



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379-2000

November 5, 1998

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:


In the Matter of) Docket Nos. 50-327
Tennessee Valley Authority) 50-328

SEQUOYAH NUCLEAR PLANT (SQN) - ANNUAL ENVIRONMENTAL OPERATING REPORT

The enclosure contains the Annual Environmental Operating Report for SQN for the period from October 1, 1997 through September 30, 1998. This report is submitted in accordance with Appendix B, Technical Specification 5.4.1.

Please direct questions concerning this issue to me at (423) 843-7170 or J. D. Smith at (423) 843-6672.

Sincerely,


Pedro Salas
Licensing and Industry Affairs Manager

Enclosure
cc: See page 2

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**ANNUAL NON-RADIOLOGICAL
ENVIRONMENTAL OPERATING
REPORT**

**TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT
October 1, 1997 through September 30, 1998**

ANNUAL NON-RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
OCTOBER 1, 1997 THROUGH SEPTEMBER 30, 1998

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**ANNUAL NON-RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
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I. INTRODUCTION

The Sequoyah Nuclear Plant Annual Non-Radiological Environmental Operating Report for the period of October 1, 1997 through September 30, 1998, is prepared in accordance with Environmental Technical Specification (Non-Radiological) (ETS), Appendix B, 5.4.1. This report includes a summary of:

- ◆ Reports previously submitted as specified in the SQN National Pollutant Discharge Elimination System (NPDES) Permit No. TN0026450.
- ◆ All ETS noncompliances and the corrective actions taken to remedy them.
- ◆ Changes made to applicable State and Federal permits and certifications.
- ◆ Changes in station design that could involve a significant environmental impact or change the findings of the Final Environmental Statement (FES).
- ◆ All non-routine reports submitted per ETS Section 4.1.
- ◆ Special studies.
- ◆ Changes in approved ETS.

No environmental monitoring special studies were required during this period. However, reporting, monitoring and inspections conducted as required by permits and regulations indicated no adverse impact on the environment as a result of station operation.

II. REPORTING FOR THOSE PROGRAMS NOT CONCERNED WITH WATER QUALITY OR PROTECTION OF AQUATIC BIOTA, WHICH ARE REGULATED BY THE CLEAN WATER ACT:

1. 3rd Quarter 1997 Summary of Asbestos Removal Projects - submitted to the Hamilton County Air Pollution Control Bureau on October 2, 1997
2. Asbestos Annual Asbestos Removal Notification - submitted to Hamilton County Air Pollution Control Bureau on November 12, 1997
3. Special Waste Permit Application for Concrete - submitted to the Tennessee Department of Environment and Conservation on December 8, 1997
4. Special Waste Permit Application for Thermolag - submitted to the Tennessee Department of Environment and Conservation on December 8, 1997
5. Annual Asbestos Removal Notification Revision - submitted to Hamilton County Air Pollution Control Bureau on December 15, 1997
6. Revised Waste Stream 27 - submitted to the Tennessee Department of Environment and Conservation on December 18, 1997

