

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
SEQUOYAH NUCLEAR PLANT

MONTHLY OPERATING REPORT
TO THE
NUCLEAR REGULATORY COMMISSION
AUGUST 1, 1984 - AUGUST 31, 1984

UNIT 1

DOCKET NUMBER 50-327
LICENSE NUMBER DPR-77

UNIT 2

DOCKET NUMBER 50-328
LICENSE NUMBER DPR-79

Submitted By: P.R. Waller
Plant Manager

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TABLE OF CONTENTS

Operations Summary 1

Significant Operational Events 1-3

PORV's and Safety Valves Summary 3

Reports

 Licensee Events 3-6

 Diesel Generator Failure Reports 6

 Special Reports 6

Offsite Dose Calculation Manual Changes 6

Operating Data

 Unit 1 7-9

 Unit 2 10-12

Plant Maintenance Summary 13-26

Appendix A 27-37

Operations Summary

August, 1984

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

Unit 1

Unit 1 was critical for 718.5 hours, produced 746,040 MWH (gross), resulting in an average hourly gross load of 1,063,872 kW during the month. There are 283.8 full power days estimated remaining until the end of cycle 3 fuel. With a capacity factor of 85 percent, the target EOC exposure would be reached July 31, 1985. The capacity factor for the month was 84.8 percent.

There was one reactor scram, and no manual shutdowns, or power reductions during the month.

Unit 2

Unit 2 was critical for 514.3 hours, produced 538,060 MWH (gross), resulting in an average hourly gross load of 1,083,597 kW during the month. There are 6 full power days estimated remaining until the end of cycle 2 fuel. The cycle 2 refueling outage is scheduled to begin on September 21, 1984. The capacity factor for the month was 61.1 percent.

There was one reactor scram, one manual shutdown, no power reductions during the month.

Significant Operational Events

Unit 1

<u>Date</u>	<u>Time</u>	<u>Event</u>
08/01/84	0001	The reactor was in mode 1 at 100% power producing 1118 MWe. An investigation was underway to determine the lost generation.
08/27/84	2033	The reactor tripped following a steam flow/feedwater flow mismatch in loop 1 when the feedwater regulation valve failed closed.
08/28/84	2158	The reactor was taken critical.
08/29/84	1518	The turbine was tied on-line.
	1825	The reactor obtained 30% power and held due to steam generator chemistry.

Significant Operational Events

Unit 1

(Continued)

<u>Date</u>	<u>Time</u>	<u>Event</u>
08/30/84	1339	Began power ascension.
08/31/84	0518	The reactor was holding at 84% power while starting a #3 HDTP.
	0536	Resumed the power ascension.
	1400	The reactor obtained 99% power.
	2359	The reactor was in mode 1 at 99% power producing 1088 MWe. The investigation continues to determine the lost generation.

Unit 2

<u>Date</u>	<u>Time</u>	<u>Event</u>
08/01/84	0001	The reactor was in mode 1 at 100% power producing 1140 MWe.
08/20/84	1151	Began a manual shutdown due to a leaking pressurizer relief valve and failed rupture disk on the pressurizer relief tank.
	1337	The unit was taken off line.
	1356	The reactor entered mode 3.
	2035	The reactor entered mode 4.
08/21/84	1150	The reactor entered mode 5.
08/26/84	1713	The reactor entered mode 4.
08/27/84	1302	The reactor entered mode 3.
08/29/84	1944	The reactor was taken critical.
	2136	The reactor was in mode 2 at 4% power and holding due to chemistry.
08/30/84	0450	The reactor entered mode 1.
	0825	Tied the unit on line.

Significant Operational Events

Unit 2

(Continued)

<u>Date</u>	<u>Time</u>	<u>Event</u>
08/30/84	0843	The turbine tripped due a Hi-Hi #1 steam generator level followed by a reactor trip due to a Lo-Lo #3 steam generator level.
	1741	The reactor was taken critical.
	2122	Tied the unit on line.
08/31/84	0319	The reactor obtained 30% power and was holding steam generator chemistry to come into specification.
	2359	The reactor was in mode 1 at 30% power producing 288 MWe and was still holding due to steam generator 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 August 1984, to the Nuclear Regulatory Commission.

<u>LER</u>	<u>DESCRIPTION OF EVENT</u>
1-84044	On July 5, 1984 with unit 1 and 2 in mode 1 at 100% power, during the performance of SI-7, "Electrical Power Systems: Diesel Generators", the 1A-A diesel generator was started by a safety injection actuation start signal as required by the test. The 43T (L) switch was returned to the normal position from the test position prior to resetting of the safety injection signal. This condition resulted in automatic start of the remaining three (3) diesel generators.
1-84045	On June 25, 1984, unit 1 and 2 in mode 1 at 100% power, the A-A auxiliary control air compressor was taken out of service for maintenance. Due to insufficient spare parts, it was not returned to service. On July 9, 1984, at 0750 CST, the B-B auxiliary control air compressor was removed from service. These compressors are not technical specification equipment, but are attendant equipment for various safety systems (auxiliary feedwater being the most limiting with respect to action times). With both trains inoperable, it was determined that entry into 3.0.3 should be made, and

Licensee Events and Special Reports

(Continued)

<u>LER</u>	<u>DESCRIPTION OF EVENT</u>
1-84045	3.0.3 was entered at 0750 CST on July 9, 1984. Power reduction to mode 3 was initiated but was stopped at 88% when the BB compressor was returned to service.
1-84046	Following an inspection of various safety-related systems at Sequoyah, interactions were found that were not in compliance with Appendix R of 10 CFR 50. Fire watches have been established as required per action statement of Technical Specification 3.7.12 and will continue until compliance with Appendix R can be made. This report is required per license condition 2.H, 10 CFR 50.73 (a)(2)(ii) and special report requirements of Technical Specification 3.7.12. Interactions were found that involved power feeds from the 6900V shutdown board to the 480V shutdown transformers, redundant divisions of ERCW pump, fire pump, component cooling water pumps, auxiliary feedwater pumps and pressurizer heaters.
1-84047	<p>The auxiliary building (ABI) and containment building (CVI) isolations occurred at 0720 on July 17, 1984 while unit 1 was in mode 1 at 100% power.</p> <p>Maintenance personnel were troubleshooting the check source circuit on radiation monitor RM-90-141 when the check source wire slipped loose and fell against the 120 VAC input for RM-90-134 power supply. This caused breaker 12 on the 120 VAC vital instrument power board 1-II to trip. The resulting loss of power, train 'B', to the ratemeters on RM-90-112, RM-90-103, and RM-90-134 and RM-90-140 caused an ABI and a CVI. The ratemeters fail in the safe (trip) condition upon loss of power. The breaker, the radiation monitors, and the ABI and CVI logic were all reset and returned to service. No parts were replaced, and the check source circuit was repaired.</p>
1-84048	<p>During a review of instrumentation drawings, it was discovered that a reactor coolant coolant system (RCS) pressure channel did not presently exist in the field. Only one pressure channel, scaled 0-600 psig, was installed and operable. This 0-600 psig channel was rescaled to 0-3000 psig and placed in service to meet the two channel requirement. The 0-600 psig indicator is not required.</p> <p>A design change had been made the last refueling outage which moved the required channels. The existing channel indicator and a recorder were considered to fill the two channel requirement. After investigation, it was determined that the indicator and recorder were fed from the same transmitter and one indicator was scaled wrong, thus not providing two independent wide range indications. The rescaled channel will provide redundant pressure indication until the other indicator can be rewired.</p>

Licensee Events and Special Reports

(Continued)

<u>LER</u>	<u>DESCRIPTION OF EVENT</u>
1-84049	<p>Following additional inspections of various safety-related systems at Sequoyah, interactions were found that were not in compliance with Appendix R of 10 CFR50. Fire watches have been established as required per action statement of Technical Specification 3.7.12 and will continue until compliance with Appendix R can be made. This report is required per license condition 2.H, 10 CFR 50.73 (a)(2)(ii) and special report requirements Technical Specification 3.7.12.</p> <p>Interactions exist between:</p> <ul style="list-style-type: none">A. Train A and train B at elevation 749, in the 1A 480V transformer room.B. Train A and train B at elevation 749 in the 2B 480V transformer room.C. Train A and train B at elevation 759.0 in the unit 1 control rod equipment room.D. Train A and train B at elevation 759.0 of the unit 2 control rod drive equipment room.E. Cables at elevation 749 in the 480 V reactor MOV board room 2A.
2-84011	<p>This LER involves three separate incidents. The first containment ventilation isolation (CVI) occurred at 0124C on July 13, 1984, while unit 2 was in mode 1 at 100% power. The second CVI occurred at 0744C on July 14, 1984, while unit 2 was in mode 1 at 100% power. Third CVI occurred at 0158C on July 15, 1984, while unit 2 was in mode 1 at 100% power. The operator responded to the alarm (RM-90-112 for all three incidents) and determined that the alarm was in fact caused by a spurious spike and not by a high radiation level. Maintenance personnel were notified to check the monitor, reset the alarm in the control room, and repair or reset the monitor.</p> <p>In the first incident, an EMI spike was generated when the low flow switch was actuated due to the filter paper running out. No failure was found associated with the monitor and it was reset. Instrumentation is adding a time delay to the actuation signal to allow time for the spike to decay and prevent spurious CVI initiation.</p> <p>In the second and third incidents, an EMI spike occurred due to an unknown source. The transient was too short to be recorded.</p>

Licensee Events and Special Reports

(Continued)

<u>LER</u>	<u>DESCRIPTION OF EVENT</u>
2-84012	During surveillance testing for external piping leakage, both trains of the residual heat removal system were inoperable for two hours, forty-seven minutes on July 10, 1984 when valve HCV-74-34 (RHR to RWST recirc line isolation valve) was opened as part of the procedure for checking RHR pipe leakage.

Diesel Generator Failure Reports

There were no diesel generator failure reports transmitted during the month.

Special Reports

Special Report 84-03 was transmitted to the NRC on August 7, 1984. Concerning the inoperability of the fire detector in the mechanical equipment room of the auxiliary building in excess of fourteen days.

Offsite Dose Calculation Manual Changes

Changes in the Sequoyah Nuclear Plant ODCM are described in this section in accordance with Sequoyah Technical Specification 6.14.2.

These changes were officially approved by RARC on April 24, 1984. See Appendix A at the end of this report for the approved ODCM changes.

