

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION
UNITS 1 AND 2

APPENDIX B
ENVIRONMENTAL PROTECTION PLAN
1988 ANNUAL REPORT
DOCKET NOS. 50-338 and 50-339

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Introduction

This 1988 Environmental Operating Report for the North Anna Power Station is submitted by Virginia Electric and Power Company as required under Section 5.4.1 of Appendix B, Environmental Protection Plan (EPP). The objectives of the EPP are to verify that the power station is operated in an environmentally acceptable manner; to coordinate NRC requirements and maintain consistency with other federal, state and local requirements; and to keep NRC informed of the environmental effects of facility construction and operation. During 1988, no significant adverse environmental impact occurred as a result of the operation of North Anna Power Station, Units 1 and 2. Aquatic issues are addressed in the licensee's NPDES permit number VA 0052451 issued by the Virginia State Water Control Board and the NRC relies on this agency for regulation of matters involving water quality and aquatic biota. Listed below are the summaries and reports as required under Section 5.4.1 of the EPP.

Plant Design and Operation (Section 3.1)

There were no changes in station design or operation proposed in 1988 that involved a potentially significant unreviewed environmental issue.

Transmission Line Right of Way Herbicide Management

No herbicides were used for brush control on the North Anna-Midlothian, North Anna-Louisa, or the North Anna-Ladysmith 500 KV lines or on the North Anna-Gordonsville 230 KV lines during 1988.

Transmission Line Right of Way Erosion Control Inspection

Erosion inspections of rights of way were conducted for the North Anna-Midlothian, North Anna-Louisa, and North Anna-Ladysmith 500 KV lines and on the North Anna-Gordonsville 230 KV line on August 11, 1988. Locations were recorded of eroded areas on the North Anna-Gordonsville, North Anna-Midlothian, North Anna-Louisa and the North Anna-Ladysmith lines. Most of these eroded areas were caused by vehicle travel along the right of way. All areas were disced, fertilized, seeded, and mulched and additional straw bales were installed to prevent erosion.

Station Site Erosion Control

An on-site erosion control inspection was performed at North Anna Power Station by the Surveillance and Test Engineering Department beginning October 7, 1988 and ending on December 19, 1988, according to Periodic Test Procedure 1-PT-9.3, Erosion Control Inspection - Station Site. During the inspection, minor erosion was noticed east of the intake structure along the portion of the shoreline which is not reinforced with riprap. This erosion was probably only visible because the lake level was low during the October portion of the inspection. Minor erosion also existed on the drainage ditch on the west side of the boat ramp near the discharge canal, where drainage flows into the lake. Corrective action is not required for these areas at this time due to the minimal amount of erosion present.

The severely eroded area on the slope near the service water valve house, between the emergency dike and the service water dike, and reported in the 1987 Erosion Control Summary, has been filled and reinforced with riprap.

Minor erosion was observed from drainage on a slope east of the intake structure outside the security fence. The erosion is minimal and no corrective action is needed at this time.

Major construction is presently taking place in the Unit 3 and 4 area where the new rad waste facility is being constructed.

Noncompliances (Section 5.4.1)

There were no Environmental Protection Plan noncompliances reported during 1988.

Nonroutine Reports (Section 5.4.2)

Enclosed are copies of letters detailing the occurrence of four NPDES exceptions (pages 5-10), one oil spill (pages 11-12) and one unusual discharge (pages 13-14) which were filed during 1988 in which appropriate federal and state agencies were notified. None of the reported events resulted in a significant environmental impact causally related to station operation.

Hydroelectric Power Project

A study of fish passage from Lake Anna to the North Anna River was conducted during 1986, 1987 and 1988 to assess the need for intake screening at the North Anna Hydroelectric Facility.

Results indicated fish passage rates were very low, suggesting that turbine-induced mortality was minimal and that screening was unnecessary. Results and conclusions will be reviewed by the United States Fish and Wildlife Service.

September 30, 1988

Mr. William L. Kregloe
State Water Control Board
Valley Regional Office
116 North Main Street
P.O. Box 268
Bridgewater, VA 22812

Dear Mr. Kregloe:

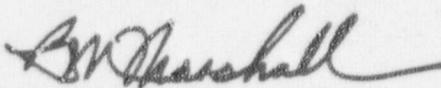
Re: **NPDES EXCEPTION AT NORTH ANNA POWER STATION**

This letter is submitted to report an exception to our NPDES permit limitation for pH at our North Anna Power Station sewage treatment plant. The exception was noted on Monday, September 26, 1988 and was subsequently reported to the Valley Regional Office (Ms. Bev Wilson).

The exception occurred when pH was field tested in the effluent at O11 in support of samples being taken for biomonitoring. The measured value was 5.94. We have no plausible explanation for the unusually low reading as the plant was not experiencing any operational problems at the time. The instrument used to measure the pH was not that used for routine NPDES sampling. Since the sample was taken when the regular operator was not on duty and the routine equipment unavailable, no comparative sample was run.