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7. Special Waste Permit Application for Fluorescent Lighting - submitted to the Tennessee Department of Environment and Conservation on December 22, 1997
8. Compliance Evaluation Inspection by the Tennessee Department of Environment and Conservation Response - submitted to the Tennessee Department of Environment and Conservation on February 6, 1998
9. 4th Quarter 1997 Summary of Asbestos Removal Projects - submitted to the Hamilton County Air Pollution Control Bureau on January 5, 1998
10. Testing of Backflow Prevention Devices at SQN - submitted to Hixson Utility District on January 7, 1998
11. Request for Permission to Move Front Modification Insulator Saw - submitted to the Hamilton County Air Pollution Control Bureau on January 21, 1998
12. Annual Hazardous Waste Activity Report for 1997 - submitted to the Tennessee Department of Environment and Conservation on February 2, 1998
13. Tier Two Emergency and Hazardous Chemical Inventory - submitted to the Local Emergency Planning Commission on February 9, 1998
14. Sequoyah Nuclear Plant Hazardous Waste Minimization Plan - maintained on file at Sequoyah since March 1, 1998
15. 1st Quarter 1998 Report on Nonscheduled Removal of Asbestos Containing Material - submitted to the Hamilton County Air Pollution Control Bureau on April 6, 1998
16. Special Waste Evaluation Application/Fee Payment - Kaowool Insulation - submitted to the Tennessee Department of Environment and Conservation on April 15, 1998
17. Annual Report on Diesel Generators 1-A, 1-B, 2-A, 2-B, Auxiliary Boilers A&B - submitted to the Hamilton County Air Pollution Control Bureau on May 7, 1998
18. Application for Closure of Underground Storage Tank - submitted to the Tennessee Department of Environment and Conservation on June 5, 1998
19. Microcomputer Diskette containing Toxic Chemical Release Information Required by Emergency Planning And Community Right to Know Act - submitted to the Environmental Protection Agency Region IV on June 13, 1998
20. Written Annual Document Log of PCBs and PCB Items for Calendar Year 1997 - maintained on file since June 25, 1998
21. Request Permission to Allow Vendor to Provide Certificate of Low Sulfur Diesel Fuel - submitted to the Hamilton County Air Pollution Control Bureau on July 1, 1998
22. Sequoyah Nuclear Plant Not Closing the Underground Storage Tank (UST) - submitted to the Tennessee Department of Environment and Conservation on July 1, 1998
23. 2nd Quarter 1998 Summary of Asbestos Removal Projects - submitted to the Hamilton County Air Pollution Control Bureau on July 5, 1998
24. Construction of Warehouse Restroom and Office - submitted to the Hamilton County Department of Health on August 3, 1998
25. Demolition/Asbestos Removal Permit Application for Design Services Complex - submitted to the Hamilton County Air Pollution Control Bureau on September 8, 1998
26. 1998 Solid Waste Facility Annual Report/Fee - submitted to the Tennessee Department of Environment and Conservation on September 15, 1998

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27. Air Permit Applications for U1 and U2 Lube Oil System Vapor Extractor Vents - submitted to the Hamilton County Air Pollution Control Bureau on September 15, 1998

III. ENVIRONMENTAL MONITORING PERFORMED

1. Storm Water Samples taken at required frequencies and Best Management Practices implemented as required by the General Industrial Storm Water Discharge Permit TNR0015,
2. Outfall sampling and inspection is performed as required by NPDES General Industrial Discharge Permit TN0026450 (results previously submitted to NRC as required),
3. Weekly Erosion and Sediment Control Inspections are conducted as required by the General Industrial Storm Water Discharge Permit TNR0015,
4. Weekly Tank, Piping and Secondary Containment Inspections are performed as required by the General Industrial Storm Water Discharge Permit TNR0015 and the Spill Prevention Controls and Countermeasures Plan,
5. Weekly Hazardous Waste Inspections conducted as required by 40CFR261 and State of Tennessee, Chapter 1200,
6. Weekly Landfill Inspections performed as required by 40CFR261 and State of Tennessee, Chapter 1200,
7. Weekly Operational Hours of DG Operation Tracking maintained as required by Federally Enforceable Certificate of Operation No. 4150-10200501-08C,
8. Diesel Fuel Recovery Trench, Extraction, and Monitoring Well sampling, maintenance and operation conducted as required by the State of Tennessee,
9. Intake Forebay Aeration System Sampling, Maintenance and Operation performed as required by the State of Tennessee,
10. Air Emissions inspected weekly for equipment permitted by the Hamilton County Air Pollution Control Bureau,
11. Opening Burning Area weekly inspection,
12. Refrigeration Equipment Performance and Repairs are tracked weekly to ensure compliance with Title VI of the Clean Air Act,
13. Waste sampling and characterization as required by 40CFR261 and State of Tennessee, Chapter 1200,
14. Quarterly PCB transformer inspections as required by 40CFR 761,
15. Asbestos removal tracking as required by the Hamilton County Air Pollution Control Bureau,
16. Hazardous waste minimization (such as solvent distillation, chemical control and substitution) as required by the State of Tennessee Chapter 1200, and
17. National Environmental Policy Act (NEPA) reviews are conducted to evaluate potential environmental impact of temporary or permanent facility modifications.