OPERATING DATA REPORT

DOCKET NO. 50-327
 DATE SEPTEMBER 5 1984
 COMPLETED BY M. G. EDDINGS
 TELEPHONE 615-870-6248

OPERATING STATUS

1. UNIT NAME: SEQUOYAH NUCLEAR PLANT, UNIT 1
 2. REPORT PERIOD: AUGUST 1984
 3. LICENSED THERMAL POWER(MWT): 3411.0
 4. NAMEPLATE RATING (GROSS MWE): 1220.6
 5. DESIGN ELECTRICAL RATING (NET MWE): 1148.0
 6. MAXIMUM DEPENDABLE CAPACITY (GROSS MWE): 1183.0
 7. MAXIMUM DEPENDABLE CAPACITY (NET MWE): 1148.0
 8. IF CHANGES OCCUR IN CAPACITY RATINGS (ITEMS NUMBERS 3 THROUGH 7) SINCE LAST REPORT, GIVE REASONS: _____

 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	744.00	5855.00	27792.00
12. NUMBER OF HOURS REACTOR WAS CRITICAL	718.50	3394.60	17836.16
13. REACTOR RESERVE SHUTDOWN HOURS	0.00	0.00	0.00
14. HOURS GENERATOR ON-LINE	701.25	3223.05	17336.20
15. UNIT RESERVE SHUTDOWN HOURS	0.00	0.00	0.00
16. GROSS THERMAL ENERGY GENERATED (MWH)	2301819.21	9936808.18	55428658.48
17. GROSS ELECTRICAL ENERGY GEN. (MWH)	746040.00	3245990.00	18625126.00
18. NET ELECTRICAL ENERGY GENERATED (MWH)	716572.00	3108379.00	17885307.00
19. UNIT SERVICE FACTOR	94.25	55.05	62.38
20. UNIT AVAILABILITY FACTOR	94.25	55.05	62.38
21. UNIT CAPACITY FACTOR (USING MDC NET)	83.90	46.25	56.06
22. UNIT CAPACITY FACTOR (USING DER NET)	83.90	46.25	56.06
23. UNIT FORCED OUTAGE RATE	5.75	28.27	20.09
24. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, AND DURATION OF EACH):	_____		
25. IF SHUTDOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP:	_____		

NOTE THAT THE THE YR.-TO-DATE AND CUMULATIVE VALUES HAVE BEEN UPDATED.

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-327
 UNIT NAME Sequoyah One
 DATE September 5, 1984
 COMPLETED BY M. G. Eddings
 TELEPHONE (615) 870-6248

REPORT MONTH AUGUST

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
13	840827	F	42.75	A	3	.			Reactor trip-steam flow/feedwater flow mismatch loop #1 feedwater regulator valve failed close.

-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 September 5, 1984
 COMPLETED BY M. G. Eddings
 TELEPHONE (615)870-6248

MONTH AUGUST

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1081	17	1063
2	1085	18	1062
3	1080	19	1063
4	1079	20	1060
5	1078	21	1062
6	1074	22	1061
7	1074	23	1061
8	1076	24	1060
9	1075	25	1063
10	1074	26	1064
11	1075	27	1040
12	1073	28	N/A
13	1072	29	173
14	1069	30	280
15	1066	31	945
16	1065		

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 SEPTEMBER 5, 1984
 COMPLETED BY D.C. DUPREE
 TELEPHONE (615)870-6248

OPERATING STATUS

1. UNIT NAME: SEQUOYAH NUCLEAR PLANT, UNIT 2 NOTES:
 2. REPORT PERIOD: AUGUST 1-31, 1984
 3. LICENSED THERMAL POWER (MWT): 3411.0
 4. NAMEPLATE RATING (GROSS MWE): 1220.6
 5. DESIGN ELECTRICAL RATING (NET MWE): 1148.0
 6. MAXIMUM DEPENDABLE CAPACITY (GROSS MWE): 1183.0
 7. MAXIMUM DEPENDABLE CAPACITY (NET MWE): 1148.0
 8. IF CHANGES OCCUR IN CAPACITY RATINGS (ITEMS NUMBERS 3 THROUGH 7) SINCE LAST REPORT, GIVE REASONS: _____

 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	744.00	5855.00	19752.00
12. NUMBER OF HOURS REACTOR WAS CRITICAL	514.30	5549.70	15910.77
13. REACTOR RESERVE SHUTDOWN HOURS	0.00	0.00	0.00
14. HOURS GENERATOR ON-LINE	496.55	5455.62	15609.94
15. UNIT RESERVE SHUTDOWN HOURS	0.00	0.00	0.00
16. GROSS THERMAL ENERGY GENERATED (MWH)	1626829.80	17978339.65	50396407.46
17. GROSS ELECTRICAL ENERGY GEN. (MWH)	538060.00	6138350.00	17170290.00
18. NET ELECTRICAL ENERGY GENERATED (MWH)	516879.00	5914343.00	16532080.60
19. UNIT SERVICE FACTOR	66.74	93.18	79.03
20. UNIT AVAILABILITY FACTOR	66.74	93.18	79.03
21. UNIT CAPACITY FACTOR (USING MDC NET)	60.52	87.99	72.91
22. UNIT CAPACITY FACTOR (USING DER NET)	60.52	87.99	72.91
23. UNIT FORCED OUTAGE RATE	33.26	5.90	8.11
24. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, AND DURATION OF EACH): <u>Refueling/Modification Outage - Cycle 2, Setpember 21, 1984, 56 days.</u>			
25. IF SHUTDOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP: _____			

NOTE THAT THE THE YR.-TO-DATE AND CUMULATIVE VALUES HAVE BEEN UPDATED.

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-328
 UNIT NAME Sequoyah Two
 DATE September 5, 1984
 COMPLETED BY D. C. Dupree
 TELEPHONE (615)870-6248

REPORT MONTH AUGUST

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	840820	F	234.80	A	1				Ruptured the diaphragm in the pressurizer relief tank. PRZ relief valve leaking.
7	840830	F	12.65	G	3				Unit operators over fed the steam generators causing the turbine and reactor to trip.

-II-

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. 50-328
 UNIT Sequoyah Two
 DATE September 5, 1984
 COMPLETED BY D. C. Dupree
 TELEPHONE (615)870-6248

MONTH AUGUST

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1098	17	1093
2	1098	18	1062
3	1096	19	1090
4	1095	20	1078
5	1094	21	N/A
6	1093	22	N/A
7	1095	23	N/A
8	1092	24	N/A
9	1094	25	N/A
10	1095	26	N/A
11	1096	27	N/A
12	1096	28	N/A
13	1097	29	N/A
14	1098	30	5
15	1095	31	239
16	1094		

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 August 1984:

Mechanical Maintenance

1. Installed a furmanite box on the orifice flange of 1-FE-3-163 and injected with Furmanite to stop a leak.
2. Replaced a defective pump on the unit 2 EHC system to lower the EHC fluid temperature.
3. Completed work on the 2D cooling tower lift pump and repaired welds on the 2A mixed bed demin tank and associated piping.
4. The condensate demineralizer waste evaporator heater was found to have a broken weld and a crack in the shell. Vendor representatives from HPD, Inc. assisted in the repairs.
5. Perform SI-102 monthly inspections on the 1A-A, 1B-B, and 2A-A diesel generators.
6. Replaced the 1A-A high pressure fire protection pump with a spare pump due to worsening base-line data recorded during SI-73. The defective pump is being rebuilt for use as a spare pump.
7. Pressurizer safety valve 2-VLV-68-563 was replaced with a spare valve due to excessive leakage. The defective valve is being rebuilt and tested for use as a spare valve.
8. Welded a scab plate to the ERCW piping above the "B" component cooling system heat exchanger due to a leak caused by cavitation erosion in the system.
9. Replaced 2 rupture disks on the pressurizer relief tank found ruptured during inspection and maintenance.
10. Began rekeying plant doors due to the loss of some important keys. These doors include CSSC and non-CSSC doors in all areas of the plant.
11. Replaced a broken nipple on the CCS heat exchanger vent valve.
12. Removed the RHR hot leg injection relief valve 2-LVL-63-637 thought to be leaking and verified it to be within the setpoint range.
13. Replaced a leaking drain valve 2-VLV-68-568 for the pressurizer safety valve 2-VLV-68-565 loop by welding.
14. The SIS pump suction check valve 2-VLV-63-510 failed an SI. The valve was disassembled, inspected, reassembled and retested successfully.
15. Replaced the solenoid on 2-FSV-62-9.
16. Replaced the relief valve on the 1B1 feedwater heater.
17. Rebuilt the solenoid on 2-FSV-90-109.

Plant Maintenance Summary
Electrical Maintenance

10:59:16 DATE...	09-11-84 COMPONENT.....	ELECTRICAL MONTHLY REPORT FAILURE DESCRIPTION.....	REPORT CAUSE OF FAILURE.....	PAGE 1 CORRECTIVE ACTION.....	PRO#....
84-08-0 3	1-BDC-201-JN/1 1E2	BREAKER SUPPLY FOR 480 VOLT RECEPTACLE IN CONTAINMENT AND AUXILIARY BUILDING TRIPPED AND SMOKED	SHORT IN CABLE LEAVING PANEL (CABLE WAS REPAIRED ON ANOTHER MR) (CABLE REPAIRED WAS NOT CSSC)	REPLACED BREAKER PER MAINTANCE INSTRUCTION 6.20	NONE
84-08-2 3	0-BCTD-065-004 2-B	OVERLOAD HEATER ON EGTS TRAIN B FAN B-B MOTOR KICKS MOTOR OUT CAUSING FAN NOT TO OPERATE	WRONG OVERLOAD HEATER WAS INSTALLED	REPLACED OVERLOAD HEATER 42227 WITH OVERLOAD HEATER 42324	NONE
84-08-0 8	2-HS-067-0126- 8	LIGHT BULB MISSING	BULB BROKE LEAVING BASE OF BULB IN SOCKET	REMOVED BROKEN BULB AND REPLACED WITH NEW BULB	NONE
84-08-0 8	0-VLV-311-0021	A.H.U. "AA" HUMIDITY CONTROL VALVE WILL NOT OPERATE WHEN A SIGNAL IS GIVEN	ELECTRICAL CONTACTS ON MOTOR WOULD NOT MAKE CONTACT	CLEANED AND LUBRICATED MOTOR CLEANED ELECTRICAL CONTACTS AND REINSTALLED MOTOR	NONE
84-08-0 9	1-BKRC-201-KE/ 203-A	BREAKER #203 ON 480 VOLT SHUT DOWN BOARD SHOWED A GROUND	TRIP COIL BURNT UP DEAD GROUND	TRIP COIL WAS REPLACED ON ANOTHER MR	NONE
84-08-0 1	2-GENB-082-002 8-B	VERIFY THAT THE MECHANICAL OVERSPEED TRIP (OST) ON DIESEL 2B-B PREVENTS STARTING SIMULATE A TRIP SIGNAL	NO FAILURE PREVENTIVE MAINTANCE	PLACED JUMPERS PER MI6.20 VERIFIED THAT RELAYS SDR, SDRX AND SDRX1 PICKED UP AND THAT DIESEL WOULD NOT START RESET THE SHUT DOWN RELAYS	NONE
84-08-2 3	2-FSV-067-0350	FLOW SWITCH ON FAN 2B WOULD CYCLE IN STANDBY POSITION	FLOW SWITCH DIRTY CONTACTS	REMOVED AND CLEANED FLOW SWITCH CONTACTS	NONE
84-08-2 3	2-HS-067-0124- 8	GREEN LIGHT WILL NOT STAY ON CONTAINMENT SPRAY CONTROL SUPPLY VALVE	PIN BROKEN ON SOCKET FROM GREEN LAMP OF CONTAINMENT SPRAY SUPPLY VALVE	PIN WAS REPLACED ON ANOTHER MR	NONE
84-08-2 3	0-CHR-311-0171	FREON LOW	LOW ON FREON IN SIGHT GLASS NO FAILURE	ADDED FREON TO PROPER LEVEL	NONE
84-08-2	2-HS-063-0167	RED LIGHT ON HAND SWITCH	LIMIT SWITCH ON VALVE IN	ADJUSTED LIMIT SWITCH	NONE

