

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
SEQUOYAH NUCLEAR PLANT

MONTHLY OPERATING REPORT
DECEMBER 1, 1981 - DECEMBER 31, 1981

UNIT 1

DOCKET NUMBER 50-327

LICENSE NUMBER DPR-77

UNIT 2

DOCKET NUMBER 50-328

LICENSE NUMBER DPR-79

Submitted By:

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Power Plant Superintendent

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Operations Summary

December 1981

The following summary describes the significant operational activities for the month of December. In support of this summary, a chronological log of significant events is included in this report.

Unit 1

Unit 1 was critical for 692.1 hours, produced 636,290 MWh (gross) with 2.8 percent station use, resulting in an average hourly gross load of 965,026 KW during the month. The net heat rate for the month was 10,280 BTU/KWH. There are 178.9 full power days estimated remaining until the end of cycle 1 fuel. With a capacity factor of 85 percent the target EOC exposure would be reached July 29, 1982. The capacity factor for the month was 73.5 percent.

There were no reactor scrams, one manual shutdown, and six power reductions during December.

Unit 2

Unit 2 was critical for 43.7 hours, produced 1,904 MWh (gross) with an average hourly gross load of 136,829 kW during the month. There are 382.6 full power days estimated remaining until the end of cycle 1 fuel. The capacity factor for the month was 7.5 percent.

There was one reactor scram, no manual shutdowns, and no power reductions during December.

Significant Operational Events

Unit 1

<u>Date</u>	<u>Time</u>	<u>Event</u>
12/01/81	0001	Reactor power 98% - 1044 MWe.
	0600	Reactor power 96%, 1023 MWe, load was reduced to remove B-1 water box from service for condenser tube leak testing. All water boxes to be tested.
12/03/81	1720	Reactor power 100%, 1140 MWe, all water boxes back in service.
12/04/81	0640	C2 was taken out of service for retest. Reactor power 99%, 1111 MWe. C1 water box to be retested also.

Significant Operational Events

(Continued)

Unit 1

<u>Date</u>	<u>Time</u>	<u>Event</u>
12/05/81	0640	C1 water box placed back in service after retesting was completed on C1 and C2 water boxes. Reactor power 100%, 1150 MWe.
12/07/81	1615	Reactor power 25%, 275 MWe for repairs on reactor coolant pump #3.
12/08/81	1130	Began load reduction to take the unit off line and the reactor to mode 3.
	1243	The generator was taken off line.
	1310	Reactor entered mode 3.
12/10/81	1402	The reactor was taken critical.
	1637	The generator was tied on line.
	1900	Reactor power 30% and holding for steam generator chemistry.
12/11/81	2108	Began load increase.
	2150	Reactor power 36% and holding due to electrical problems on MFPT B.
	2312	Increased reactor power to 48% and holding because governor valve positioner on MFPT B was inoperable.
12/12/81	0305	Began load increase.
	0600	Reactor power 84%, 1080 MWe. Began load reduction due to main turbine #11 bearing.
	0900	Load decrease stopped at \cong 65% turbine load.
	1620	Started power increase.
	2110	Reactor power 94% reducing power to 80% due to a casing leak on condensate booster pump A.

Significant Operational Events

(Continued)

Unit 1

<u>Date</u>	<u>Time</u>	<u>Event</u>
12/12/81	2200	Reactor power at 76% and holding.
	2318	Began power increase.
12/13/81	0620	Reactor power 97%, 1050 MWe.
	2220	Reactor power 99%, 1114 MWe.
12/27/81	1210	Began load reduction to take the reactor to mode 2 due to the sump level transmitter out of limits.
	1433	Turbine trip off line.
12/28/81	2318	Turbine tied on line and reactor power increased to 30%, 320 MWe and holding for steam generator chemistry.
12/31/81	2105	Began power ascension.
	2359	Reactor power 50%, 516 MWe.

Unit 2

12/01/81	0001	Reactor in mode 4, 205° and 325 psi. The exciter is off-site for repairs.
12/08/81	1530	Began cooldown to 145° for weld inspection of reactor pressure vessel nozzels.
	1600	The reactor entered mode 5.
12/09/81	2143	A safety injection occurred while the SI-247.6 series SI's were being performed (response time testing engineering safety feature actuation slave relays) as the result of a miscommunication between the instrument mechanic and unit operator.
12/11/81	1750	The reactor entered mode 4.
12/16/81	1530	The exciter is back on site.
12/21/81	1857	The reactor taken critical.

