



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

November 12, 1999

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, 1998, through September 30, 1999. This report is submitted in accordance with Appendix B of the SQN Operating License, Section 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 Galas  
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, 1998, through September 30, 1999**

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## I. INTRODUCTION

The Sequoyah Nuclear Plant Annual Non-Radiological Environmental Operating Report for the period of October 1, 1998, through September 30, 1999, is prepared in accordance with Environmental Technical Specifications (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 nonroutine reports submitted per ETS Section 4.1.
- ◆ Special studies.
- ◆ Changes in approved ETS.

Reporting, monitoring, and inspections conducted as required by permits and regulations indicated no adverse impact on the environment as a result of station operation. There was one environmental study, Sequoyah Nuclear Plant - June 1999 Intake Channel Survey (SQ000007) (AJM60). The study was performed by TVA's Energy Research and Technology Applications organization. The report was submitted to Sequoyah Nuclear Plant on August 18, 1999. The study concluded that the cooling intake channel has free, unobstructed passage to the intake pumps. The erosion on the right bank in the vicinity of station 14+00R appears to be stabilizing from vegetation. The Skimmer Wall Dike leading to Cell 1 is in need of repair. The Skimmer Wall Dike repair was completed September 24, 1999.

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

1. Revised Waste Streams 11 and 45 - submitted to the Tennessee Department of Environment and Conservation on October 2, 1998
2. Third Quarter 1998 Summary of Asbestos Removal Projects - submitted to the Hamilton County Air Pollution Control Bureau on October 7, 1998
3. Revised Waste Streams 11 and 47 - submitted to the Tennessee Department of Environment and Conservation on October 26, 1998
4. New Waste Streams 48 and 49 - submitted to the Tennessee Department of Environment and Conservation on October 26, 1998
5. New Waste Stream 50 - submitted to the Tennessee Department of Environment and Conservation on October 26, 1998
6. Annual Asbestos Removal Notification - submitted to Hamilton County Air Pollution Control Bureau on November 13, 1998

7. Monitoring Frequency for the Presence of Radioactive By-product Material Sequoyah Nuclear Plant Sewage - submitted to Department of Public Works, Chattanooga, Tennessee, on November 13, 1998
8. Special Waste Permit Application Annual Renewal for Secondary System Water Resin, Filter Sand, Thermolag, and Fluorescent Tubes - submitted to Tennessee Department of Environment and Conservation on November 18, 1998
9. Verification of EPA RCRA ID Number - submitted to Environmental Protection Agency EPCRA Reporting Center on December 7, 1998
10. Registration of Tennessee Valley Authority Sequoyah Nuclear Plant Polychlorinated Biphenyls (PCBs) Transformers - submitted to the Environmental Protection Agency on December 8, 1998
11. Resubmittal of Notice of PCB Activity Form and correction of PCB Transformer Registration Form - submitted to the Environmental Protection Agency on December 12, 1998
12. Application for Permanent Closure of Underground Storage Tank Systems, Tennessee Valley Authority, Sequoyah Nuclear Plant - submitted to the Tennessee Department of Environment and Conservation on January 7, 1999
13. Fourth Quarter 1998 Summary of Asbestos Removal Projects - submitted to the Hamilton County Air Pollution Control Bureau on January 8, 1999
14. Special Waste Permit Application Annual Renewal for Secondary System Water Resin, Filter Sand, Thermolag, and Fluorescent Tubes - submitted to the Tennessee Department of Environment and Conservation on January 29, 1999
15. Special Waste Permit Application for Roofing Material - submitted to the Tennessee Department of Environment and Conservation on February 8, 1999
16. Tier Two Emergency and Hazardous Chemical Inventory - submitted to the Local Emergency Planning Commission on February 23, 1999
17. Annual Hazardous Waste Activity Report for 1998 - submitted to the Tennessee Department of Environment and Conservation on February 24, 1999
18. Sequoyah Nuclear Plant Hazardous Waste Minimization Plan - maintained on file at Sequoyah since March 1, 1999
19. Permanent Closure Report for Underground Storage Tank Facility ID 0-330628, Tennessee Valley Authority, Sequoyah Nuclear Plant - submitted to the Tennessee Department of Environment and Conservation on March 22, 1999
20. First Quarter 1999 Report on Nonscheduled Removal of Asbestos Containing Material - submitted to the Hamilton County Air Pollution Control Bureau on April 7, 1999
21. New Waste Stream 51 - submitted to the Tennessee Department of Environment and Conservation on April 7, 1999
22. Special Waste Permit Application Annual Renewal for Kaowool - submitted to Tennessee Department of Environment and Conservation on April 13, 1999
23. Sequoyah Nuclear Plant Annual Report on The Hours of Operation for The Auxiliary Boilers A&B; Emergency Diesel Generators 1-A, 1-B, 2-A & 2-B; The Security Diesel Generators; The High Pressure Fire Pump Diesel Motor; And The Information Services Backup Power Supply Diesel Generator - submitted to the Hamilton County Air Pollution Control Bureau on April 30, 1999