Plant Maintenance Summary
Electrical Maintenance

Page 2 of 4

10:59:16 DATE...	09-11-84 COMPONENT.....	ELECTRICAL MONTHLY REPORT FAILURE DESCRIPTION.....	CAUSE OF FAILURE.....	PAGE 2 CORRECTIVE ACTION.....	PROV....
3		WILL NOT WORK	#4 ACCUMULATOR ROOM OUT OF ADJUSTMENT	ACTUATION ROD	
84-08-2 3	0-HTCK-234-030 OP	ALARM ON HEAT TRACE TEMPERATURE CONTROLLER ON CVCS IS ON	TEMPERTURE CONTROLLER SOCKET ON CKT ALARM OF CVCS IS BAD	REPLACED TEMPERTURE CONTROLLER SOCKET	NONE
84-03-2 3	0-PCV-077-0145 -A	"G" WASTE GAS DECAY TANK VALVE WILL NOT OPEN	BAD SOLENOID COIL ON VALVE	REPLACED SOLENOID COIL	NONE
84-8-31	1-COMP-061-001 2-A	GLYCOL CHILLER PACKAGE B COMPRESSOR TRIPS OUT	NO TROUBLE FOUND	OBSERVED COMPRESSOR FOR ONE HOUR NO TROUBLE FOUND	NONE
84-07-3 1	0-XS-013-0160- D	INDICATOR BULB IN HEAT DETECTOR IN FAN ROOM EL 714 DOES NOT BURN	BULB BAD	REPLACED INDICATOR BULB	NONE
84-07-3 1	2-HTCK-234-002 8-P	LIGHT STAYS ON C.V.C HEAT TRACE SHOWING ALARM	NO FAILURE	OBSERVED ALARM LIGHT FOR ONE HOUR WORKED PERFECTLY	NONE
84-07-3 1	2-FSV-001-0025 -B	STEAM GENERATOR BLOWDOWN VALVE SHOWED 100 VOLT GROUND	NO FAILURE	OBSERVED BLOWDOWN VALVE FOR GROUND APPROX. ONE HOUR WORKED OK	NONE
84-07-3 1	1-MTRB-313-00J G	18 480 VOLT ROOM AIR HANDLING PACK CHILLER PACKAGE START FOR RUNS FOR APPROX. 1 MIN THEN TRIPS ON LOW OIL PRESSURE	LOW OIL LEVEL	ADDED 1/2 GAL. OF 4GS OIL	NONE
84-07-3 1	0-LOCL-013-061 6	ALARM LIGHT DOES NOT BURN ON CP 30	FAULTY ALARM LIGHT	REPLACED ALARM LIGHT	NONE
84-07-3 1	0-XS-013-0151- D	SMOKE DETECTOR DOES NOT WORK IN NEW FUEL STORAGE AREA	BAD DETECTOR	REPLACED DETECTOR ON XS-13-1510	NONE
84-07-3 1	2-LOCL-013-062 2	ALARM HORN ON CP30 NOT WORKING	BAD HORN	HORN WAS REPLACED ON ANOTHER MR ON PANEL HORN WORKING OK NOW	NONE

10:59:16	09-11-84	ELECTRICAL MONTHLY REPORT		PAGE 3	
DATE...	COMPONENT.....	FAILURE DESCRIPTION.....	CAUSE OF FAILURE.....	CORRECTIVE ACTION.....	PROV....
84-07-3 1	0-LOCL-013-061 9	AUDIBLE ALARM DOES NOT WORK ON PYRONTICIS PANEL #619	BAD ALARM	ALARM WAS REPLACED ON ANOTHER MR, WORKING CORRECTLY NOW	NONE
84-07-3 1	0-XS-013-0150- A	WHITE LIGHT ON DETECTOR IN CASK LOADING AREA DOES NOT COME ON	BAD INDICATOR LIGHT BULB	REPLACED INDICATOR BULB	NONE
84-07-3 1	0-CHR-031-0338 -A	BOARD ROOM CHILLER PACKAGE B-B WILL NOT START	SAFETY SWITCHES MAY HAVE SEEN STICKING	NO TROUBLE FOUND NO WORK PERFORMED	NONE
84-07-3 1	1-MTRB-031-JE/ 11D-A	480 VOLT BOARD ROOM CHILLER LOW ON FREON	NO FAILURE	CHECKED FREON, FREON WAS NORMAL	NONE
84-07-3 1	2-ZS-062-0118- A	BOTH LIGHTS STAY ON REGARDLESS OF VALV POSITION OF LET DOWN VALVE 0118-A	ACTUATOR ARM ON LIMIT SWITCH OUT OF ADJUSTMENT	ADJUSTED LIMIT SWITCH ARM	NONE
84-07-3 1	2-ZS-062-0192- B	LIMIT SWITCH ON B EVAPORATOR RECIRCULATING VALVE WILL NOT WORK	LIMIT SWITCH OUT OF ADJUSTMENT	ADJUSTED LIMIT SWITCH	NONE
84-07-3 1	2-ZS-062-0164	B EVAPORATE BORIC ACID #1 CONCENTRATE PUMP SUCTION VALVE WILL NOT WORK	LIMIT SWITCH OUT OF ADJUSTMENT	ADJUSTED LIMIT SWITCH	NONE
84-07-3 1	1-ZS-062-0192- D	A BORIC ACID EVAPORATE RECIRCULATING VALVE WILL NOT WORK	LIMIT SWITCH ON VALVE OUT OF ADJUSTMENT	ADJUSTED ARM ON LIMIT SWITCH	NONE
84-07-3 1	1-LS-077-0411	POCKET SUMP LEVEL INSTRUMENT LOOP WILL NOT LET PUMP 1A RUN	CABLES ARE SUSPECTED TO BE ROLLED	CHECKED OUT CIRCUIT AND FUNCTIONALLY TESTED FOR PROPER OPERATIONS FOUND NO PROBLEMS	NONE
84-07-3 1	2-XS-013-0155- B	SMOKE DETECTOR ON XS-13-155B WILL NOT OPERATE ON PANEL 611	SMOKE DETECTOR DEFECTIVE	REPLACED SMOKE DETECTOR	NONE
84-07-3	0-CHR-031-0338	BOARD ROOM WATER CHILLER	BAD OIL HEATER BREAKER	REPLACED OIL HEATER	NONE

Plant Maintenance Summary
Electrical Maintenance

10:59:16 09-11-84

ELECTRICAL MONTHLY REPORT

PAGE 4

DATE...	COMPONENT.....	FAILURE DESCRIPTION.....	CAUSE OF FAILURE.....	CORRECTIVE ACTION.....	PRO#....
1	-A	B-B OIL HEATER RELAY WILL NOT STAY IN WHEN UNIT IS OFF		BREAKER	

31 records listed.

Plant Maintenance Summary

(Continued)

Instrument Maintenance

1. During the month, there were no spurious actuations of containment vent or auxiliary building vent isolations for either unit. There was a unit 1 containment isolation and a train A isolation of the auxiliary building on August 30, 1984, as a result of loss of AC power to train A rad monitors during maintenance on the lower containment Iodine rad monitoring channel. The addition of the time delay relays to the actuation circuits have proved to be effective.
2. The monthly calibration check of the UHI level switches found unit 1 switches, LS-87-21 and LS-87-24 out of tech spec tolerance. All unit 2 switches were within tech spec tolerance.

Unit 1

1. On August 15, 1984, pressurizer level channel L-68-320 began reading high. The constant head condensate pot was vented to bring the channel within tolerance of the other channels. On August 27, 1984, channel L-68-335 was reading low. Sense lines and drain lines were checked for leaks but none were found. The condensate pot for channel L-68-339 was backfilled to bring all channels within tolerance. Following the unit trip, LT-68-320 was calibrated and backfilled. After the unit startup, channel L-68-320 was vented again on August 30, 1984.
2. On August 15, number 2 governor valve control channel experienced spiking. Changing out both speed error cards did not correct the problem. Following the unit trip, the B speed channel card was replaced and calibrated. On August 30, 1984, when the turbine was being rolled for startup, the new B speed channel card failed. The original card was reinstalled and the unit brought on line. Troubleshooting all repairs are planned during the next forced outage.

Unit 2

1. On August 8, 1984 during performance of the monthly test of reactor protection system logic, the reactor trip breaker tripped out of sequence. Troubleshooting discovered a shorted input diode in the testing circuit which caused actuation of the breaker during testing. The bypass breaker was in service during the test so the unit was not affected.
2. While the unit was in the forced outage to replace the leaking safety valve, both level channels for the PRT were verified. LT-68-300, the normal channel was within tolerance at lower range but was high at the 100% point. LT-68-312C, the backup channel, required calibration due to normal drift. The acoustic monitoring and safety valve tailpipe temperature channels were functionally tested and found to be operable.
3. On August 22, 1984, after the unit reached mode 5, NIS source range channel N-32 developed noise. The detector assembly for N-32 and intermediate range channel N-36 was replaced. New plateau curves were plotted and the channels were recalibrated and returned to service.

Plant Maintenance Summary

(Continued)

Instrument Maintenance

(Continued)

Unit 2 (Continued)

4. Performed on-line loop current step response test for loop 3 wide range RCS RTDs.
5. Throttle valve number 2 remained close until August 14, 1984. It was decided to determine if the valve would stay closed if EHC oil was reestablished. The valve came open and remained stable until August 20, 1984. The EHC oil was isolated and the valve remains closed. Repairs are planned during the upcoming refueling outage.
6. Other maintenance work is shown on the attached list.

COMP

MR. COMP	U	FLNC	SYS	ADDRESS.	DATE....	DESCRIPTION.....	CORRECTIVE ACTION.....
A093123	0	FC	020	149	08/10/84	0-FC-030-149, CALIBRATE LOOP AND VERIFY SETPOINT. #NPRD#	THE AUXILIARY BUILDING GAS TURBINE SWITCH EXHAUST FAN A-A VACUUM RELIEF FLOW CONTROLLER WAS <i>LOW</i> RAN A LOOP CHECK AND CALIBRATED THE CURRENT TO PRESSURE PER VENDORS MANUAL.
A093124	0	FC	030	148	08/10/84	0-FC-030-149, CALIBRATE LOOP AND VERIFY SETPOINT. #NPRD#	CAL. VERIFIED PER ENGR. VERIFIED CAL. NO PROBLEMS FOUND.
A121391	2	LI	068	300	08/23/84	2-LI-068-300, CHECK PRT LEVEL TRANSMITTER CALIBRATION PRIOR TO REPLACEMENT OF DIAPHRAGM AND AFTER THE DIAPHRAGM IS REPLACED.	THE REACTOR COOLANT PRESSURIZER RELIEF TANK TRANSMITTER WAS REQUESTED TO HAVE A CALIBRATION VERIFICATION. THE TRANSMITTER WAS FOUND OUT OF CALIBRATION DUE TO NATURAL CALIBRATION DRIFTS. RECALIBRATED THE TRANSMITTER VERIFIED OPERATION AND RETURNED TO SERVICE.
A121555	1	LIC	003	148	08/28/84	1-LIC-003-148, LIC ALLOWS 125 OPEN FLOW WHEN S/G 3 LEVEL IS AT 58% AND THE CONTROLLER IS IN AUTO.	THE STEAM GENERATOR HG CONTROLLER WAS ALLOWING ONE HUNDRED AND TWENTY FIVE GALLONS PER MINUTE FLOW. REPLACED THE CAPACITOR ON THE VOLTAGE TO CURRENT BOARD VERIFIED OPERATION AND RETURNED TO SERVICE.
A238682	1	FT	002	256	08/06/84	1-FT-002-256, REMOVE 1-FT-2-256 FROM SERVICE PER TACF 1-84-85-2. INSTALL NEW FCI MODEL LT81 TRANSMITTER PER TACF.	A REQUEST WAS MADE TO CHANGE THE TRANSMITTER TO A NEWER MODEL. THE TRANSMITTER WAS CHANGED, CALIBRATED AND RETURNED TO SERVICE.
A238885	2	FCV	032	103	08/07/84	2-FCV-032-103, 2-FCV-32-103 WILL NOT STAY OPEN WHEN 2-FSV-103B IS DEENERGIZED	WOULD NOT STAY OPEN DUE TO THE PRESSURE INDICATOR CONTROLLER NOT WITHIN CALIBRATION LIMITS. RECALIBRATED THE PRESSURE INDICATOR CONTROLLER, VERIFIED OPERATION AND RETURNED TO SERVICE.
A239830	1	LM	068	3700	08/15/84	1-LM-068-3700, OUTPUT OF 1-LM-68-3700 HAS FAILED LOW. NEEDS TO BE REPAIRED.	THE REACTOR LEVEL WIDE RANGE LEVEL INDICATOR WAS REPORTED FAILING LOW. THE CIRCUIT CARD WAS FOUND WITH A BAD OPERATIONAL AMPLIFIER. THE OPERATIONAL AMPLIFIER WAS INSTALLED OPERATION WAS VERIFIED AND RETURNED TO SERVICE.
A239968	2	TI	074	40C	08/24/84	2-TI-074-40C, INDICATOR WAS STICKING WHEN SI 87 WAS PERFORMED. NEEDS TO BE REPLACED.	THE INDICATOR WAS STICKING DURING THE PERFORMANCE OF A SURVEILLANCE INSTRUCTIONS. REPLACED THE GAUGE WITH A NEW INDICATOR CALIBRATED AND RETURNED TO SERVICE.