We assume this to be the result of analytical error and plan to eliminate the source of this error in the future.

Sincerely,



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

GRK:ro:1417

November 1, 1988

Mr. William L. Kregloe
State Water Control Board
Valley Regional Office
116 North Main Street
P.O. Box 268
Bridgewater, VA 22812

Dear Mr. Kregloe:

Re: **REPORT OF UNUSUAL DISCHARGE - NORTH ANNA POWER STATION**

As discussed with you on Friday afternoon, October 28, our efforts to clean up an underground spill of sulfuric acid cleaning solution continue. Though the acid cleaning has been discontinued, an acidic liquid is still being collected by the sump system and passed through a series of cation and cation/anion mixed bed resins to neutralize it. The processed liquid is then directed to the clarifier Outfall 003. At about 6:00 pm Friday a sample taken from the 003 discharge demonstrated a pH of 4.5, an exception to the limit set in our NPDES permit. The incident was reported to Ted Jett of the Valley Regional Office on Monday morning. This letter confirms those reports.

The liquid as collected demonstrated pH values in the range 5.0-5.5. However, when the pH of the liquid was checked after it had been processed through resin, it had fallen to 2.5 indicating that the anionic resin had been wasted either by the sulfuric acid or other chemicals in the liquid waste system. Ordinarily the cationic resin lowers the pH but the anionic resin restores it to a higher pH. By destroying the anionic resin the neutralization step of the process was lost.

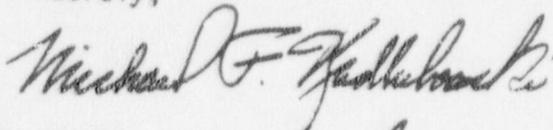
When the status of the resin was discovered all discharge of the material was stopped. It is estimated that the situation existed for approximately 15 minutes and that approximately 750 gallons were discharged. The resin beds were replaced and are now being monitored closely for any sign of deterioration.

The amount of liquid being collected and processed has decreased since last Wednesday when the leak was discovered. Influent is being collected by the liquid waste system or in drums and the pH is being monitored. All precautions are being taken to avoid additional discharge of liquid not meeting discharge limits for Outfall 003.

Mr. William L. Kregloe
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November 1, 1988

Outfall 003 discharges to the discharge tunnel and combines with the main condenser cooling water discharging to the canal. No adverse environmental impact was observed in the discharge canal as a result of this event. If you require further information about this incident, please contact my office.

Sincerely,



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

GRK:ro:1545

November 10, 1988

Mr. W. L. Kregloe
Virginia Water Control Board
Valley Regional Office
116 North Main Street
P.O. Box 268
Bridgewater, VA 22812

Re: **NPDES EXCEPTIONS AT THE CLARIFIER - NORTH ANNA POWER STATION**

Dear Mr. Kregloe:

Two exceptions to the pH limit set for the clarifier (Outfall 003) at North Anna Power Station have been reported to the Valley Regional Office by telephone on November 7 and 9, 1988. This letter confirms those reports and provides an update of information on the ongoing leak situation at the station.

As you know, a leak developed in the service water piping during a chemical cleaning procedure. It was not discovered until cleaning had been completed and the lines filled again with service water from the reservoir. Some acidic cleaning solution, which leaked while the cleaning procedure was in progress, surfaced in the basement of the auxiliary building and under Unit 1 containment. This has been processed and discharged by now. However, the leak continues and large amounts of service water are still being collected by the sump system and are being processed by the demineralizing system of the clarifier and discharged. As you might imagine, the large volume of raw service water percolating through the ground contains great numbers of contaminating ions and processing this material is putting tremendous strain on the mixed bed resins of the demineralizing system.

At 1930 hours on November 6, 1988 pH at the discharge from 003 was measured at 3.57. The resin had been depleted and could no longer adjust the pH properly. The resin beds were changed out and pH measured again at 2200 to show that the discharge was again within the limits of our permit. The pH was 6.0 at that time.

Again, at 1930 hours on November 8, 1988 the discharge from Outfall 003 was determined to be outside the limits of our permit. A pH of 10.7 was measured. The discharge was tested and found to be back in specification at 0200 hours. The discharge pH in both cases is being determined by which part of the mixed resin, the anion or cation portion, is being depleted first and that depends on the specific ions being removed.

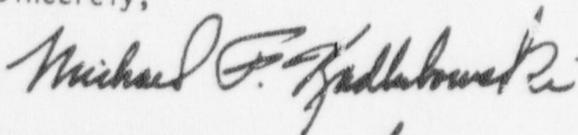
Mr. W. L. Kregloe
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Those ions vary with the course of the water underground and the different underground environment it passes through.

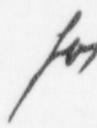
Stopping the leak is a very complex problem because of its location and because of safety considerations for the plant. Plans for determining the best way to correct the leak are underway. Meantime we will continue to monitor the discharge and exert control on pH. We are currently evaluating substitute resins that would not be depleted so rapidly in processing these large volumes.