24. Amendment to Sequoyah Nuclear Plant's 1997 and 1998 Hazardous Waste Identification Reports - submitted to the Tennessee Department of Environment and Conservation on May 12, 1999
25. Testing of Backflow Prevention Devices at SQN - submitted to the Hixson Utility District on May 12, 1999
26. Microcomputer Diskette containing Toxic Chemical Release Information Required by Emergency Planning And Community Right to Know Act - submitted to the Environmental Protection Agency EPCRA Reporting Center on June 16, 1999
27. Written Annual Document Log of PCBs and PCB Items for Calendar Year 1998 - maintained on file since July 1, 1999
28. Second Quarter 1999 Summary of Asbestos Removal Projects - submitted to the Hamilton County Air Pollution Control Bureau on July 6, 1999
29. Demolition/ Removal Permit Application for Modifications Insulator Shop - submitted to the Hamilton County Air Pollution Control Bureau on July 21, 1999
30. Relocation of Modifications Insulator Shop Saws - submitted to the Hamilton County Air Pollution Control Bureau on July 22, 1999
31. 1998 Environmental Profile Update of SQN - submitted to the Environmental Protection Agency by e-mail on August 31, 1999
32. 1999 Solid Waste Facility Annual Report/Fee - submitted to the Tennessee Department of Environment and Conservation on September 2, 1999
33. Emergency Start of Diesel Generators - submitted to the Hamilton County Air Pollution Control Bureau on September 21, 1999

### **III. ENVIRONMENTAL MONITORING PERFORMED**

1. Storm water samples taken at required frequencies and Best Management Practices implemented as required by 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 General Industrial Storm Water Discharge Permit TNR0015
4. Weekly tank, piping and secondary containment inspections are performed as required by 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 by the Tennessee Rule Chapter 1200, Hazardous Waste Management
6. Weekly landfill inspections performed as required by 40CFR261 and by the Tennessee Rule Chapter 1200, Hazardous Waste Management
7. Daily 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 by the Tennessee Rule Chapter 1200, Hazardous Waste Management
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 Tennessee Rule Chapter 1200, Hazardous Waste Management
17. National Environmental Policy Act (NEPA) reviews are conducted to evaluate potential environmental impact of temporary or permanent facility modifications

**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, 1998 - September 30, 1998 - submitted on October 13, 1998
2. Semiannual Aquatic Toxicity Monitoring Studies - submitted with the quarterly Discharge Monitoring Report on October 13, 1998
3. Discharge Monitoring Report for the period of October 1, 1998 - December 30, 1998 - submitted on January 13, 1999
4. Sequoyah Nuclear Plant, NPDES Permit No. 0026450, Reverse Osmosis Process - submitted to the Tennessee Department of Environment and Conservation on February 12, 1999
5. Amended Discharge Monitoring Report for December 1998 - submitted to the Tennessee Department of Environment and Conservation on March 19, 1999
6. Sequoyah Nuclear Plant, 1998 Discharge Monitoring Report - Quality Assurance (DMR-QA) Study 18, NPDES Permit No. TN0026450 - submitted to the Tennessee Department of Environment and Conservation on March 26, 1999
7. Multi-Sector General Permit 1998 Storm Water Monitoring Report - submitted to the Tennessee Department of Environment and Conservation on March 30, 1999
8. Discharge Monitoring Report for the period of January 1, 1999 - March 31, 1999 - submitted on April 14, 1999
9. Semiannual Aquatic Toxicity Monitoring Studies - submitted with the quarterly Discharge Monitoring Report on April 14, 1999