INSTRUMENT MAINTENANCE MONTHLY SUMMARY 09-11-84

PAGE 2

MR. COMP U FUNC SYS ADDRESS. DATE.... DESCRIPTION..... CORRECTIVE ACTION.....

A242400	2	099	08/23/84	2-099-, 120V BUSS 1 INDICATOR LIGHT HAS WIRE BROKEN OFF LIGHT SOCKET	THE SOLID STATE PROTECTION SYSTEM WAS FOUND WITH AN INDICATOR LIGHT NOT OPERATING. A WIRE WAS FOUND BROKEN BETWEEN THE 120V BUSS #1 AND THE INDICATOR LIGHT. RESOLDERED THE LOOSE WIRE AND FUNCTIONALLY TESTED THE SSPTS TRAIN A.
A245677	0	HZAN 043 5001	08/23/84	0-HZAN-043-5001, CLEAN WATER AND MOISTURE OUT OF LINES TO ALLOW PROPER OPERATION OF SAMPLE PUMPS AND ANALYZERS ENSURE MONITORS READY FOR SERVICE.	CLOGGED INLET FILTER. REPLACED FILTER, CALIBRATED & RETURNED TO SERVICE.
A245698	1	FI 068 718	08/27/84	1-FI-068-718, #1# PLEASE CAL. - INTR. DRIFTED LOW.	STATIC HOLDING INDICATOR LOW. SPRAYED FT WITH ANTI-STATIC SPRAY.
A285261	2	TI 068 398	08/15/84	2-TI-068-398, PERFORM FUNCTIONAL TEST OF LOOP PER ATTACHED LOOP SHEETS AFTER FSE HAS COMPLETED THEIR WORK IN RACK 2-R-14B.	NOT IN SERVICE AT TIME PR INITIATED. POWERED UP & VERIFIED CAL.
A285262	1	LI 068 372F	08/13/84	1-LI-068-372F, CHECK FUSE IN POWER SUPPLY FOR FAILURE INDICATOR READING ZERO PERCENT & SHOULD BE UPSCALE	CHECK FUSES PER ENCR. CHECKED FUSES, NO PROBLEM FOUND.
A285264	1	LT 068 339	08/28/84	1-LT-068-339, BACKFILL TRANSMITTER SENSE LINE THROUGH CONSTANT REFERENCE POT INTO PZZR TO PURGE POSSIBLE AIR IN SENSE LINE.	THE REACTOR COOLANT SYSTEM PRESSURIZER LEVEL TRANSMITTER WAS REQUESTED TO HAVE A CONSTANT REFERENCE POT <i>BACKFILLED TO PRESSURIZER</i> , THE TRANSMITTER WAS NOT OPERATING PROPERLY DUE TO AIR INTRUSION IN THE SENSE LINES. REMOVED FROM SERVICE AND BACKFILLED AND RETURNED TO SERVICE.
A285344	1	LT 068 320	08/30/84	1-LT-068-320, CHECK CALIBRATION OF 1-LT-68-320.	LOST FILLED LEG. REFILLED LEG.
A285349	1	LI 068 320	08/31/84	1-LI-068-320, 1-LI-68-320 IS READING 4.9% HIGHER THAN THE OTHER 2 LEVEL CHANNELS.	AIR IN SENSE LINE. BURPED SENSE LINE TO REMOVE AIR FROM LINE
A285805	2	FCV 068 396	08/02/84	2-FCV-068-396, CHECK VALVE AND INDICATION LOOP TO AND FROM 2-HCI-68-396 WHICH PERIODICALLY DRIFTS FULLY OPEN.	THE CURRENT TO CURRENT CABLES ARE SUSPECTED OF PICKING UP BACKGROUND NOISE CAUSING THE FCV TO PERIODICALLY DRIFT OPEN. A WORK PLAN WILL BE SUBMITTED FOR UNIT 2 OUTAGE.
A285839	2	FS 001 218	08/28/84	2-FS-001-218, #1# BISTABLE LIGHT ON STEAM FLOW INDICATORS ZERO PER HOUR MSIV CLOSED AND ZERO PSI ON #3 S/G	LOST FILLED LEG. NONE PROBLEM CLEARED DUE TO CONDENSATION REFILLING LFG.
A285857	2	085 M2	08/02/84	2-085-M2, SHUTDOWN BANK ROD M-2 HAS POSSIBLE BAD CONNECTION ON RPI DUE TO DRIFTS FROM 200 STEPS TO 228 STEPS. INVESTIGATE AND REPAIR AS	THE SHUTDOWN BANK ROD M-2 HAD A BAD CONNECTION AT THE VESSEL HEAD. REPAIRED THE CONNECTION, VERIFIED

INSTRUMENT MAINTENANCE MONTHLY SUMMARY 09-11-84

PAGE 3

COMP

MR.	COMP	U	FUNC	SYS	ADDRESS.	DATE....	DESCRIPTION.....	CORRECTIVE ACTION.....
							NECESSARY.	OPERATION AND RETURNED TO SERVICE.
A285942	1	RM	090	1008	08/27/84	1-RM-090-1008, RAD MONITOR 1008 FOR SHIELD BLDG WONT SOURCE CHECK CORRECTLY		CHECK SOURCE STICKING DUE TO BENT WIRE. STRAIGHTENED WIRE & FREED CHECK SOURCE.
A291030	1	H2AN	043	200	08/09/84	1-H2AN-043-200, 1% H2 CAL GAS BEING DEPLETED RAPIDLY		LEAKING FITTING. TIGHTENED FITTING.
A291032	0	CLAN	043	205A/205	08/11/84	0-CLAN-043-205A/205, REPLACE GLASS ORIFICE IN EACH DETECTOR (TRAIN "A" & "B")		STOPPED UP FLOW ORFICES. REPLACED ORFICES & TESTED.
A291045	2		043	210	08/28/84	2--043-210, INDICATOR READING .3% HIGHER THAN ANALYZER.		INDICATOR OUT OF CAL. RECAL INDICATOR.
A293174	1	LI	068	335A	08/28/84	1-LI-068-335A, *I* LEVEL INDICATOR IS DRIFTING DOWN		AIR IN LINES. BURPED SENSE POT TO REMOVE AIR.
A293177	1	PCV	047	190	08/29/84	1-PCV-047-190, *I* UNLOADER VALVE IS MALFUNCTIONING NOT MAINTAINING SYSTEM PRESSURE PROPERLY.		UNLOADER OUT OF ADJUSTMENT. ADJUSTED UNLOADER "A" & "B" & RELIEF.
A293236	2	XE	092	5002	08/24/84	2-XE-092-5002, INVESTIGATE AND REPAIR AS NEEDED - THE DETECTOR HAS AN UNCONTROLLED INCREASE IN CPS		THE SOURCE RANGE DETECTOR CHANNEL N32 WAS REPORTED INCREASING IN COUNTS PER SECOND AT A RAPID RATE. REPLACED THE DETECTOR RECALIBRATED AND RETURNED TO SERVICE.

26 records listed.

Plant Maintenance Summary

(Continued)

Modifications Group

1. ECN 5237- Laundry Facility

The work on the HVAC continued. The duct work was completed except testing and completion of the air plenum around the dry cleaners. The mechanical tie-in for the chiller package was completed. The fans are being tested.

2. ECN 5645 - Steam Generator Blowdown System - Unit 2

During the recent unit 2 outage final tie-ins were made to the blowdown line for the heat exchangers, the drain to the turbine building sump and some instrumentations connections. Work continues on the remaining instrumentation and insulation installation. All non-outage electrical work is complete.

3. ECN 2768 - Reactor Pressure Vessel Level Indication System (RVLIS) (Unit 2)

During the unit 2 outage a major effort was made to finalize routing details inside the crane wall. Some hangers were installed in the raceway and inside the crane wall. Work has been completed in the annulus and penetration room. Since the outage prefabrication work has begun utilizing the details obtained during the outage, all workplans have been written and approved except one which involves a vendor procedure not yet received. All outside containment conduit is complete.

4. ECN 6055 - Wide Range Pressure Transmitter to the RVLIS Panel

Mechanical work is in progress. Conduit work continues. Cable pulling and termination workplans are being prepared. ENDES and instrument maintenance are making changes to the unit 2 control room indicators.

5. ECN 5194 - Iodine Monitoring Building

The control air tie-in was made during the unit 2 outage. Installation of lead brick which is on order is the only mechanical activity remaining. All electrical work in piping room is complete. Work is in progress in MCR.

6. ECN 5024 - Lay-up Water Treatment

During the unit 2 outage, one of two hangers was installed in the west valve room. A detailed walkdown of the area in the valve room was also performed. The pipe prefabrication continued and is approximately 50% complete. Electrical work remaining includes heat trace installation and function testing of the pressure switches.

7. ECN 5009 - ERCW Piping Change-Out

Prefabrication of piping for the installation of stainless steel pipe for the centrifugal charging pump room coolers continues. Installation is planned for the unit 2 cycle 2 refueling outage.

Plant Maintenance Summary

(Continued)

Modifications Group

(Continued)

8. ECN 5202 - Interfacing the Diesel Generator Buildings and the Power House
Workplan preparation continues for the ERCW tie-ins required for the diesel generators.
9. ECN 5842 - Replacement of PCV-3-122 and -132
Field work was started on three hangers. Additional work to be performed during the refueling outage.
11. ECN 5938 - Feedwater Heater Tube Change-Out
Work is scheduled for the refueling outage.
12. NUREG 0588
ECN L5457 Remaining items are scheduled for the outage.
ECN L5895 Solenoid changeout will begin as soon as new splicing procedure is approved.
ECN L6032 H₂ analyzer relocation - during the outage the shield building penetrations were installed. Tubing work continues in both the auxiliary building and annulus.
ECN L5883 Pres. switch reloaction - piping work in the auxiliary building was started. It is planned to be completed before the outage scheduled September 21, 1984.
ECN L5881 Work began on fabricating brackets for limit switches.
ECN L5823 Six pressure switches have been changed out.
ECN L5824 Seven of 125 valve operators have been replaced.
ECN L5370 Workplan 10617 - 15 of 16 motors replaced. Sixteenth motor is awaiting repair or to be transferred in from Hartsville.
ECN L6200 Press. transmitter relocation - this workplan was written, approved and work started. Tubing work continues and is anticipated to be completed by September 21, 1984.