Significant Operational Events

(Continued)

Unit 2

<u>Date</u>	<u>Time</u>	<u>Event</u>
12/22/81	1821	Reactor entered mode 1.
12/23/81	0010	Unit tied on line - initial generation.
	0230	Reactor power 20%, 125 MWe.
	1346	A feedwater valve opened an automatic signal creating a Hi-Hi level alarm in #4 steam generator and caused the turbine and hotwell pumps to trip. P-9 circuit was transferring the steam from the turbine to the steam dumps. Operators were unable to get a hotwell pump started in time to prevent a Lo-Lo level alarm in another loop and therefore a reactor trip occurred.
	2000	Began cooldown to flush the steam generators because of bad water chemistry.
12/26/81	0622	Reactor entered mode 4.
12/31/81	2359	Reactor in mode 4, 340°F, 700 psi cleaning up steam generator water chemistry.

PORV's and Safety Valves Summary

No PORV's or safety valves were challenged during the month.

Licensee Events and Special Reports

The following Licensee Event Reports (LER's) were sent during December 1981, to the Assistant Director of Nuclear Power (Operations) for reporting to the Nuclear Regulatory Commission.

<u>LER</u>	<u>SUBJECT</u>
SQRO-50-327/132	RCS water inventory not performed within 72 hours.
SQRO-50-327/142	AFW pressure control valve 1-PCV-3-122 would not operate due to servo valve hydraulic fluid contamination.

Licensee Events and Special Reports

(Continued)

<u>LER</u>	<u>SUBJECT</u>
SQRO-50-327/145	Motor leads to 1-FCV-63-6 discovered lifted.
SQRO-50-327/146	EGTS inoperable when dampers 1-65-81 and -86 would not stay open due to failing latching system.
SQRO-50-327/147	Loop 2 cold leg injection accumulator inoperable due to low boron concentration with cause unknown.
SQRO-50-327/148	Pressurizer steam containment isolation valves 1-FCV-43-2 would not close due to binding or broken actuator spring.
SQRO-50-327/149	Steam generator blowdown effluent line rad monitor RM-90-120/121 inoperable due to erratic readings caused by air trapped in sample chambers.
SQRO-50-327/150	Feedwater flow loop 1-FI-3-35B inoperable due to low readings caused by air in sensing lines.
SQRO-50-328/134	Relay contacts for RCP #3 fire zone found improperly wired.
SQRO-50-328/136	Valves 2-68-548 and -578 closed to isolate leak in instrument piping for 2-PI-68-69 RCS pressure loop 3 hotleg.
SQRO-50-328/140	Overpower delta T reactor trip instrumentation inoperable due to defective logic in the solid state protection system.
SQRO-50-328/141	AFW pump A pressure control valve 2-PCV-3-122 would not operate from control room due to servo valve inoperable due to contaminated hydraulic fluid.
SQRO-50-328/143	2-LCV-3-171 failed due to dirty solenoid causing reactor trip.
SQRO-50-328/144	RCS average temperature fell below 541°F.
SQRO-50-328/152	Control rod withdrawal limit exceeded during start-up causing possible positive MTC.

Special Reports

There were two special reports sent during the month of December.

81-8 Unit 2 positive moderate temperature coefficient per
Tech Spec 3.1.1.3.

81-9 Unit 2 report failure to submit report to NRC required
by License 2.C.(16).5.

Offsite Dose Calculation Manual Changes

There were no changes to the Offsite Dose Calculation Manual during the
month of December 1981.

OPERATING DATA REPORT

DOCKET NO. 50-327
 DATE 1-4-82
 COMPLETED BY M. Eddings
 TELEPHONE (615) 751-0343

OPERATING STATUS

1. Unit Name: Sequoyah One
2. Reporting Period: December 1981
3. Licensed Thermal Power (Mwt): 3411
4. Nameplate Rating (Gross MWe): 1220.58
5. Design Electrical Rating (Net MWe): 1148
6. Maximum Dependable Capacity (Gross MWe): 1163
7. Maximum Dependable Capacity (Net MWe): 1128
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