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**IV. REPORTS PREVIOUSLY SUBMITTED AS SPECIFIED IN THE SQN NATIONAL
POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT**

The following reports were submitted as specified in the SQN NPDES Permit No. TN0026450:

1. Discharge Monitoring Report for the Period of July 1, 1997 - September 30, 1997 was submitted on October 10, 1997.
2. Semi-annual Aquatic Toxicity Monitoring Studies, included in the quarterly Discharge Monitoring Report, were submitted on October 10, 1997.
3. Diffuser Pond Discharge, Sequoyah Nuclear Plant, NPDES Permit TN0026450 was submitted on October 24, 1997.
4. Annual DMR-QA Laboratory Performance Evaluation - Study 17 was submitted on October 24, 1997.
5. Discharge Monitoring Report-QA Laboratory Performance Evaluation - Study 17 was submitted on October 28, 1997.
6. NPDES Permit TN0026450, Dredge Material Settling Pond/Stormwater Runoff was submitted on December 1, 1997.
7. NPDES Permit Renewal Application was submitted on January 15, 1998.
8. Discharge Monitoring Report for the Period of October 1, 1997 - December 30, 1997 was submitted on January 15, 1998.
9. Sequoyah Nuclear Plant Sewage Connection to Hamilton County Collector System Completion was submitted on January 27, 1998.
10. Effect of Operation of Proposed Watts Bar Nuclear Plant Supplemental Condenser Cooling Water System on Water Temperature at Sequoyah Nuclear Plant was submitted on March 13, 1998.
11. 1997 Discharge Monitoring Report - Quality Assurance (DMR-QA) Study 17, Sequoyah Nuclear Plant, NPDES Permit Number TN0026450 Investigation was submitted on March 27, 1998.
12. Draft of Modification of NPDES Permit No. TN0026450 TVA Sequoyah Nuclear Plant, Soddy-Daisy, Hamilton County, Tennessee was submitted on April 6, 1998.
13. Revised Discharge Monitoring Reports (DMRs) for Sequoyah Nuclear Plant was submitted on April 8, 1998.
14. Discharge Monitoring Report for the Period of January 1, 1998 - March 31, 1998 was submitted on April 14, 1998.
15. Semi-annual Aquatic Toxicity Monitoring Studies, included in the quarterly Discharge Monitoring Report, were submitted on April 14, 1998.
16. Revised Draft of Modification of NPDES Permit No. TN0026450 TVA Sequoyah Nuclear Plant was submitted on May 5, 1998.
17. DMR-QA Study 18 Toxicity was submitted on May 11, 1998.
18. Toxicity Testing Requirements was submitted on May 26, 1998.
19. Emergency Release Follow-Up Report for the Sodium Hypochlorite spill to an NPDES Permitted Outfall was submitted on May 26, 1998.

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20. NPDES Permit No. TN0026459 Discharge Monitoring Report (DMR) - Permit Renewal Form 2C Signature and Other Information Requested was submitted on June 2, 1998.
21. Sodium Hypochlorite Spill Emergency 5/18/98 Release Follow-Up Notice Report was submitted on May 26, 1998.
22. NPDES Permit Noncompliance - Total Residual Chlorine Limit Exceeded 5/18/98 was submitted on June 5, 1998.
23. H130M Treatment of Raw Cooling Water - NPDES Permit TN0026450 was submitted on June 26, 1998.
24. Discharge Monitoring Report for the Period of April 1 - June 30, 1998 was submitted on July 14, 1998.
25. Remaining Chemicals for Raw Cooling Water Treatment was submitted on July 31, 1998.
26. Essential Raw Cooling Water Maintenance Activity was submitted on August 13, 1998.
27. NPDES TN0026450 - Essential Raw Cooling Water Discharge Alternate Routing Description for Permit Renewal Description was submitted on September 1, 1998.
28. State Certified Operator for Wastewater System was submitted on September 3, 1998.
29. Discharge Monitoring Report-QA Laboratory Performance Evaluation - Study 18 was submitted on September 28, 1998.
30. NPDES Permit TN0024650- Reverse Osmosis Process EDI Regeneration was submitted on September 30, 1998.