A flow transmitter for L5884 has been reordered.
12. ECN 6182
Workplan preparation was started and contractor scheduled to arrive during August.
13. ECN 5664 - Wells Fargo AS-24 Cards Relay Change-Out
Field work on the boxes and CAS/SAS terminations work continues. Cable pulling is in progress.

Plant Maintenance Summary

(Continued)

Modifications Group

(Continued)

14. ECN 5172 & 5968 - Emergency Lighting-SDFWP, AFP, FW REG VLVS and MS Power Operated Relief VLV Areas

Installation of new conduit, strobe lights, and sirens continued. Estimated completion of WP 10578 is around mid October if worked during upcoming unit 2 outage.

15. ECN 5770 - Installation of New Rad Monitor in the Condenser Exhaust

Work in pane 2-M 3D is in progress.

16. ECN 5867 - Unit 2 Spend Fuel Transfer System

Westinghouse modifications are complete on the pit side and work is complete on reactor side. Functional test is underway.

17. ECN 5871 - Relocation of the ERCW Rad Monitor

Work is complete.

18. ECN L2780- Post Accident Sampling Facility Unit 2

The HVAC duct work is installed and hanger work continues. Test running of the system is scheduled for this month. Miscellaneous tubing work continues. Sealing of the enclosures was started and continues. The Fire Protection System tie-in and hydro testing was completed. During the outage, a walkdown on the containment work was performed. Electrical systems are 95% complete. Functional testing of HVAC has commenced.

19. ECN L5198 - Technical Support Center (TSC) Unit 2

The control building conduit installation on elevation 685 is complete. DPM 50 and P250 tie work is continuing as well as cable installation.

20. ECN L5723 - Condensor Sparger Relocation

Outage prefabrication was started and completed during this time period. The remaining work will be completed during the U2-C2 refuel outage.

21. ECN L6050 - Hangers For Fire Protection

The work is 99% complete.

22. ECN L6071 - Installation of Shield Wall El. 690

This wall was formed and poured during this period. Paint work remains.

Plant Maintenance Summary

(Continued)

Modifications Group

(Continued)

23. ECN L5552 - Hi Crud Filter System Modification

The system was declared manually operable on September 1, 1984 and met TVA's commitment to EPA. Pre-op testing of the systems continued for the automatic operation of the system. Overall 95% of the work is complete.

24. ECN L5841 - Hot Machine Shop Modifications

All civil and mechanical decipline related work is complete. Electrical power supply for the machine shop and decon shipment is continuing. EN DES engineers are evaluating field conditic.. to provide a monorail and hoist over the electro polisher equipment. Overall 95% of the work is complete.

25. EN DES Office Complex

EN DES office complex buildings are complete and the majority of the EN DES engineers have occupied the buildings. Outside work line grading drainage, sidewalk, fence, etc. continuing.

26. Common Service Station Transformer "D"

Transformer "D" is ready to be energized as soon as the fire protection spray valve is repaired.

27. ECN L5503 - Office and Power Stores Building

Work is overall 85% complete.

28. ECN L5599 - Fifth Vital Battery

Workplan preparation to perform tie-in to existing boards is continuing.

29. ECN L5609 - Water Treatment Demin Water Storage Building

Overall 90% of the work is complete.

30. ECNs - L5933, L5934, L5935 - Security Power Block

Overall 75% complete.

Contractor - Cooling Towers Repair

Custodis Ecodyne Inc. continued working on the cooling towers repair work. At this time cooling tower B is being repaired. All fill (plastic and metal) material that was damaged during last winter has been removed, permission from the Department of Public Health, State of Tennessee, has been obtained for disposal of the damaged material at Hamilton County Landfill.

APPENDIX A
SEQUOYAH NUCLEAR PLANT
ODCM CHANGES

CHANGE 1

Description of change

The comment explaining the conversion from mrem to rem was moved in front of equation 2.13 on page 22 in order to clarify the dose equation. No model changes are reflected in this change; therefore, no evaluations are necessary.

CHANGE 2

Description of change

A previously omitted conversion factor of 0.1 was added to the list of definitions following the equation on page 24. No model changes are reflected in this change; therefore, no evaluations are necessary.

CHANGE 3

Description of change

The isotope fractions appearing in equation 2.18 were changed. The changes appear on page 25.

Analysis or evaluation justifying change

The fractions used previously were found to exclude a conversion factor of 0.1 necessary to correct the units and had not been divided by the factor of 0.95 found in the equation.

Evaluation of accuracy of dose calculation or setpoint determination

This change will have no effect on calculated quarterly doses or setpoint determinations. It will lower the calculated monthly recreation dose.

APPENDIX A
SEQUOYAH NUCLEAR PLANT

ODCM CHANGES

CHANGE 4

Description of change

Table 2.3 was replaced with a newer version in which the format is somewhat different. No model changes are reflected in this change; therefore, no evaluations are necessary.

APPENDIX A
 SEQUOYAH NUCLEAR PLANT
 OFFSITE DOSE CALCULATION MANUAL
 EFFECTIVE PAGE LISTING
 REVISION 10

<u>Page</u>	<u>Revision</u>
TOC 1 through TOC 2	Revision 10
1 through 2	Revision 6
3	Revision 9
4	Original
5	Revision 3
6	Revision 4
7	Revision 8
8 through 9	Revision 5
10	Original
11	Revision 5
12 through 13	Revision 9
14	Revision 7
15	Revision 9
15a	Revision 9
16	Revision 9
16a	Revision 7
Table 1.1 (2 pages)	Revision 4
Table 1.2 (2 pages)	Original
Table 1.3 (8 pages)	Revision 4
Table 1.4	Revision 9
Table 1.4A (removed from document)	Revision 9
Table 1.5	Revision 4
Tables 1.6 and 1.7	Revision 5
Table 1.8	Original
Figures 1.1 and 1.2	Original
Figure 1.3	Revision 3
17	Original
18	Revision 2
19	Revision 7
20	Revision 6
21	Revision 9
22	Revision 10
23	Revision 7
24 through 25	Revision 10
26 through 29	Revision 8
Table 2.1 (3 pages)	Revision 7
Table 2.2	Revision 5
Table 2.3 (3 pages)	Revision 10
Table 2.4 a-c	Revision 5
30	Revision 8
Table 3.1-1 (4 pages)	Revision 4
Table 3.1-2	Revision 8
Table 3.1-3	Revision 4
Table 3.2-1 (3 pages)	Revision 4
Figure 3.1-1 through 3.1-2	Revision 4
Figure 3.1-3	Revision 8
Figure 3.1-4 through 3.1-5	Revision 4
Figure 3.1-6 through 3.1-7	Revision 8

APPENDIX A

Sequoyah Nuclear Plant
Offsite Dose Calculation Manual
Dates of Revisions

Original ODCM	2/29/80*
Revision 1	4/15/80**
Revision 2	10/7/80**
Revision 3	11/3/80, 2/10/81
Revision 4	4/8/81 and 6/4/81**
Revision 5	11/22/82 (10/22/81,
Revision 6	11/28/81 and 4/29/82**
Revision 7	10/21/82**
Revision 8	1/20/83**
Revision 9	3/23/83**
Revision 10	12/16/83**
	3/7/84**
	4/24/84**

*Low Power license for Sequoyah unit 1
**RARC Meeting date

D_j = dose for the j^{th} organ from eleven radionuclides, rem

j = the organ of interest (bone GI tract and total body).

.95 = conservative correction factor, considering only eleven radionuclides.

DCF_{ij} = critical ingestion dose commitment factor for the j^{th} organ of adult or child from the i^{th} radionuclide rem/ μ Ci, see attached as Table 2.1.

I_{ij} = monthly activity ingested of the i^{th} radionuclide by the critical age group for the j^{th} organ, μ Ci.

I_{ij} is described by

$$I_{ij} = \frac{A_i V_{ij} (30)}{Fd (7.34 \times 10^{10})}, \mu\text{Ci} \quad (2.12)$$

where:

A_i = activity released of i^{th} radionuclide during the month, μ Ci.

V_{ij} = maximum individual's water consumption rate corresponding to the age group selected for the critical DCF_{ij} above (Adult: 2000 mL/d, Child: 1400 mL/d; Regulatory Guide 1.109)

30 = days per month

F = average river flow at Chickamauga Dam for the month (cubic feet per second)

d = fraction of river flow available for dilution (1/5)

7.34×10^{10} = conversion from cubic feet per second to milliliters per month.

Considering the conversion factor from rem to mrem ($\times 10^3$), the dose equation then becomes:

$$D_j = \frac{2.15 \times 10^{-6}}{F} \sum_{i=1}^{11} (V \times DCF)_{ij} \times A_i, \text{ mrem.} \quad (2.13)$$

ere:
 D = dose to the total body from plant releases, mrem

$\frac{1}{0.95}$ = conservative correction factor for considering only 4 radionuclides

$RDCF_i$ = shoreline recreation dose commitment factor for the i^{th} radionuclide (mrem/yr per $\mu\text{Ci}/\text{cm}^2$). See attached table 2.3. (Note: For Cs-137, the dose commitment factor for its daughter, Ba-137m, is assumed.)

ξ_i = concentration of i^{th} radionuclide in shoreline sediment ($\mu\text{Ci}/\text{cm}^2$), as described by the following equation (based on equation A-5 in Regulatory Guide 1.109).

$$\xi_i = 100 \cdot RHL_i \cdot C_i \cdot W [1 - \exp(-\lambda_i \cdot t)] \quad (2.17)$$

Where:

100 = transfer constant defined in Regulatory Guide 1.109

RHL_i = radiological half-life of the i^{th} radioisotope, days, from table 2.1

C_i = concentration of i^{th} radionuclide in the Tennessee River, $\mu\text{Ci}/\text{mL}$. $C_i = A_i / (F \cdot d \cdot 7.34 \times 10^{10})$

A_i = activity released of i^{th} radionuclide during the month, μCi

F = average river flow at Chickamauga Dam for the month, cubic feet per second

d = fraction of river flow available for dilution (1/5)

7.34×10^{10} = conversion from cubic feet per second to milliliters per month.

W = shoreline width factor (0.3 for a lake shore, per table A-2 of Regulatory Guide 1.109)

λ_i = decay constant of the i^{th} radionuclide
 $= 0.693/RHL_i$

t = buildup time in sediment, assumed 15 years, per Regulatory Guide 1.109

67 = assumed monthly exposure time for maximum individual, h

$= 500 \frac{\text{h}}{\text{yr}}$ (~ 10 h/week) $\cdot 0.4$ (fractional exposure for worst quarter) $\div 3$ (months/quarter)

8760 = conversion from year to hours.