We have not observed any adverse environmental impact as a result of these discharges but will continue to monitor the situation during this difficult period. You will be kept informed about the situation and if you have any questions please feel free to contact this office.

Sincerely,



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



GRK:ro:1584

August 29, 1988

Mr. William L. Kregloe
State Water Control Board
Valley Regional Office
116 North Main Street
P.O. Box 268
Bridgewater, Virginia 22812

Dear Mr. Kregloe:

Re: OIL SPILL AT NORTH ANNA POWER STATION

This letter is to confirm our report of an oil spill on Saturday, August 27, 1988. The spill was reported by telephone to the Valley Regional Office (Roberts) at 1122 hours.

The spill occurred at 0900 hours, August 27, 1988 as an operator attempted to dewater the oil/water separator. Over the past several weeks the separator has been operating at full capacity due to condensate from the steam chillers entering turbine building sumps. These chillers are only used in hot weather. As the operator initiated dewatering some 10-20 gal of oil were carried over, discharging to the discharge canal at Outfall 004. The operator immediately terminated dewatering and began cleanup.

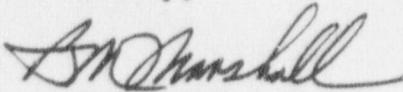
A permanent boom around Outfall 004 was adjusted to contain most of the oil and absorbent pads were used to soak up the oil from the water's surface. No oil escaped the boom permanently deployed at the end of the discharge canal. No oil was deposited on the shoreline and no adverse environmental impact was observed.

Operation of the steam chillers will be curtailed in the near future as the weather cools. This will reduce the volume of water entering the sump system and therefore lessen the risk of a reoccurrence of such a spill. Until then operators will exercise even more caution during the dewatering operation.

Mr. William L. Kregloe
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August 29, 1988

If you have any questions regarding the incident, please contact my office.

Sincerely,



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

GRK:ro:1328

cc: U.S. NRC
Docket No. 50-338/50-339
101 Marietta St., NW
Suite 2900
Atlanta, Georgia 30323

U.S. NRC
Attn: Docket Control Desk
Docket No. 50-338/50-339
Washington, DC 20555

NRC Senior Resident Inspector
Docket No. 50-338/50-339
North Anna Power Station

July 28, 1988

Mr. William L. Kregloe
State Water Control Board
Valley Regional Office
116 North Main Street
P.O. Box 268
Bridgewater, Virginia 22912

Dear Mr. Kregloe:

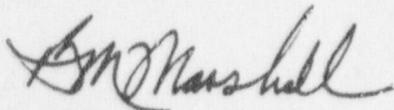
Re: **RELEASE OF WATER FROM THE BEARING COOLING SYSTEMS -
NORTH ANNA POWER STATION**

This letter is submitted to inform you of the emergency release on July 17, 1988, of an estimated 25,000 gallons of water from the bearing cooling tower to the discharge canal. The cooling tower was experiencing elevated temperatures due to the very hot summer temperatures which put facility operations at risk. Additional cooling was obtained by water exchange with water from Lake Anna.

At the time of this emergency release and water exchange the water in the cooling tower was being chemically treated. The water contained 0.95 ppm zinc and 16 ppm phosphate at time of discharge. A low concentration of the biocide H510 was also present. The pH of the discharge was 8.48.

The bearing cooling system is normally a closed system though some leakage is recognized and has previously been discussed with Water Board staff. We routinely inform you of any biocide treatment employed. This situation cannot be anticipated nor could it be avoided under the circumstances. However, knowledge about the system should indicate that little environmental impact would be expected and none was observed. If you have any questions regarding this submittal, please let me know.

Sincerely,



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

GRK:ro:1229

1351GRK1229

Mr. William L. Kregloe

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July 28, 1988

cc: Dr. J. Nelson Grace, USNRC Docket No. 50-338/50-339
Mr. Harold Denton, USNRC Docket No. 50-338/50-339
Mr. J. L. Caldwell, USNRC Docket No. 50-338/50-339

1351GRK1229

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

April 25, 1989

W. R. CARTWRIGHT
VICE PRESIDENT
NUCLEAR

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. 89-245
NAPS/JHL
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

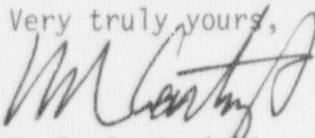
Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNITS 1 AND 2
ANNUAL ENVIRONMENTAL OPERATING REPORT

In accordance with the requirements of Section 5.4.1 of the North Anna 1 and 2 Environmental Technical Specifications, enclosed is the 1988 Annual Environmental Operating Report.

If you have any questions, please contact me.

Very truly yours,



W. R. Cartwright

Enclosure

cc: U. S. Nuclear Regulatory Commission
101 Marietta Street, N. W.
Suite 2900
Atlanta, Georgia 30323

Mr. J. L. Caldwell
NRC Senior Resident Inspector
North Anna Power Station

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