V. ENVIRONMENTAL TECHNICAL SPECIFICATION NONCOMPLIANCES

1. May 18, 1998 - High total residual chlorine (TRC) in the Raw Cooling Water System caused the calculated TRC at Outfall 101, the Sequoyah Diffuser Pond, to exceed 0.058 mg/L. Problem was found to be pump design causing difficulty in controlling system concentration. The corrosive nature of hypochlorite had also caused valve degradation over time.
 - a) Corrective Actions Taken
 - i) Pumps were replaced with vendor operated skids for the injection of H130M and hypochlorite.
 - ii) H130M treatment was conducted to control Asiatic clams and zebra mussels while hypochlorite skid was being prepared.

2. June 8, 1998 - There was no daily monitoring of Outfall 110, the Cold Water Return Channel, when water was discharged via this pathway while in open cooling cycle operation due to an inadvertently opened channel gate.
 - a) Corrective Actions:
 - Gate status is checked daily while Operations revises a procedure to allow power to be removed from the gates to the Cold Water Return Channel unless Closed Cycle Operation is necessary.

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- Operations has the procedure revision scheduled.
3. July 21, 1998 - An unmanned truck rolled down a hill and into the Diffuser Pond, creating a reportable oil sheen.
- a) Corrective Actions:
- Vehicle was removed (which removed the source of the sheen)
 - The sheen was contained and cleaned up in the Diffuser Pond.
 - Samples were obtained throughout the shift and analytical results showed no oil and grease nor benzene, toluene, ethylbenzene or xylene was released to the Chickamauga Reservoir.

VI. CHANGES MADE TO APPLICABLE STATE AND FEDERAL PERMIT CERTIFICATIONS

1. **Air Permits:** Concurrence and/or permit changes were received from Hamilton Country Air Pollution Control Bureau as follows:
- a) January 27, 1998 - Permission for relocation of the Front Modification Insulator Saw.
- b) May 22, 1998 - Revised Federally Enforceable Certificate of Operation for the Emergency Diesel Generators, Back Up Security Diesel and Auxiliary Boilers to include the statement of basis for potential emissions versus limitation imposed by Synthetic Minor Source Status.
- c) August 17, 1998 - Revised Federally Enforceable Certificate of Operation for the Emergency Diesel Generators, Back Up Security Diesel and Auxiliary Boilers allowing the sulfur content of each shipment of diesel fuel received at the facility for combustion in either of the two auxiliary boilers, any of the six generators, or the pump engine to be documented by a written certification from the supplier.
2. **NPDES Permits:** Concurrence was received from the Tennessee Department of Environment and Conservation Division of Water Pollution Control as follows:
- a) June 26, 1998 - H130M treatment of ERCW as separate trains over 12 hour periods.
- b) August 26, 1998 - Alternate discharge of untreated ERCW to Yard Drainage or Turbine Building Sump for maintenance activities.

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- c) September 30, 1998 - Permission to perform regeneration of the Electro Deionization Tank as a part of the water treatment plant discharge to Outfall 103 received.
3. **Tennessee Division of Underground Storage Tanks:** Classification of the Security Diesel Generator Underground Storage Tank as exempt per 10CFR50 Appendix A received from Tennessee Department of Environment and Conservation Division of Underground Storage Tanks - June 9, 1998

VII. CHANGES IN FACILITY DESIGN OR OPERATION

In accordance with Technical Specification (TS) 5.3.c., facility design and operational changes were reviewed for potential affect on the environment. A study of facility design and operational changes proposed from October 1, 1997, through September 30, 1998 was performed. Projects considered as having potential impact on the environment included: those that could have caused waste stream generation/alteration; or that required the acquisition/modification of permits; or involved the use of hazardous material; or required physical construction. The study, performed in accordance with the guidelines of the Tennessee Valley Authority's National Environmental Policy Act (NEPA) program, documented that design and operational changes did not involve an unreviewed environmental question.