Notes

9. Power Level To Which Restricted, If Any (Net MWe): _____
10. Reasons For Restrictions, If Any: _____

	This Month	Yr-to-Date	Cumulative
11. Hours in Reporting Period	<u>744</u>	<u>744</u>	<u>4441</u>
12. Number of Hours Reactor Was Critical	<u>692.1</u>	<u>692.1</u>	<u>2801.3</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
14. Hours Generator On-Line	<u>659.3</u>	<u>659.3</u>	<u>2690.4</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1909779</u>	<u>1909779</u>	<u>8895612</u>
17. Gross Electrical Energy Generated (MWH)	<u>636290</u>	<u>636290</u>	<u>2645950</u>
18. Net Electrical Energy Generated (MWH)	<u>618613</u>	<u>618613</u>	<u>1527025</u>
19. Unit Service Factor	<u>88.6</u>	<u>88.6</u>	<u>60.9</u>
20. Unit Availability Factor	<u>88.6</u>	<u>88.6</u>	<u>60.9</u>
21. Unit Capacity Factor (Using MDC Net)	<u>73.7</u>	<u>73.7</u>	<u>50.8</u>
22. Unit Capacity Factor (Using DER Net)	<u>73.7</u>	<u>73.7</u>	<u>50.8</u>
23. Unit Forced Outage Rate	<u>11.4</u>	<u>11.4</u>	<u>39.1</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): Tech. Spec. Ice Weighing February 19, 1982			

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

	Forecast	Achieved
INITIAL CRITICALITY	<u>7--80</u>	<u>7-5-80</u>
INITIAL ELECTRICITY	<u>8-21-80</u>	<u>7-22-80</u>
COMMERCIAL OPERATION	<u>7-1-81</u>	<u>7-1-81</u>

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-327
 UNIT NAME Sequoyah One
 DATE 1-4-82
 COMPLETED BY M. Eddings
 TELEPHONE (615) 751-0343

REPORT MONTH December 1981

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
6	81/12/08	F	51.9	A	1				Maintenance on #2 R.C.P.
	81/12/12		0		5				23% Load Decrease Due to Excessive Main Turbine #11 Bearing Vibration
7	81/12/27	F	32.8	A	5				Containment Sump Level Out of Limits Reactor Remained Critical 1 to 3% Pwr. Turbine was Tripped.

-8-

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-Cont. of Existing Outage
 5-Reduction
 9-Other

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

5
 Exhibit I-Same Source

(9/77)

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-327
 UNIT Sequoyah One
 DATE 1-4-82
 COMPLETED BY M. Eddings
 TELEPHONE (615) 751-0343

MONTH December 1981

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1042	17	1070
2	1057	18	1117
3	1088	19	1113
4	1077	20	1101
5	1097	21	1097
6	1108	22	1099
7	743	23	1114
8	117	24	1111
9	0	25	1105
10	68	26	1105
11	288	27	590
12	786	28	0
13	1078	29	262
14	1108	30	259
15	1123	31	292
16	1114		

INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

(9/77)

OPERATING DATA REPORT

DOCKET NO 50-328
 DATE 1-6-82
 COMPLETED BY David Dupree
 TELEPHONE (615) 751-0343

OPERATING STATUS

1. Unit Name: Sequoyah Two
2. Reporting Period: December, 1981
3. Licensed Thermal Power (Mwt): 3411
4. Nameplate Rating (Gross MWe): 1220.5
5. Design Electrical Rating (Net MWe): 1148
6. Maximum Dependable Capacity (Gross MWe): 1183
7. Maximum Dependable Capacity (Net MWe): 1148
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

Notes

9. Power Level To Which Restricted, If Any (Net MWe): _____
10. Reasons For Restrictions, If Any: _____

	This Month	Yr-to-Date	Cumulative
11. Hours in Reporting Period	744	1464	1464
12. Number of Hours Reactor Was Critical	43.7	257.2	257.2
13. Reactor Reserve Shutdown Hours	0	0	0
14. Hours Generator On-Line	13.6	13.6	13.6
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	12713	15914	15914
17. Gross Electrical Energy Generated (MWH)	1904	1904	1904
18. Net Electrical Energy Generated (MWH)	0	0	0
19. Unit Service Factor	6.3	6.3	6.3
20. Unit Availability Factor	6.3	6.3	6.3
21. Unit Capacity Factor (Using MDC Net)	0	0	0
22. Unit Capacity Factor (Using DER Net)	0	0	0
23. Unit Forced Outage Rate	98.2	98.2	98.2
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): Ice Weighing (5-5-82) Requirement Per Tech Specs			

25. If Shut Down At End Of Report Period, Estimated Date of Startup: 1-11-82
26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY	<u>11-5-81</u>	<u>11-5-81</u>
INITIAL ELECTRICITY	<u>12-31-81</u>	<u>12-23-81</u>
COMMERCIAL OPERATION	<u>3-1-81</u>	<u>NA</u>

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-328
 UNIT NAME Sequoyah Two
 DATE 1-6-82
 COMPLETED BY David Dupree
 TELEPHONE (615) 751-0343

REPORT MONTH December 1981

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
	81/12/01	S	528.2	A	1				Initial Criticality Testing
81-1	81/12/23	F	202.2	A	3				Turbine Trip from High Level #4 S/G Feedwater Valve went open on Auto. Rx Trip due to low S/G level.