0.1 = conversion factor, $\text{m}^2 \cdot \text{ml}/\text{cm}^2 \cdot 1$

7

The dose equation then becomes

$$D = \frac{1}{F} (0.00692 A_{Co-60} + 0.00012 A_{Co-58} + 0.00206 A_{Cs-134} + 0.00342 A_{Cs-137}) \quad (2.18) \quad \left. \begin{array}{l} 7 \\ 10 \end{array} \right\}$$

2.3.2.4 Monthly Summary

Calendar quarter doses are first estimated by summing the doses calculated for each month in that quarter. Calendar year doses are first estimated by summing the doses calculated for each month in that year. However, if the annual doses determined in this manner exceed or approach the specification limits, doses calculated for previous quarters with the methodology of section 2.3.3 will be used instead of those quarterly doses estimated by summing monthly results. An annual check will be made to ensure that the monthly dose estimates account for at least 95 percent of the dose calculated by the method described in Section 2.3.3. If less than 95 percent of the dose has been estimated, either a new list of principal isotopes will be prepared or a new correction factor will be used. The latter option will not be used if less than 90 percent of the total dose is predicted.

8

3

2.3.2.5 Dose Projections

In accordance with specification 3.11.1.3, dose projections will be performed. This will be done by averaging the calculated dose for the most recent month and the calculated dose for the previous month and assigning that average dose as the projection for the current month.

8

2.3.3 Quarterly and Annual Analysis

A complete analysis utilizing the total estimated liquid releases for each calendar quarter will be performed and reported as required in section 6.9 of the technical specifications. This analysis will replace values calculated using section 2.3.2 methodology and will also include an approximation of population doses.

2.3.3.1 Individual Doses

The dose to the j^{th} organ of the maximum individual from m nuclides, D_j , is described by

5

$$D_j = \sum_{k=1}^5 \sum_{i=1}^m D_{ijk, rem} \quad (2.19)$$

$$= \sum_{i=1}^m \left[\sum_{k=1}^2 [(IDCF)_{ij} \times I_{ik}] + \sum_{k=3}^5 [(RDCF)_{ijk} \cdot \xi_{ik} \cdot T_k \cdot \phi] \right] \quad (2.20)$$

APPENDIX A

Table 2.3
Recreation Dose Factors*

NUCLIDE	S W I M M I N G						S H O R E L I N E					
	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	(HREM/YEAR PER UCI/ML)	
	BONE	GI	THYROID	TB	LIVER	SKIN	BONE	GI	THYROID	TB	LIVER	SKIN
H-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C-14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NA-22	3.14E+07	2.49E+07	2.30E+07	2.67E+07	2.27E+07	3.16E+07	2.76E+06	2.19E+06	2.01E+06	2.33E+06	1.99E+06	2.76E+06
NA-24	5.68E+07	5.92E+07	6.22E+07	5.39E+07	4.86E+07	6.15E+07	3.96E+06	4.10E+06	4.26E+06	3.76E+06	3.33E+06	4.29E+06
P-32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CR-51	5.43E+05	3.07E+05	3.30E+05	3.77E+05	3.09E+05	4.56E+05	5.45E+04	3.08E+04	3.39E+04	3.81E+04	3.10E+04	4.69E+04
MN-54	1.16E+07	8.57E+06	7.35E+06	9.66E+06	8.26E+06	1.24E+07	1.04E+06	7.69E+05	6.60E+05	8.69E+05	7.42E+05	1.11E+06
MN-56	2.33E+07	2.14E+07	1.82E+07	2.07E+07	1.81E+07	2.54E+07	1.89E+06	1.69E+06	1.44E+06	1.66E+06	1.45E+06	2.05E+06
FE-55	3.16E+01	3.47E+01	6.94E+00	1.66E+02	1.47E+01	3.16E+03	2.71E+01	2.96E+01	5.96E+00	1.44E+02	1.26E+01	2.71E+03
FE-59	1.64E+07	1.39E+07	1.23E+07	1.45E+07	1.23E+07	1.76E+07	1.36E+06	1.15E+06	1.02E+06	1.23E+06	1.02E+06	1.46E+06
CO-57	2.71E+06	9.80E+05	1.69E+06	1.48E+06	1.13E+06	1.75E+06	2.32E+05	1.02E+05	1.76E+05	1.55E+05	1.17E+05	1.94E+05
CO-58	1.38E+07	1.03E+07	8.78E+06	1.13E+07	9.65E+06	1.43E+07	1.85E+06	9.36E+05	3.00E+05	1.03E+06	8.82E+05	1.30E+06
CO-60	3.46E+07	3.02E+07	2.73E+07	3.11E+07	2.62E+07	3.67E+07	2.03E+06	2.46E+06	2.23E+06	2.54E+06	2.14E+06	3.00E+06
NI-63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NI-65	7.65E+06	6.66E+06	6.50E+06	6.94E+06	5.34E+06	7.93E+06	6.18E+05	5.52E+05	5.22E+05	5.60E+05	4.71E+05	6.41E+05
CU-64	2.63E+06	2.20E+06	1.65E+06	2.23E+06	1.92E+06	2.67E+06	2.71E+05	2.11E+05	1.73E+05	2.14E+05	1.84E+05	2.59E+05
ZN-65	7.99E+06	6.49E+06	5.58E+06	6.96E+06	5.90E+06	8.67E+06	6.75E+05	5.43E+05	4.71E+05	5.88E+05	4.98E+05	7.40E+05
ZN-69	9.55E+01	6.49E+01	6.09E+01	7.12E+01	6.00E+01	8.51E+01	9.40E+00	6.39E+00	6.00E+00	7.01E+00	5.90E+00	8.38E+00
AS-74	1.70E+05	1.30E+05	1.40E+05	1.40E+05	1.10E+05	1.60E+05	1.36E+04	1.10E+04	1.16E+04	1.12E+04	9.40E+03	1.33E+04
AS-76	8.31E+04	6.68E+04	7.04E+04	6.83E+04	5.73E+04	8.12E+04	6.82E+03	5.48E+03	5.73E+03	5.60E+03	4.70E+03	6.66E+03
BR-83	1.12E+05	8.64E+04	7.24E+04	8.61E+04	7.59E+04	1.06E+05	1.07E+04	8.29E+03	6.95E+03	8.45E+03	7.28E+03	1.02E+04
BR-84	2.46E+07	2.42E+07	2.59E+07	2.28E+07	2.03E+07	2.69E+07	1.80E+06	1.73E+06	1.79E+06	1.65E+06	1.46E+06	1.96E+06
BR-85	2.86E+05	2.11E+05	1.81E+05	2.39E+05	2.04E+05	3.07E+05	2.55E+04	1.88E+04	1.61E+04	2.13E+04	1.82E+04	2.74E+04
KR-83M	5.24E+02	1.22E+02	1.22E+02	9.46E+02	3.71E+01	1.13E+04	4.33E+02	1.18E+02	5.97E+01	9.65E+02	1.12E+01	1.23E+04
KR-85M	3.21E+06	1.36E+06	1.97E+06	1.93E+06	1.50E+06	2.30E+06	3.30E+05	1.39E+05	2.02E+05	1.99E+05	1.54E+05	2.39E+05
KR-85	3.21E+06	2.59E+04	2.17E+04	2.62E+04	2.26E+04	3.14E+04	3.22E+03	2.49E+03	2.09E+03	2.53E+03	2.12E+03	3.03E+03
RB-86	1.29E+06	1.04E+06	8.73E+05	1.12E+06	9.50E+05	1.42E+06	1.10E+05	8.79E+04	7.40E+04	9.50E+04	8.06E+04	1.26E+05
RB-88	8.99E+06	9.16E+06	6.10E+06	6.32E+06	7.33E+06	9.90E+06	6.77E+05	6.82E+05	5.97E+05	6.24E+05	5.49E+05	7.46E+05
RB-89	2.67E+07	2.67E+07	2.41E+07	2.61E+07	2.27E+07	3.17E+07	2.27E+06	2.06E+06	1.85E+06	2.04E+06	1.77E+06	2.49E+06
SR-89	1.88E+03	1.41E+03	1.18E+03	1.58E+03	1.35E+03	2.05E+03	1.69E+02	1.24E+02	1.04E+02	1.40E+02	1.19E+02	1.31E+02
SR-90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-91	9.71E+06	7.32E+06	6.32E+06	8.17E+06	6.96E+06	1.04E+07	8.59E+05	6.43E+05	5.56E+05	7.19E+05	6.13E+05	9.13E+05
SR-92	1.88E+07	1.69E+07	1.59E+07	1.70E+07	1.43E+07	1.93E+07	1.50E+06	1.35E+06	1.28E+06	1.37E+06	1.15E+06	1.55E+06
Y-90	1.10E+00	2.90E-01	1.11E-01	1.32E+00	2.77E-02	1.06E+01	7.97E-01	2.17E-01	7.66E-02	9.65E-01	1.91E-02	7.97E+00
Y-91	4.99E+04	4.25E+04	3.77E+04	4.43E+04	3.75E+04	5.33E+04	4.12E+03	3.51E+03	3.11E+03	3.66E+03	3.10E+03	4.41E+03
Y-91M	7.83E+06	6.02E+06	5.06E+06	6.21E+06	5.34E+06	7.53E+06	7.48E+05	5.74E+05	4.83E+05	5.93E+05	5.10E+05	7.20E+05
Y-92	3.51E+06	2.30E+06	2.49E+06	3.02E+06	2.57E+06	3.72E+06	3.02E+05	2.59E+05	2.12E+05	2.59E+05	2.20E+05	3.15E+05
Y-93	1.30E+06	1.10E+06	9.91E+05	1.10E+06	9.42E+05	1.33E+06	1.10E+05	8.91E+04	8.17E+04	9.13E+04	7.77E+04	1.10E+05
ZR-95	1.04E+07	7.78E+06	6.64E+06	8.56E+06	7.32E+06	1.06E+07	9.56E+05	7.13E+05	6.08E+05	7.84E+05	6.71E+05	9.88E+05
ZR-97	2.57E+06	2.04E+06	1.87E+06	2.18E+06	1.86E+06	2.62E+06	2.23E+05	1.74E+05	1.50E+05	1.82E+05	1.60E+05	2.27E+05
NE-95	1.09E+07	8.01E+06	6.84E+06	8.37E+06	7.39E+06	1.12E+07	9.82E+05	7.31E+05	6.24E+05	8.09E+05	6.92E+05	1.02E+06
NB-95M	1.17E+06	5.59E+05	7.04E+05	7.59E+05	5.90E+05	9.51E+05	1.22E+05	5.66E+04	7.17E+04	8.05E+04	5.93E+04	1.23E+05
NB-97	4.40E+06	7.11E+06	6.03E+06	7.61E+06	6.52E+06	9.43E+06	8.77E+05	6.63E+05	5.62E+05	7.10E+05	6.08E+05	8.79E+05
NB-97M	1.03E+07	7.67E+06	5.54E+06	6.44E+06	7.22E+06	1.06E+07	9.42E+05	7.03E+05	5.99E+05	7.73E+05	6.61E+05	9.24E+05
HO-99	2.41E+06	1.63E+06	1.52E+06	1.87E+06	1.57E+06	2.34E+06	2.27E+05	1.51E+05	1.43E+05	1.75E+05	1.47E+05	2.21E+05
TC-99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TC-99M	2.74E+06	1.03E+06	1.69E+06	1.55E+06	1.18E+06	1.83E+06	2.83E+05	1.07E+05	1.74E+05	1.60E+05	1.21E+05	1.93E+05
RU-103	7.03E+06	5.44E+06	4.57E+06	5.51E+06	4.75E+06	6.60E+06	6.81E+05	5.25E+05	4.41E+05	5.32E+05	4.58E+05	6.37E+05
RU-105	1.15E+07	8.32E+06	7.34E+06	9.16E+06	7.79E+06	1.14E+07	1.03E+06	7.38E+05	6.88E+05	8.57E+05	7.29E+05	1.06E+06
RU-106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RH103M	3.73E+03	4.68E+02	1.27E+03	2.62E+03	3.92E+02	1.27E+04	1.74E+03	2.10E+02	5.66E+02	1.36E+03	1.63E+02	6.42E+03
RH-105	1.35E+06	7.56E+05	8.36E+05	9.39E+05	7.64E+05	1.12E+06	1.35E+05	7.59E+04	8.41E+04	9.43E+04	7.67E+04	1.13E+05
RH105M	6.12E+05	2.18E+05	3.75E+05	3.42E+05	2.51E+05	4.51E+05	7.05E+04	2.30E+04	4.10E+04	4.11E+04	2.66E+04	7.39E+04
RH-106	2.92E+06	2.30E+06	1.96E+06	2.41E+06	2.07E+06	2.93E+06	2.31E+05	2.16E+05	1.84E+05	2.25E+05	1.94E+05	2.74E+05
AG110M	3.87E+07	2.97E+07	2.68E+07	3.23E+07	2.79E+07	4.03E+07	3.41E+06	2.61E+06	2.35E+06	2.88E+06	2.45E+06	3.55E+06
AG-111	4.03E+05	2.32E+05	2.51E+05	2.63E+05	2.51E+05	3.39E+05	4.03E+04	2.52E+04	2.51E+04	2.63E+04	2.31E+04	3.39E+04
SB-122	8.05E+04	6.27E+04	6.58E+04	6.51E+04	5.26E+04	7.73E+04	6.83E+03	5.31E+03	5.57E+03	5.35E+03	4.46E+03	6.54E+03
SB-124	2.01E+07	2.28E+07	2.07E+07	2.29E+07	1.98E+07	2.71E+07	2.15E+06	1.86E+06	1.67E+06	1.90E+06	1.64E+06	2.25E+06
SB-127	1.01E+07	7.39E+06	6.47E+06	6.03E+06	6.65E+06	9.91E+06	9.52E+05	6.94E+05	6.09E+05	7.55E+05	6.43E+05	9.31E+05