10. Discharge Monitoring Report for the Period of April 1 - June 30, 1999 - submitted on July 13, 1999
11. State Certified Operator in Direct Charge for Wastewater System - submitted on July 26, 1999
12. Diffuser Pond Fish Kill on July 13, 1999 - submitted to the Chattanooga Environmental Assistance Center on August 4, 1999
13. NPDES Permit TN0026450, Bypass of Outfall 116 - submitted to the Tennessee Department of Environment and Conservation on August 20, 1999

## **V. ENVIRONMENTAL TECHNICAL SPECIFICATION NONCOMPLIANCES**

1. March 18, 1999 - The Lined Metal Pond, Outfall 107, was discharged to Outfall 103, the Low Volume Waste Treatment Pond. End of discharge samples for Total Suspended Solids, Fe, and Cu were collected upon discharge termination as specified in the Permit. However, these samples were not transmitted to the Environmental Chemistry Lab within the 7-day maximum holding period for TSS as specified in 40 CFR 136.3, Table II.
  - (a) Personnel accountability for the sample custody through analysis process is being emphasized. A new tracking system for the process has been initiated.
2. August 2, 1999 - The Low Volume Waste Treatment Pond, Outfall 103, exceeded the 6.0 - 9.0 pH limit of the NPDES Permit. The pond was isolated. Plant operating records were thoroughly reviewed, and all discharges were found to be within their normal operating range.
  - (a) This problem should be naturally mitigated with rainfall and cooler weather. During current weather conditions, frequent monitoring of the pH within various areas of the pond is being performed. Whenever the pH in these areas exceeds 8.5 pH units, the pond is isolated until a pH of approximately 8 pH units can be restored.

## **VI. CHANGES MADE TO APPLICABLE STATE AND FEDERAL PERMIT CERTIFICATIONS**

1. **Air Permits:** Concurrence and/or permit changes were received from the Hamilton County Air Pollution Control Bureau as follows:
  - (a) Demolition/ Removal Permit Application for Modifications Insulator Shop - submitted to the Hamilton County Air Pollution Control Bureau on July 21, 1999
  - (b) Relocation of Modifications Insulator Shop Saws - submitted to the Hamilton County Air Pollution Control Bureau on July 22, 1999

2. **NPDES Permits:** Concurrence was received from the Tennessee Department of Environment and Conservation Division of Water Pollution Control as follows:
  - (a) Sequoyah Nuclear Plant, NPDES Permit No. 0026450, Reverse Osmosis Process - submitted to the Tennessee Department of Environment and Conservation on February 12, 1999
  - (b) NPDES Permit TN0026450, Bypass of Outfall 116 - permission given on Thursday, July 15, 1999, due to aquatic weeds clogging up the culvert system.
3. **Air Permits:** Concurrence and/or permit changes were received from Hamilton Country Air Pollution Control Bureau as follows:
  - (a) Permanent Closure Report for Underground Storage Tank Facility ID 0-330628, Tennessee Valley Authority, Sequoyah Nuclear Plant - submitted to the Tennessee Department of Environment and Conservation on March 22, 1999.

## 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 effect on the environment. A study of facility design and operational changes proposed from October 1, 1998, through September 30, 1999, 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, and 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)

1. **Special Tests**

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

2. **Temporary Alterations**

Less than 24-hour routing of the screen backwash on all four Essential Raw Cooling Water (ERCW) strainers through rip rap and straw back into the Sequoyah intake.

