

TENNESSEE VALLEY AUTHORITY
KNOXVILLE, TENNESSEE 37902

TVA Mailroom

AUG 31 1982

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Mr. John Marlar, Chief
Facilities Performance Branch
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Mr. Marlar:

NOTIFICATION OF NONCOMPLIANCE WITH EFFLUENT LIMITATIONS - NPDES PERMIT NO.
TN0026450 - SEQUOYAH NUCLEAR PLANT

Description of the discharge--Discharge Serial No. 007 - Yard drainage pond effluent to the diffuser pond. Two samples collected on August 4, at 12 a.m. and 5:15 p.m. exhibited pH values of 9.5 and 9.1, respectively, exceeding the maximum permit limitation of 9.0 standard units (s.u.). The flow rate for this discharge was 4.6 MGD.

Two samples collected on the same date at 5:20 p.m. and 10:45 p.m. from the diffuser gate discharge (DSN 024) contained total residual chlorine (TRC) concentrations of 0.3 mg/L and 0.4 mg/L, respectively, exceeding the maximum instantaneous permit limitation of 0.1 mg/L. The flow rate for this discharge was 852.6 MGD.

Cause and period of the noncompliance--During startup operations, the product from our sodium hypochlorite generation system was released into the yard drainage system. Approximately 1080 gallons of four percent by weight sodium hypochlorite solution were released over a 12-hour period from August 3 until the morning of August 4. This release resulted in both the yard pond discharge pH noncompliance and the diffuser gate discharge TRC noncompliance.

Samples collected from DSN 007 on August 3 at 12 a.m. and August 4 at 10:50 p.m. exhibited pH values of 8.5 and 8.9 s.u., respectively. Therefore, the possible period of pH noncompliance was less than 35 hours.

Monitoring for TRC from DSN 024 on August 4 at 10:45 a.m. and on August 5 at 2 a.m. revealed concentrations of less than 0.1 mg/L in both samples. Therefore, the possible period of TRC noncompliance was less than 16 hours.

The Tennessee riverflow past SQN during the periods of noncompliance was approximately 43,000 cfs. Since the diffuser gate discharge during this time was 1,300 cfs, the effluent was diluted by a factor of 33, assuming complete mixing. This would result in a TRC concentration of 9×10^{-3} mg/L and 1.2×10^{-2} mg/L, respectively, at the edge of the mixing zone. Based on the above information, we do not believe the TRC noncompliance had any significant environmental impact on the Tennessee River.

During the above periods of noncompliance, a number of dead fish were observed in the diffuser pond. Details of our investigation are presented in the enclosure.

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Mr. John Marlar, Chief

Steps taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge--The release from the hypochlorite system to the yard drainage system was terminated at 3 p.m. on August 4. Monitoring of TRC was performed at an increased frequency until the diffuser gate discharge returned to compliance.

Operation of the hypochlorite generation system has been terminated due to the high cost of hypochlorite production as compared to the cost of offsite purchasing.

In the event future commercial hypochlorite solution cost increases above our production cost, operation of the hypochlorite system will be reinstated. However, steps have been taken to route product solution from future system startups (e.g., for testing) to storage tanks without a release.

Sincerely,

Original Signed By
M. Paul Schmierbach

Mohamed T. El-Ashry, Ph.D.
Director of Environmental
Quality

Enclosure

cc (Enclosure):

Mr. Harold R. Denton, Director (5)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Washington, DC 20555

Mr. Jack R. McCormick, Basin Manager
Chattanooga Basin Office
Division of Water Quality Control
2501 Milne Street
Chattanooga, Tennessee 37406

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street
Atlanta, Georgia 30303

Tennessee Department of Public Health
Division of Water Quality Control
150 Ninth Avenue, North
TERRA Building
Nashville, Tennessee 37203

ENCLOSURE

On the morning of August 4 approximately 1,000 dead fish of several species were observed in the diffuser pond. A sample collected at the pond discharge (DSN 007) to the diffuser pond at approximately 12 a.m. contained a TRC concentration of 5.0 mg/L and exhibited a pH of 9.5 s.u. Grab samples from the diffuser gate discharge revealed the following TRC concentrations:

<u>DATE</u>	<u>TIME</u>	<u>NUMBER OF SAMPLES</u>	<u>CONCENTRATION</u>
August 4	10-10:45 a.m.	4	<0.1 mg/L
August 4	5:20 p.m.	1	0.3 mg/L
August 4	10:45 p.m.	1	0.4 mg/L
August 5	2:00 a.m.	1	<0.1 mg/L

Additional monitoring at various locations within the diffuser pond indicated dissolved oxygen values ranging from 4.0 to 4.6 mg/L, pH from 6.9 to 6.9, and water temperature from 102°F to 104°F. Temperature data on August 2 through August 4 indicate the maximum recorded diffuser gate temperature was 104.5°F, maximum change in upstream-downstream river temperature was 3.2°F, and the maximum downstream river temperature was 82.3°F. The diffuser gate temperature from July 1-August 1, 1982 ranged from 102.7°F to 105.2°F.

Based on the above data and observations by a biologist from our Office of Natural Resources, we believe the death of these fish cannot be contributed to a single factor but was a cumulative effect from heat stress and chlorine exposure. Based on this data, we also believe there was no significant environmental impact to the Tennessee River as a result of the above events. The dead fish were collected, categorized, and disposed of following notification of EPA, the State of Tennessee (Division of Water Quality Control and Wildlife Resource Agency), and the Nuclear Regulatory Commission (NRC).