-34-

NUCLIDE	***** S W I M M I N G *****						***** S H O R E L I N E *****					
	(MREM/YEAR PER UCI/ML) *****						(MREM/YEAR PER UCI/SQUARE CENTIMETER) *****					
	BONE	GI	THYROID	TB	LIVER	SKIN	BONE	GI	THYROID	TB	LIVER	SKIN
TE-127	7.84E+04	5.17E+04	4.90E+04	5.77E+04	4.83E+04	6.99E+04	7.74E+03	5.10E+03	4.92E+03	5.69E+03	4.77E+03	6.80E+03
TE127M	6.91E+04	1.33E+04	3.45E+04	3.82E+04	1.25E+04	9.89E+04	1.31E+04	2.54E+03	6.60E+03	7.21E+03	2.44E+03	1.86E+04
TE-129	8.68E+05	6.12E+05	5.50E+05	6.69E+05	5.60E+05	8.33E+05	8.52E+04	5.87E+04	5.43E+04	6.50E+04	5.37E+04	8.28E+04
TE129M	4.72E+05	3.23E+05	2.94E+05	3.71E+05	3.02E+05	5.03E+05	4.59E+04	3.09E+04	7.98E+04	3.71E+04	2.88E+04	5.33E+04
TE-131	0.79E+06	4.21E+06	4.37E+06	4.99E+06	4.13E+06	6.11E+06	6.49E+05	3.94E+05	4.16E+05	4.71E+05	3.88E+05	5.78E+05
TE131M	2.06E+07	1.53E+07	1.39E+07	1.70E+07	1.45E+07	2.12E+07	1.84E+06	1.35E+06	1.23E+06	1.51E+06	1.23E+06	1.89E+06
TE-132	4.27E+06	1.92E+06	2.54E+06	2.63E+06	2.04E+06	3.32E+06	4.55E+05	1.90E+05	2.68E+05	2.83E+05	2.12E+05	3.50E+05
I-129	2.25E+05	4.84E+04	1.19E+05	1.15E+05	4.75E+04	2.49E+05	5.02E+04	1.07E+04	2.67E+04	2.57E+04	1.05E+04	5.70E+04
I-130	3.09E+07	2.33E+07	2.00E+07	2.50E+07	2.14E+07	3.08E+07	2.98E+06	2.17E+06	1.86E+06	2.32E+06	1.99E+06	2.86E+06
I-131	6.22E+06	3.93E+06	3.92E+06	4.54E+06	3.77E+06	5.47E+06	6.16E+05	3.87E+05	3.38E+05	4.49E+05	3.72E+05	5.41E+05
I-132	3.23E+07	2.45E+07	2.16E+07	2.05E+07	2.29E+07	3.32E+07	2.91E+06	2.20E+06	1.93E+06	2.41E+06	2.06E+06	2.99E+06
I-133	8.96E+06	6.90E+06	5.89E+06	7.18E+06	6.16E+06	3.69E+06	8.44E+05	6.49E+05	5.54E+05	6.75E+05	5.79E+05	8.17E+05
I-134	3.67E+07	2.84E+07	2.49E+07	3.11E+07	2.65E+07	3.89E+07	3.22E+06	2.46E+06	2.15E+06	2.71E+06	2.32E+06	3.40E+06
I-135	2.19E+07	1.95E+07	1.75E+07	1.96E+07	1.67E+07	2.33E+07	1.78E+06	1.57E+06	1.41E+06	1.58E+06	1.35E+06	1.89E+06
XE133M	6.05E+05	2.36E+05	3.55E+05	3.71E+05	2.61E+05	5.27E+05	8.09E+04	2.81E+04	4.65E+04	4.77E+04	3.05E+04	7.71E+04
XE-133	8.52E+05	2.53E+05	4.84E+05	4.24E+05	2.74E+05	5.73E+05	1.11E+05	3.17E+04	6.20E+04	5.57E+04	3.39E+04	8.27E+04
XE135M	6.41E+06	4.94E+06	4.15E+06	5.04E+06	4.33E+06	6.08E+06	6.21E+05	4.75E+05	4.01E+05	4.87E+05	4.17E+05	5.90E+05
XE-135	4.54E+06	2.38E+06	2.76E+06	3.02E+06	2.40E+06	3.63E+06	4.59E+05	2.29E+05	2.77E+05	3.04E+05	2.41E+05	3.67E+05
CS-134	2.22E+07	1.07E+07	1.43E+07	1.81E+07	1.55E+07	2.26E+07	2.04E+06	1.54E+06	1.32E+06	1.67E+06	1.43E+06	2.08E+06
CS-135	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CS-136	3.10E+07	2.26E+07	2.03E+07	2.55E+07	2.15E+07	3.21E+07	2.77E+06	2.00E+06	1.81E+06	2.26E+06	1.91E+06	2.85E+06
CS-137	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CS-138	3.29E+07	3.03E+07	2.86E+07	2.98E+07	2.56E+07	3.46E+07	2.62E+06	2.37E+06	2.23E+06	2.35E+06	2.02E+06	2.74E+06
BA137M	8.56E+06	6.45E+06	5.48E+06	6.92E+06	5.93E+06	8.59E+06	8.01E+05	6.02E+05	5.12E+05	6.47E+05	5.54E+05	8.04E+05
BA-139	7.49E+05	3.44E+05	4.73E+05	4.66E+05	3.60E+05	5.55E+05	7.61E+04	3.38E+04	4.75E+04	4.67E+04	7.57E+04	5.62E+04
BA-140	2.29E+06	1.60E+06	1.46E+06	1.73E+06	1.46E+06	2.10E+06	2.29E+05	1.56E+05	1.46E+05	1.71E+05	1.42E+05	2.13E+05
BA-141	1.31E+07	8.90E+06	8.96E+06	1.02E+07	8.49E+06	1.22E+07	1.21E+06	7.97E+05	8.15E+05	9.26E+05	7.70E+05	1.12E+06
BA-142	1.51E+07	1.11E+07	1.02E+07	1.24E+07	1.04E+07	1.54E+07	1.34E+06	9.38E+05	9.03E+05	1.10E+06	9.17E+05	1.36E+06
LA-140	3.20E+07	2.91E+07	2.73E+07	2.86E+07	2.46E+07	3.31E+07	2.60E+06	2.32E+06	2.18E+06	2.32E+06	1.98E+06	2.67E+06
LA-142	3.74E+07	3.80E+07	3.72E+07	3.47E+07	3.10E+07	4.10E+07	2.75E+06	2.73E+06	2.64E+06	2.53E+06	2.52E+06	3.00E+06
CE-141	1.59E+06	5.94E+05	9.70E+05	9.01E+05	6.71E+05	1.09E+06	1.69E+05	6.20E+04	1.02E+05	9.52E+04	7.07E+04	1.16E+05
CE-143	4.54E+05	2.64E+06	2.79E+06	3.22E+06	2.60E+06	4.00E+06	4.66E+05	2.61E+05	2.83E+05	3.24E+05	2.57E+05	4.07E+05
CE-144	4.16E+05	1.42E+05	2.51E+05	2.26E+05	1.61E+05	2.81E+05	4.64E+04	1.55E+04	2.76E+04	2.50E+04	1.76E+04	3.18E+04
PR-143	1.26E+01	9.38E+02	8.00E+02	1.03E+01	8.31E+02	1.30E+01	1.15E+02	8.60E+03	7.33E+03	9.45E+03	8.09E+03	1.19E+04
PR-144	4.40E+05	4.24E+05	3.74E+05	3.97E+05	3.50E+05	4.75E+05	3.46E+04	3.24E+04	2.87E+04	3.10E+04	2.72E+04	3.71E+04
PR144M	1.42E+05	3.32E+04	7.19E+04	6.95E+04	3.23E+04	1.25E+05	2.28E+04	5.33E+03	1.15E+04	1.12E+04	5.17E+03	2.06E+04
ND-147	2.33E+06	1.34E+06	1.44E+06	1.57E+06	1.25E+06	1.93E+06	2.47E+05	1.35E+05	1.50E+05	1.62E+05	1.27E+05	2.03E+05
PM-147	7.86E+01	2.76E+01	4.92E+01	4.26E+01	3.23E+01	4.93E+01	8.17E+00	2.92E+00	5.11E+00	4.43E+00	3.36E+00	5.17E+00
PM-149	1.98E+05	1.12E+05	1.23E+05	1.39E+05	1.13E+05	1.69E+05	1.98E+04	1.11E+04	1.22E+04	1.33E+04	1.12E+04	1.67E+04
SM-147	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SM-151	1.69E+01	2.20E+00	5.68E+00	1.33E+01	1.61E+01	6.78E+01	7.60E+00	1.04E+00	2.56E+00	6.24E+00	7.22E+01	3.55E+01
SM-153	1.25E+05	3.89E+05	7.21E+05	6.33E+05	4.25E+05	8.08E+05	1.57E+05	4.71E+04	8.79E+04	7.83E+04	5.07E+04	1.04E+05
EU-155	1.35E+06	4.28E+05	7.98E+05	6.81E+05	4.78E+05	6.21E+05	1.54E+05	4.82E+04	6.98E+04	7.73E+04	5.35E+04	9.49E+04
TA-182	2.42E+05	1.90E+05	1.80E+05	2.04E+06	1.68E+05	2.44E+05	1.94E+06	1.41E+06	1.45E+06	1.63E+06	1.35E+06	1.96E+06
W-187	7.25E+06	5.09E+06	4.57E+06	5.55E+06	4.68E+06	6.81E+06	6.99E+05	4.84E+05	4.39E+05	5.30E+05	4.45E+05	6.52E+05
PB-210	3.69E+04	9.75E+03	1.71E+04	1.76E+04	9.16E+03	3.27E+04	5.31E+03	1.46E+03	2.42E+03	3.05E+03	1.28E+03	1.43E+04
PB-212	2.89E+06	1.26E+06	1.72E+06	1.78E+06	1.36E+06	2.13E+06	2.99E+05	1.29E+05	1.78E+05	1.83E+05	1.40E+05	2.25E+05
PB-214	4.29E+06	2.39E+06	2.65E+06	2.95E+06	2.39E+06	3.55E+06	4.32E+05	2.39E+05	2.66E+05	2.96E+05	2.39E+05	3.61E+05
BI-212	2.59E+06	2.08E+06	1.89E+06	2.22E+06	1.90E+06	2.69E+06	2.25E+05	1.78E+05	1.61E+05	1.92E+05	1.63E+05	2.36E+05
BI-214	2.10E+07	1.89E+07	1.69E+07	1.37E+07	1.62E+07	2.23E+07	1.71E+06	1.51E+06	1.35E+06	1.51E+06	1.31E+06	1.81E+06
PO-212	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PO-214	1.54E+03	1.14E+03	9.75E+02	1.27E+03	1.09E+03	1.62E+03	1.39E+02	1.03E+02	8.84E+01	1.15E+02	9.85E+01	1.46E+02
PO-216	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PO-218	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

