Tennessee Valley Authority, Post Office Box 2000, Soddy Daisy, Tennessee 37384-2000

July 14, 2011

Mr. Paul E. Davis, Director
Division of Water Pollution Control
Department of Environment and Conservation
6th Floor, L & C Annex
401 Church Street, Nashville, TN 37243

Dear Mr. Davis:

TENNESSEE VALLEY AUTHORITY (TVA) - SEQUOYAH NUCLEAR PLANT NPDES PERMIT NO. TN0026450 - WRITTEN SUBMISSION REGARDING DIFFUSER POND RELEASE

TVA is providing written notification for the subject release that occurred on July 12, 2011. The verbal notification for the diffuser pond release was provided by telephone notification to you via voice message on July 13, 2011, at 0023 and to Dr. Richard Urban with the Chattanooga Environmental Field Office (EFO) on July 13, 2011, at 0740. Please see the Attachment (enclosed) for details of the event. Site personnel visually surveyed the near-shore area by foot and observed no fish distress, fish mortality, abnormal bird migration, oil sheen, or floating solids during the early evening hours of the event.

If you have any questions or need additional information, please contact Stephanie Howard of Sequoyah's Environmental staff at (423) 843-6700.

I *certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Sincerely,

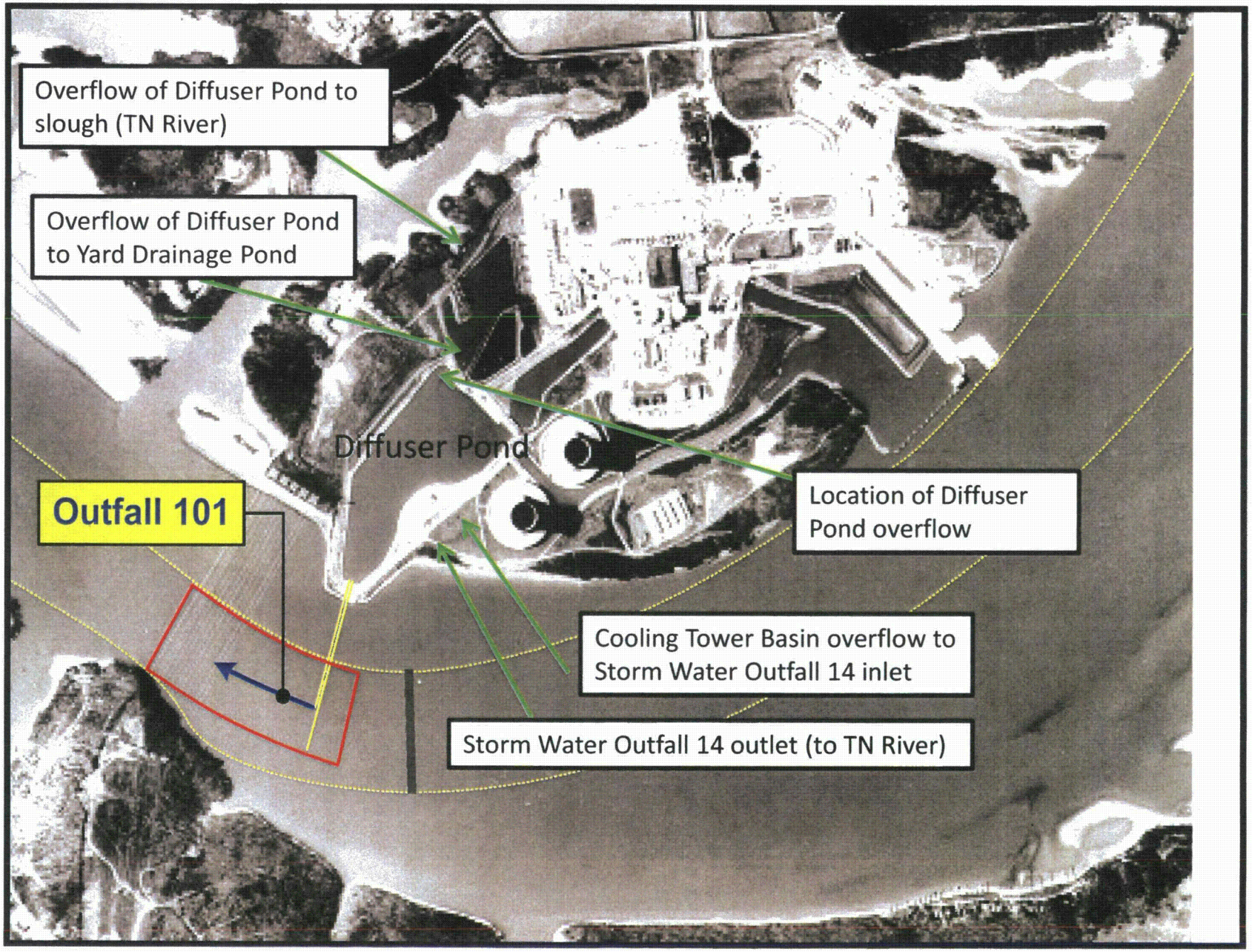
Michael D. Skaggs
Site Vice President
Sequoyah Nuclear Plant