3. **Design and Operational Changes**

All facility design and operational changes made during this reporting 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:

- (a) Unit 2 Cycle 9 (U2C9) ice condenser floor replacement
- (b) Unit 2 replace worn & obsolete recorders U1C9 and nonoutage
- (c) Unit 2 replace worn & obsolete recorders U2C9 and nonoutage - additional equipment
- (d) Unit 2 replace angle root valves
- (e) Unit 1 replace angle root valves
- (f) Thermal couples for diesel generators (T12958)
- (g) Unit 1 - main generator loss of field relay
- (h) Unit 2 - main generator loss of field relay
- (i) TPS switchyard recorders (DCN T-13199)
- (j) Replace vital inverters (new with static switches and reg. transf) Unit 2
- (k) ERCW strainer backwash and flush valves
- (l) Multi-purpose building at bubble building pad removal and dirt excavation
- (m) Flammable liquid storage facility
- (n) Replacement of potable water lines
- (o) Office and Power Stores floor addition
- (p) Hypochlorite building renovation
- (q) TPS shed removal
- (r) Auxiliary building chiller water pump expansion tank level control

- (s) Split pin replacements Unit 1
- (t) Split pin replacements Unit 2
- (u) ERCW 1B cooler piping replacement
- (v) Grounds storage building
- (w) Plant turbine building roof
- (x) TPS shop modification (permanent utilities)
- (y) Upgrade service building shop mezzanine as required
- (z) Energy compliance upgrades
- (aa) Handicap compliance construction
- (bb) Unit 1 RCP No. 2 platform modification to support main flange bolt work
- (cc) Unit 2 RCP No. 1 platform modification to support main flange bolt work
- (dd) Positive displacement pump abandonment
- (ee) Setpoint revisions for heat trace recorders and controllers
- (ff) MCR and EBR chiller TCV replacement
- (gg) Abandon Equipment 1-HO-95-0141, 2-HO-95-1762, 2-HO-95-1784, and 1-HO-95-1783
- (hh) Brick work in roadway
- (ii) Entrance and west side area planting plan
- (jj) Cleaning of existing railroad tracks for rotor receipt
- (kk) Abandon Equipment Group 3
- (ll) Abandon Equipment Group 4
- (mm) DCN to reroute the Unit 1 bus duct cooler discharge piping
- (nn) DCN to reroute the Unit 2 bus duct cooler discharge piping
- (oo) Maintenance of an existing skimmer wall
- (pp) Emergency core cooling system throttle valves Unit 2
- (qq) 1-TCV-61-71 floor glycol TCV
- (rr) 1-RE-90-404 condenser vacuum radiation monitor
- (ss) 2-RE-90-404 condenser vacuum radiation monitor
- (tt) Replace Condenser Vacuum Breaker Valves 1 and 2-PCV-6-330
- (uu) 2-TCV-61-71 floor glycol TCV
- (vv) Third charging pump Unit 1
- (ww) Third charging pump Unit 2
- (xx) Emergency core cooling system throttle valves Unit 1

## VIII. NON-ROUTINE REPORTS

Only non-routine reports for matters regulated under the Clean Water Act were submitted during this period.

*Diffuser Pond Fish Kill Report on August 4, 1999*

## **IX. SPECIAL STUDIES**

There was one environmental study, Sequoyah Nuclear Plant - June 1999 Intake Channel Survey (SQ000007) (AJM60). The study was performed by TVA's Energy Research and Technology Applications organization. The report was submitted to Sequoyah Nuclear Plant on August 18, 1999. The study concluded that the cooling intake channel has free, unobstructed passage to the intake pumps. The erosion on the right bank in the vicinity of station 14+00R appears to be stabilizing from vegetation. The Skimmer Wall Dike leading to Cell 1 is in need of repair. The Skimmer Wall Dike repair was completed September 24, 1999.

## **X. CHANGES IN APPROVED ENVIRONMENTAL TECHNICAL SPECIFICATION**

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