TENNESSEE VALLEY AUTHORITY
Kingston, Tennessee 37763
Kingston Fossil Plant

January 10, 1991

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Mr. Sims Crownover
Tennessee Dept. of Health and Environment
Division of Water Pollution Control
TERRA Building
150 Ninth Avenue, North
Nashville, Tennessee 37219-5404

Dear Mr. Crownover:

NPDES PERMIT NO. TN0005452 - KINGSTON FOSSIL PLANT

As a result of heavy rainfall during the previous two weeks, three unanticipated bypasses occurred at Kingston Fossil Plant, TVA.

On Sunday, December 23, 1990 at 11:30 a.m., it became necessary to divert flood waters from the plant coal yard drainage area to the Clinch River. Heavy rains (5.94 inches of rain fell at the plant site between 6 a.m., December 22 and 6 a.m., December 23) resulted in the coal yard drainage pond level rising several feet over its banks to flood the pump house, thereby potentially rendering the pumps inoperable. While no sample was taken on this release, the operator intentionally drained water from the highest ground elevation possible, thereby ensuring the runoff would be strictly rainfall. Additionally the operator noted that the runoff was clear with no film or observable suspended solids. The bypass ended at 9:30 a.m., December 24.

The second bypass occurred at the Makeup Water Treatment Plant (MUWTP) drainage sump on January 3, 1991. The MUWTP sump pump discharge normally ties into the powerhouse station sump discharge pipe at an isolation pit; this line discharges to the ash pond. The combination of a pipe leak in the junction of the MUWTP and station sump discharge lines, and the collection of rainwater in the pit while it was exposed for repairs, caused the isolation pit to fill and overflow to a storm drain which discharges to the plant intake channel. While this problem was being investigated, the check valve in the MUWTP sump discharge line failed thereby permitting contents of the powerhouse sump discharge line to backflow through the check valve to the MUWTP sump. This backflow apparently caused the MUWTP sump discharge lines to break resulting in a second overflow; also to the plant intake channel. The MUWTP sump overflowed at approximately 11:45 a.m. and continued intermittently until 5 p.m. The isolation pit overflow occurred at approximately 12:15 p.m. and continued for less than one hour.

No environmental impact would be realized as a result of these bypasses. Samples were obtained for pH and suspended solids at the isolation pit discharge, and for pH and oil and grease at the MUWTP discharge. The point of entry for both discharges was such that both flows were immediately drawn into the plant, therefore subject to tremendous dilution via the Intake Pumping Station (IPS).

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The results of these parameters are as follows:

	Isolation Pit	MUWTP Sump
pH	*3 s.u.	6.1 s.u.
Suspended Solids	43.9 mg/l	-
Oil & Grease	-	20.8 mg/l

*This low pH was due to an acid spill in the MUWTP prior to this event.

There is no environmental impact as a result of the coal yard drainage bypass. This flow was strictly rainwater and as such was no different from that falling offsite.

The station sump bypass was identified as a possible source of noncompliance several months ago. To remedy the situation, we performed initial design on an alternate, redundant discharge line for the five station sumps in the powerhouse. It is our intent to have two sumps discharge through one line with the remaining three discharging through the second. Either line could be used for all five sump discharges since transfers can be made between sumps; this would enable maintenance personnel to perform repairs on one line while discharges could continue through the second.

Due to frequent maintenance problems, the coal yard drainage pond discharge equipment was marked for upgrade prior to this rainfall event. It is our intent to install pumps of higher capacity and possibly install larger diameter discharge piping.

With regard to the MUWTP sump overflow, modifications will be made so that the discharge line will not tie into the station sump discharge. The line will be extended to independently route the flow to the plant sluice line trench.

These bypasses were verbally reported to the regional office. If you have any questions or need further information, please contact Mary Jane Vickers at (615) 376-6135.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

Important! If you do not receive all pages, call us back immediately

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