NUCLIDE	***** S W I M M I N G ***** ***** (HREM/YEAR PER UCI/ML) *****						***** S H O R E L I N E ***** ***** (HREM/YEAR PER UCI/SQUARE CENTIMETER) *****					
	BONE	GI	THYROID	TB	LIVER	SKIN	BONE	GI	THYROID	TB	LIVER	SKIN
RA-224	1.87E+05	8.92E+04	1.13E+05	1.21E+05	9.45E+04	1.45E+05	1.90E+04	9.04E+03	1.15E+04	1.22E+04	9.58E+03	1.49E+04
RA-226	1.37E+05	5.79E+04	8.19E+04	8.21E+04	6.26E+04	9.85E+04	1.41E+04	5.94E+03	8.41E+03	8.45E+03	6.41E+03	1.05E+04
RA-228	6.53E-05	9.39E-05	1.88E-05	4.53E-04	3.98E-07	8.53E-03	7.89E-05	8.58E-05	1.74E-05	4.19E-04	3.68E-07	7.89E-03
AC-228	1.32E+07	9.95E+06	8.99E+06	1.10E+07	9.30E+06	1.37E+07	1.17E+06	8.65E+05	7.86E+05	9.64E+05	8.14E+05	1.23E+06
TH-228	4.33E+04	1.54E+04	2.56E+04	2.41E+04	1.74E+04	3.33E+04	4.75E+03	1.67E+03	2.74E+03	2.95E+03	1.84E+03	8.88E+03
TH-230	8.79E+03	2.86E+03	4.78E+03	4.83E+03	3.07E+03	1.00E+04	1.11E+03	3.53E+02	5.44E+02	6.92E+02	3.39E+02	5.86E+03
TH-232	3.91E+03	1.20E+03	2.03E+03	2.21E+03	1.23E+03	6.31E+03	5.93E+02	1.70E+02	2.53E+02	6.10E+02	1.45E+02	5.44E+03
TH-234	1.90E+05	6.00E+04	1.10E+05	9.53E+04	6.63E+04	1.12E+05	2.14E+04	6.70E+03	1.23E+04	1.11E+04	7.33E+03	1.94E+04
PA-234	2.89E+07	2.07E+07	1.92E+07	2.34E+07	1.98E+07	2.93E+07	2.61E+06	1.83E+06	1.72E+06	2.10E+06	1.77E+06	2.69E+06
U-234	2.77E+03	8.30E+02	1.38E+03	1.80E+03	8.36E+02	8.05E+03	5.71E+02	1.46E+02	1.85E+02	7.43E+02	1.00E+02	7.34E+03
U-238	9.69E+02	2.47E+02	3.66E+02	8.02E+02	1.97E+02	5.91E+03	3.32E+02	8.41E+01	7.05E+01	5.46E+02	2.97E+01	6.06E+03
NP-238	7.50E+06	5.78E+06	4.77E+06	6.38E+06	5.43E+06	8.32E+06	6.30E+05	4.99E+05	4.12E+05	5.54E+05	4.69E+05	7.65E+05
NP-239	3.44E+06	1.40E+06	2.14E+06	2.32E+06	1.57E+06	2.43E+06	3.59E+05	1.45E+05	2.22E+05	2.13E+05	1.62E+05	2.90E+05
PJ-239	9.79E+02	2.32E+02	3.16E+02	1.00E+03	1.67E+02	8.46E+03	4.77E+02	1.42E+02	7.02E+01	7.97E+02	2.54E+01	8.55E+03
PU-239	1.39E+03	4.51E+02	7.98E+02	9.42E+02	5.05E+02	3.87E+03	2.33E+02	8.55E+01	9.52E+01	3.60E+02	5.44E+01	3.32E+03
PU-240	1.01E+03	2.33E+02	3.34E+02	9.90E+02	1.78E+02	8.10E+03	4.65E+02	1.36E+02	7.17E+01	7.64E+02	2.69E+01	8.14E+03
PU-241	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PU-242	8.25E+02	1.93E+02	2.83E+02	7.94E+02	1.52E+02	6.40E+03	3.68E+02	6.23E+01	5.81E+01	6.03E+02	2.22E+01	6.41E+03
AM-241	5.01E+05	1.43E+05	2.47E+05	2.37E+05	1.42E+05	3.12E+05	6.40E+04	1.81E+04	3.11E+04	3.16E+04	1.79E+04	5.77E+04
AM-242	3.05E+05	1.04E+05	1.95E+05	1.62E+05	1.21E+05	1.96E+05	3.32E+04	1.11E+04	2.07E+04	1.80E+04	1.29E+04	2.97E+04
AM-243	1.22E+06	3.71E+05	6.70E+05	5.97E+05	3.96E+05	7.28E+05	1.37E+05	4.16E+04	7.49E+04	6.79E+04	4.42E+04	9.30E+04
CM-242	1.09E+03	2.95E+02	2.97E+02	1.14E+03	1.56E+02	9.49E+03	6.08E+02	2.02E+02	7.14E+01	9.05E+02	2.57E+01	9.00E+03
CM-243	2.57E+06	1.06E+06	1.59E+06	1.53E+06	1.13E+06	1.85E+06	2.68E+05	1.09E+05	1.64E+05	1.62E+05	1.22E+05	2.33E+05
CM-244	6.91E+02	2.00E+02	1.25E+02	9.01E+02	5.13E+01	8.47E+03	5.22E+02	1.76E+02	4.96E+01	8.07E+02	1.34E+01	8.15E+03

*Dose Factors taken from Kocher, D. C., "Dose-Rate Conversion Factors for External Exposure to Photon and Electron Radiation from Radionuclides Occurring in Routine Releases from Nuclear Fuel Cycle Facilities," Health Physics, Volume 38, Number 4, April 1980.

APPENDIX A

PAGE: 4 of 4
 App. 1
 NO.: RAP 2.2
 DATE: 10/5/83
 TITLE: IMPLEMENTATION OF RETS SURVEILLANCE REQUIREMENTS 4.11.1.2, 4.11.3.1, AND 4.11.4 FOR SEQUOYAH NUCLEAR PLANT

EP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
115	STOI	35 46		171	*L6LB	21 12	
116	*L6L4	21 04		172	STOE	35 15	
117	RCLi	36 46		173	R/S	51	
118	2	02		174	*L6LC	21 13	
119	3	03		175	1	01	
120	X=Y?	16-33		176	5	05	
121	GT00	22 00		177	STOI	35 46	
122	RCLi	36 45		178	RCLi	36 45	
123	X=0?	16-43		179	Y 0	-62	
124	GT03	22 03		180	0	00	
125	RCLi	36 46		181	0	00	
126	DSP0	-63 00		182	1	01	
127	FIX	-11		183	Y 2	03	
128	PRTX	-14		184	x	-35	
129	DSP2	-63 02		185	ISZI 16 26 46		
130	RCLi	36 45		186	RCLi	36 45	
131	RCL0	36 00		187	Y 0	-62	
132	x	-35		188	0	00	
133	PRTX	-14		189	Y 0	00	
134	RCLi	36 45		190	Y 0	02	
135	DSP2	-63 02		191	Y 2	03	
136	SCI	-12		192	x	-35	
137	PRTX	-14		193	+	-55	
138	RCLi	36 46		194	2	02	
139	2	02		195	1	01	
140	2	02		196	STOI	35 46	
141	X=Y?	16-33		197	R4	-31	
142	GT00	22 00		198	RCLi	36 45	
143	*L6L3	21 03		199	Y 0	-62	
144	ISZI 16 26 46			200	0	00	
145	GT04	22 04		201	2	02	
146	ISZI 16 26 46			202	Y 0	01	
147	GT04	22 04		203	Y 6	08	
148	R/S	51		204	x	-35	
149	*L6L0	21 00		205	+	-55	
150	RCL0	36 00		206	ISZI 16 26 46		
151	1/X	52		207	RCLi	36 45	
152	1	01		208	Y 0	-62	
153	EEX	-23		209	0	00	
154	4	04		210	3	03	
155	+	-24		211	Y 4	05	
156	DSP9	-63 09		212	Y 2	06	
157	PRTX	-14		213	x	-35	
158	SPC	16-11		214	+	-55	
159	DSP2	-63 02		215	RCLi	36 15	
160	RCLi	36 15		216	+	-24	
161	FIX	-11		217	SPC	16-11	
162	DSP0	-63 00		218	PRTX	-14	
163	PRTX	-14		219	R/S	51	
164	SCI	-12					
165	DSP2	-63 02					
166	SPC	16-11					
167	SPC	16-11					
168	SPC	16-11					
169	SPC	16-11					
170	R/S	51					

LABELS					FLAGS		SET STATUS		
0	1	2	3	4	0	1	UN	TRIG	DISP
0	1	2	3	4	0	1	UN	DEG	FIX
0	1	2	3	4	0	1	OFF	GRAD	SCI
0	1	2	3	4	0	1		RAD	ENG
0	1	2	3	4	0	1			

TENNESSEE VALLEY AUTHORITY

Sequoyah Nuclear Plant
P. O. Box 2000
Soddy-Daisy, Tennessee 37379

SEP 14 1984

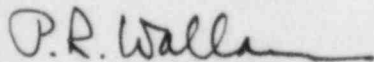
Nuclear Regulatory Commission
Office of Management Information
and Program Control
Washington, DC 20555

Gentlemen:

Enclosed is the August 1984 Monthly Operating Report to the NRC for Sequoyah Nuclear Plant.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



P. R. Wallace
Plant Manager

Enclosure

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