630 the unit output was returned to full load.

At 1145 the load was reduced to 70% to clean condensate pump suction strainers and was returned to full load at 2200. The unit remained at full power until 1-23.

1-23 At 0915 a Reactor Turbine Trip occurred caused by a malfunction of the E-H Control System.

At 1330 A Reactor Coolant System cooldown was started to repair leaking #12 and #13 Steam Generator, steam side manways.

At 1759 a Safety Injection occurred during cooldown at about 200 psig steam generator pressure on a high differential pressure between steam generators. (Ref. L.E.R. No. 78-04)

The outage lasted till 1-29.

1-28 The reactor was taken critical at 0530.

1-29 The unit was synchronized at 2256. A delay in synchronizing the generator was due to loss of condenser circulating water caused by icing over of the trash racks.

1-30 At 1610 the unit output was returned to full load.

At 2203 a load reduction to 70% was started to clean condensate pump strainers.

1-31 At 0928 the unit output was returned to full load.