Facility design and operational changes made or proposed during this report period were reviewed for potential to affect the environment as described below. None were found to result in an unreviewed environmental question. The following criteria were used to identify those projects with a potential for environmental affects:

- A. Waste stream generation/alteration
(Air, Hazardous Waste, Solid Waste, PCBs, Asbestos, Wastewater)
- B. Permit Acquisition/Modification
[NPDES, Air, Inert Landfill, Other (316a, 404, etc.)]
- C. Hazardous Materials
- D. Physical Construction Involved
(Erosion/Sedimentation Effects, Transportation Effects, Noise Effects, Groundwater Effects, Surface Water Effects, Floodplain Effects, Wetland Effects, Prime Farmland Effects, Unique Natural Features Effects, Aquatic Ecology Effects, Terrestrial Ecology Effects, Protected Species Effects, Sensitive Habitat Effects, Visual Effects, Historical, Cultural and Archeological Effects, Changes in Site Land Use, and Controversy)

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1. Special Tests

There were no special tests conducted during this period that met environmental impact criteria.

2. Temporary Alterations

1. SQN-2-SNUB-5004A (U2 SG Loop 4 Remote Hydraulic Reservoir)
2. Raw Cooling Water Injection of H-130M Using a Vendor Supplied Injection Skid
3. Routing of Back Wash Piping on All Four ERCW Strainers to Prevent Chemical Discharge to the Sequoyah Intake

3. Design and Operational Changes

All Facility design and operational changes made during this report period with a potential impact on the environment were found to be within the scope of existing permits and in compliance with Environmental Regulations. Those changes reviewed are as follows:

1. Participate in DOE demonstration of reactor fuel derived from off- spec highly enriched uranium.
2. U2C9 Ice Condenser Floor Replacement
3. Replace Worn & Obsolete Recorders U1C9 and Nonoutage
4. Replace Worn & Obsolete Recorders U2C9 and Nonoutage
5. U2 Replace Angle Root Valves
6. U1 Replace Angle Root Valves
7. Thermocouples for Diesel Generators (T12958)
8. Unit 1 Main Generator Loss of Field Relay
9. Unit 2 Main Generator Loss of Field Relay
10. TPS Switchyard Recorders (DCN T-13199)
11. Unit 1 Primary Zinc Injection System
12. Condenser Sparger Relocation - Unit 2
13. Primary Zinc Injection System Unit 2
14. Replace Polar Crane Main and Aux Hoist MG Sets Unit 1
15. Replace Polar Crane Main and Aux Hoist MG Sets Unit 2

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16. Turbine Building Cranes Radio Control Replacement Unit 1
17. Turbine Building Cranes Radio Control Replacement Unit 2
18. CCW Water Treatment System
19. PCB Risk Reduction (39 remaining transformers)
20. Contractor Facility Complex (modular buildings behind solar building)
21. Plant Roadway Paving
22. Ice Condenser Floor Dewatering U1C10
23. Ice Condenser Floor Dewatering U2C10
24. Restroom at Warehouse 9
25. Access walkways in east/west valve rooms
26. U1 Turbine Impulse PS/PT SQ962627PER documented the failure of two
27. U2 Turbine Impulse PS/PT SQ962627PER documented the failure of two
28. U1 SG Replacement
29. U2 SG Replacement
30. UNIDs for TBS Discharge Piping
31. U2C9 CRDM Transfer Switch
32. Demolition of Design Services Buildings
33. U2 Replace Vacuum Breaker on CCS Surge Tank and Hold Up Tank
34. U1 Replace Vacuum Breaker on CCS Surge Tank and Hold Up Tank

VIII. NON-ROUTINE REPORTS

Only non-routine reports for matters regulated under the Clean Water Act were submitted during this period. Copies of these reports were previously submitted to NRC. These reports are as follows:

- May 26, 1998 - Sodium Hypochlorite Spill Emergency Release Report
- July 22, 1998 - Oil Sheen on Diffuser Pond Emergency Spill Report

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IX. SPECIAL STUDIES

There were no special studies conducted during this period.

X. CHANGES IN APPROVED ENVIRONMENTAL TECHNICAL SPECIFICATION

There were no changes in approved environmental technical specifications during this period.