Enclosures
cc (Enclosures):
Chattanooga Environmental Field Office
Division of Water Pollution Control
State Office Building, Suite 550
540 McCallie Avenue
Chattanooga, Tennessee 37402-2013

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

C001
MRL

Sequoyah Nuclear Plant – Photo Showing Diffuser Pond Overflow



Attachment
Sequoyah Nuclear Plant Diffuser Pond Release
07/12/2011

Description of the Discharge and Determination of Cause:

At approximately 15:45 EST on 7/12/11, one of the two diffuser gates at Sequoyah failed in the closed position, resulting in loss of flow through the west diffuser pipe. The east diffuser pipe remained open and continued to discharge via Outfall 101. Plant personnel made several unsuccessful attempts to raise the diffuser gate utilizing divers, multiple rigging techniques, and cranes with various capacities.

At approximately 20:00 EST, the northwest corner of the Diffuser Pond overflowed into a drainage ditch to the Yard Drainage Pond. The drainage ditch is designed to route storm water from the construction and demolition landfill to the Yard Drainage Pond. The Diffuser Pond contains predominantly condenser circulating water (CCW) used in the secondary (non-nuclear) side for cooling along with yard drainage from the Yard Drainage Pond and low volume waste from the Low Volume Waste Treatment Pond (IMP 103).

Due to increasing water level in the Yard Drainage Pond, the flow also started to move westward through a heavily vegetated area approximately 0.10 mile to a slough at 21:30 EST. This slough is between the Sequoyah Training Center and site contractor parking lot. As pond levels continued to increase, the Cooling Tower Basin (containing CCW) overflowed into the river through Storm water Outfall 14 (SW 14) located near the cooling towers. The Diffuser Pond never breached the dike between the Diffuser Pond and the Tennessee River.

When it was determined that the diffuser gate could not be opened and pond levels continued to rise, both units were derated to 85% power. This allowed the safe removal of two CCW pumps from service, reducing input into the Diffuser Pond by approximately 374,000 gpm. The cooling towers remained in service during this event and are still in operation.

During the releases, site personnel visually monitored by boat and land Outfall 101 and the overflow to the slough for floating solids and debris and none were observed. Site personnel visually surveyed the near-shore area by foot and observed no fish distress, fish mortality, abnormal bird migration, oil sheen, or floating solids during the early evening hours of the event. This was confirmed by boat with TVA biologists on 7/13/11. At this time, SQN is unable to determine the volume of the releases.

Period of Discharge to the Tennessee River:

The Diffuser Pond started to discharge to the slough at 21:30 EST on 7/12/11 and continued until 01:00 EST on 7/13/11. The Cooling Tower Basin discharged to SW 14 for a maximum of four hours. The storm water outfall was observed at 21:00 EST on 7/12/11 to have no flow. However at 23:00 EST, flow was observed. At 00:50 EST on 7/13/11, flow at SW 14 had stopped.

Steps Being Taken to Reduce, Eliminate, and Prevent Recurrence

SQN has documented the release in the TVA Corrective Action Program and is in the process of determining corrective actions to reduce and prevent recurrence of these releases. Updates will be provided in the July DMR.

To date, two CCW pumps remain out of service in order to reduce flow entering the Diffuser Pond. This has been effective in both lowering the Diffuser Pond level and stopping the releases.

The Diffuser Pond gate closed due to the failure of pulley components during gate maintenance. On 7/13/11, an attempt to lift the gate was unsuccessful. SQN continued to work through this issue by installing new pulley components directly to the gate in an attempt to use the existing hoist system to lift it. The gate was lifted and removed at approximately 15:00 EST on 7/14/11. The Diffuser Pond water level continues to decrease to normal levels.

Additional Details:

The Diffuser Pond water was sampled just prior to entering the slough at 00:10 EST on 7/13/11. The temperature was 94.8 deg F. Oil and grease (O&G) and Total Suspended Solids (TSS) from this location were also collected and are currently pending analysis. It should be noted that the temperature from a grab sample taken at in the south end of the Diffuser Pond at 23:00 EST on 7/12/11 was 102 deg F.

In addition, plant personnel mobilized a boat and crew to monitor the slough for temperature, pH, TSS, O&G, and Total Residual Chlorine (TRC). Results of samples taken in the slough are:

Sample Location	Date	Time (EST)	Temperature (°F)	TRC (mg/L)	pH
Water at point of entry in slough	07/13/11	00:48	91.8	0.09	6.75
Sample at 30 yards from point of entry	07/13/11	00:37	87.5	0.07	8.07
Water at point of entry in slough	07/13/11	01:39	88.1	0.08	7.21
Sample at 30 yards from point of entry	07/13/11	01:48	88.6	0.06	7.23

Note: These samples were taken to determine representative conditions in the slough and cannot be compared directly with the NPDES permit limits for Outfall 101.
Note: TSS and O&G samples were collected and sent to an offsite laboratory for analyses as a precautionary measure.
Note: The TRC values are within the permit limit of 0.1 mg/L. It is suspected that the results noted above are high due to manganese interference which is commonly seen in river sample matrix. A sample of the river was collected to determine background. The sample was 0.05 mg/L, confirming the interference. The TRC results above are uncorrected.