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-Cont. of Existing Outage
 5-Reduction
 9-Other

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

⁵
 Exhibit I-Same Source

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-328
 UNIT Sequoyah Two
 DATE 1-6-82
 COMPLETED BY David Dupree
 TELEPHONE (615) 751-0343

MONTH December 1981

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	0	17	0
2	0	18	0
3	0	19	0
4	0	20	0
5	0	21	0
6	0	22	0
7	0	23	0
8	0	24	0
9	0	25	0
10	0	26	0
11	0	27	0
12	0	28	0
13	0	29	0
14	0	30	0
15	0	31	0
16	0		

INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

(9/77)

Plant Maintenance Summary

The following significant maintenance items were completed during the month of December 1981:

Mechanical Maintenance

1. The steam dump sparger has been installed on Unit 2 condenser.
2. The steam dump modifications have been completed on all three condensers on Unit 2.
3. The mechanical seal on hotwell pump 1C has been replaced.
4. 2-FCV-1-18 was rebuilt.

Electrical Maintenance

1. Repairs were made to the 2B hotwell pump motor.
2. The Unit 2 exciter was received back on site and installed.
3. The Technical Support Center 'Dimension' phone system modifications were completed.

Instrument Maintenance

1. Containment sump level transmitters 1-LT-63-176 and -177 required special calibration due to drifting.
2. Due to the accumulation of non-condensibles, the pressurizer level channel condensate pots required to be vented are: L-63-320, 5 times; L-68-335, 2 times, and L-68-339, 1 time.

Field Services Maintenance

Work continues on the following items.

1. A post accident sampling system for Unit 1 is being installed to obtain designated liquid and gas samples during and after a postulated event.
2. IE Bulletin 79-14 - Hanger Repairs - 448 repairs are completed and 65 identified repairs remaining.
3. The 4-inch train B piping to HVAC equipment serving the electric board rooms and main control room is being replaced.
4. Exposed cables in areas outside primary containment containing one or both safety related divisions are being coated with Flamastic.

Field Services Maintenance

(Continued)

5. To achieve positive access accountability door A-183 is being replaced and a card reader is being installed.
6. Conduit is being installed for response time testing of the Unit 2 refueling water storage tank level transmitters.
7. A reactor vessel head venting system is being added to Unit 1.
8. An oxygen analyzer is being installed on the auxiliary boilers.
9. To comply with TVA's SQN radiological emergency plan the telephone and radios located in the health physics laboratory, elevation 706', are being moved to the health physics laboratory, elevation 690', service building.
10. Three pressurizer condensate reservoirs are being fabricated for Unit 1 to ensure proper operation of the pressurizer instrumentation.

The following work was completed during the month.

1. Cables, junction boxes and conduit has been removed from the ABSCE dampers that were blocked open.
2. Environmentally qualified solenoids have been installed on various dampers.
3. A fuel transfer canal ladder has been installed to provide access from elevation 734' to elevation 686'.
4. A 3' by 3' opening in the A1 line wall in the auxiliary building has been closed with a 3-hour rated fire barrier.
5. The carbon steel supply and return lines to the incore instrument room chillers 2A and 2B have been replaced with stainless steel piping.
6. Block walls on elevation 690' auxiliary building have been modified by installing a steel plate on the walls in accordance with NCR SQNSWP8119.
7. An isolation valve has been installed in the 3 inch blowdown line to the cooling tower blowdown ahead of 1-FCV-15-8 to ensure that the steam generator blowdown to the cooling tower blowdown can be isolated in the event the valve is required to be closed.
8. Additional test connections have been installed on the Unit 2 feedwater taps.
9. The Unit 2 pressurizer level condensate pot vent lines have been extended to enhance maintenance.
10. A missing support on the Unit 2 reactor coolant pump #4 oil cooler line has been installed.