



VIRGINIA POWER

October 13, 1994

Mr. Janardan R. Pandey
Valley Regional Office
Department of Environmental Quality
P. O. Box 268
Bridgewater, VA 22812

Re: North Anna Power Station - VPDES Permit No. VAG052451
Sewage Treatment Plant Upsets, 9-20-94

Dear Dr. Pandey:

This is in follow up to the reported sewage treatment plant upsets at North Anna Power Station on September 20, 1994, that Mr. Daniel James of my staff discussed with you by telephone on October 6, 1994. These upsets impacted the facilities discharging via VPDES Permit Outfall 007 and Outfall 011.

On September 20, 1994, personnel from the Water Quality Department sampled several outfalls at North Anna, including 007 and 011, to obtain data for preparation of an application for reissuance of the VPDES permit. These samples were transported to our System Laboratory for analyses. Routine monthly sampling under the permit is conducted by station staff, and the sampling required for September had been conducted at an earlier date.

On October 6, 1994, when the sample results were available from the System Lab, it was discovered that BOD₅ and TSS results for Outfall 007 and TSS results for Outfall 011 exceeded permit limitations. All other parameters and all other outfalls were well within permitted limits. Our investigations revealed the following factors involved in these limits' excursions:

Outfall 007, Package Sewage Treatment Plant-

This small, 10,000 gpd design package plant serves an office building and contractor shops. Influent flow is light and intermittent. The influent flow rate was only 4,315 gpd on September 20.

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At the time of the initial sampling visit on 9-20, it was noticed by the Water Quality staff that the aerators did not cycle on during the time they were at the facility and that the STP contents were changing to a blacker color than normal. Although the effluent was black, it was still transparent with what appeared, at that time, to be very few visible solids. This was reported to the facility operator after the first set of samples for the day had been taken.

The STP operator checked the plant that day and found that the aerators had been electrically tripped out. This was apparently done by contractors working on unrelated equipment served by the same power source. The operator reset the blower switches and, after aeration was reestablished, the plant contents quickly began returning to a normal light brown color.

During the period of the plant upset due to accidental interruption of aeration, the following excursions were experienced;

	BOD ₅	TSS
1450hrs.	182.75	
1550 "	208.50	61.5
1650 "	165.00	61.5
1750 "	237.75	66.0

Since it was not realized at the time that there had been an upset which impacted effluent quality, additional samples beyond the above, taken for permit application data, were not analyzed. A new operator is now working with this facility; the previous operator left the company at the end of September. The performance of the facility is being improved but still suffers evidently from a loss of microorganism populations during the upset period.

Outfall 011, Main Sewage Treatment Plant-

During the Water Quality Department staff's sampling period, there did not appear to be any obvious problems with the plant or its effluent. After discovery of the higher than normal TSS results, inquiry results revealed that the operator had wasted sludge the morning of the sampling visit. At the time of this process, the operator had wasted more than he normally did in an effort to remove some old sludge from the system. The excessive sludge wasting likely caused resuspension of particulates in the plant which had not had time to resettle

prior to the sampling visit. However, these particulates were evidently inert solids; BOD₅ results during this period were less than 2 ppm.

During the period of the plant upset due to extended sludge wasting, the following excursions were experienced;

	TSS
1420hrs.	84.0
1520 "	66.0
1620 "	84.0
1720 "	56.0

As with the upset event at the package STP, since it was not realized at the time that there had been an upset which impacted effluent quality, additional samples beyond the above, taken for permit application data, were not analyzed. This facility typically produces effluent with relatively low BOD₅ and TSS results.

A new operator is now working with this facility; the previous operator left the company at the end of September. The performance of the facility is being improved but still suffers evidently from insufficient aged sludge.

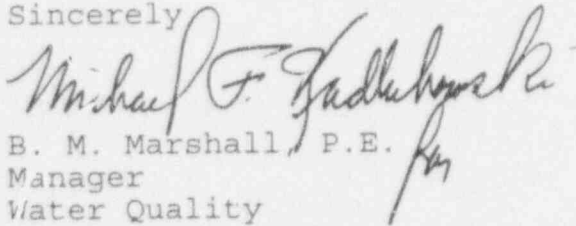
The results of the Water Quality Department sampling were provided to the station's Environmental Compliance Coordinator and included in the data reported on the Discharge Monitoring Report submitted for the month of September. During sampling of the impacted, and other, outfalls, the Water Quality personnel were in the vicinity of the respective discharge points and did not observe any evidence of environmental problems from the discharges nor was there any indication of abnormal discharges at any of the discharge points. The discharge rate of the Outfall 007 during sampling was only an estimated 2-3 gpm, which would have been quickly assimilated by the receiving waters at the subsurface outfall pipe. The solids in the Outfall 011 discharge would likely settle out again in the discharge canal or the Waste Heat Treatment Facility. No detrimental environmental damage would be expected from either discharge.

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We believe that both of these incidents are properly characterized as sewage treatment plant upsets. There are no operational connections or mutual causative factors between the two facilities so, their occurrence on the same day, and on the day of sampling for permit application data, is coincidental. Operations will be monitored and adjustments made to bring these units back into their normal acceptable level of treatment.

Should you desire additional information or have any questions about this matter, please contact Daniel James at (804)273-2996.

Sincerely


B. M. Marshall, P.E.
Manager
Water Quality

cc: U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., NW
Suite 2900
Atlanta, GA 30323
Re: North Anna Units 1 & 2
Docket Nos. 50-338/50-339
License Nos. NPF-4/NPF-7

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
Re: North Anna Units 1 & 2
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Mr. R. D. McWorter
NRC Senior Resident Inspector
North Anna Power Station