

Pamela F. Faggert  
Vice President and Chief Environmental Officer  
5000 Dominion Boulevard, Glen Allen, VA 23060  
Phone: 804-273-3467



September 29, 2000

Dr. Janardan R. Pandey, P.E.  
Valley Regional Office  
P.O. Box 3000  
Harrisonburg, Va. 22801-3000

50-338/339

**Re: Authorization - Public Notice**  
**VPDES Permit No. VA0052451 - North Anna Power Station**

Dear Dr. Pandey:

Please find enclosed the Public Notice Authorization Form as you requested. We understand that the public hearing has been scheduled for November 6 at 6:30 p.m. and will take place at the Louisa County Middle School. As you mentioned, the public notice is expected to appear in the Richmond Times Dispatch on October 4<sup>th</sup>.

Thank you for your assistance with this matter. If you have any questions or need to contact us prior to the hearing, please direct your call to Joyce Livingstone at (804) 273-2985.

Sincerely,

Pamela F. Faggert

Attachment

cc: (with attachment)

U.S. Nuclear Regulatory Commission  
Region II - Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23T85  
Atlanta, Georgia 30303  
RE: North Anna Units 1 & 2  
Docket Nos. 50-338/50-339  
License Nos. NPF-4/NPF-7

**U.S. Nuclear Regulatory**  
Commission  
Attention: Document Control Desk  
Washington, D.C. 20555  
RE: North Anna Units 1 & 2  
Docket Nos. 50-338/50-339  
License Nos. NPF-4/NPF-7

Mr. M. J. Morgan  
NRC Senior Resident Inspector  
North Anna Power Station

COO1

PUBLIC NOTICE AUTHORIZATION FORM

I hereby authorize the Department of Environmental Quality to have the cost of publishing a public notice billed to the agent identified below. The public notice will be published once a week for two consecutive weeks, seven days apart, in the **Richmond Times - Dispatch**.

Authorizing Agent - Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Agent/Department to be billed: \_\_\_\_\_

Agent/Department Address: \_\_\_\_\_

Permit No. VA0052451

**\*Attention Permittee:** Please complete the above information and return this form to Janardan R. Pandey, DEQ-Valley Regional Office, P. O. Box 3000, Harrisonburg, Virginia 22801. You may fax this form to (540) 574-7878.

September 27, 2000

Ms. Pamela F. Faggert  
Virginia Power  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060

Re: VPDES Permit No. VA0052451  
Virginia Power – North Anna

Dear Ms. Faggert:

The State Water Control Board is considering reissuance of the referenced permit. Please review the enclosed public notice and draft permit package carefully.

Certain public notice procedures must be complied with before the actual permit can be approved. As you are aware, the decision has been made to schedule a public hearing. The attached public notice must be published once a week for two consecutive weeks in a newspaper of general local circulation. Please complete, sign, and return the attached authorization form which will allow us to mail the notice to the newspaper and allow the newspaper to bill you for the public notice.

Please return the Public Notice Authorization so that we can continue processing your permit. If you have any questions or comments on the draft permit or public notice requirements, please contact me.

Sincerely,

Janardan R. Pandey, P.E.  
Environmental Engineer Senior

Enclosure: Draft Permit  
Draft Fact Sheet  
Public Notice  
Public Notice Authorization Form

## PUBLIC NOTICE

### REISSUANCE OF A VPDES PERMIT TO DISCHARGE TO STATE WATERS AND STATE CERTIFICATION UNDER THE STATE WATER CONTROL LAW, AND REVOCATION OF A 401 AND 21(b) CERTIFICATE

First Public Notice Issue Date: (to be supplied by newspaper)

The State Water Control Board has under consideration the reissuance of the following Permit and State Certificate:

Permit No.: VA0052451

Permittee Name and Address: Virginia Electric and Power Company, 5000 Dominion Blvd,  
Glen Allen, VA 23060

Facility Name and Location: Virginia Power-North Anna Nuclear Power Station, on Route 700  
near Mineral, Virginia

Discharge Description: Existing Industrial Discharge resulting from the operation of a nuclear  
power plant and domestic sewage treatment plant; Total Discharge Flow: 2708 MGD; Total  
Outfalls: 24 including 12 internal outfalls; Receiving Waters: Lake Anna and North Anna River;  
Stream Mile: 44.58; Basin: York; Subbasin: N/A; Section: 3; Class: III; Special Standards: None.

On the basis of preliminary review and application of lawful standards and regulations, the State Water Control Board proposes to reissue the permit subject to certain conditions. This proposed permit action is tentative and consists of limiting the following parameters: Outfall 001: pH 6.0 min, 9.0 max; Heat Rejected  $13.54 \times 10^9$  BTU/Hr. max; Total Residual Chlorine 0.2 mg/l max. Outfalls 103, 104, 109, 110, 112, 113, 013 and 014: pH 6.0 min, 9.0 max; Suspended Solids 100 mg/l max ; Oil & Grease 20 mg/l max. Outfall 105: pH 6.0 min, 9.0 max; Free Available Chlorine 0.5 mg/l max; The 126 priority pollutants contained in chemicals added for cooling water maintenance except Total Cr and Total Zn - non detectable; Total Cr 0.2 mg/l max; Total Zn 1.0 mg/l max. Outfall 107: Total Residual Chlorine 4.0 mg/l max; Outfall 108: pH 6.0 min, 9.0 max; Outfall 111: pH 6.0 min, 9.0 max; BOD<sub>5</sub> 45 mg/l max; Suspended Solids 45 mg/l max; Total Residual Chlorine 2.4 mg/l max. Outfall 009: pH 6.0 min, 9.0 max; Suspended Solids 100 mg/l max. Outfall 020: pH 6.0 min, 9.0 max; Suspended Solids 100 mg/l max; Total Residual Chlorine 4.0 mg/l max. The remaining Outfalls (114, 115, 016, 021 and 022 - 026) have no limitations. This permit will maintain the Water Quality Standards adopted by the Board.

Sludge from the sewage treatment plant with no radioactive contamination is pumped and hauled to Louisa County Water Authority facility. Liquid sludge containing radioactive material will be wasted to the drying beds and will be handled and disposed of under the regulatory control of the Nuclear Regulatory Commission at an out of state, licensed radioactive waste disposal facility.

The applicant has filed for an early screening request to obtain a thermal effluent limitation variance as allowed by Section 316(a) of the Clean Water Act.

The proposed permit also contains a lake level contingency plan. The intent of this plan is to allow specific reductions in the lake discharge flow when the lake water level drops below designated levels due to drought conditions, taking into account and minimizing any adverse effects of any release reduction requirements on downstream users.

Concurrent with the reissuance of this VPDES permit, the 401 Certificate issued by the Board on August 29, 1973 and the 21(b) Certificate as amended on February 11, 1972 will be revoked. The only currently operative conditions of these certificates are duplicative of the minimum instream flow condition in the existing VPDES permit.

The State Water Control Board will hold a public hearing to receive comments on the proposed reissuance. The hearing will be held at 7.00 p.m. on November 6, 2000 at the Louisa County Middle School, located at 1009 Davis Highway in Louisa County. In addition, the Department of Environmental Quality's staff will conduct an informational briefing on this reissuance at 6.30 p.m. The public is invited to hear a brief explanation of the permit and questions are welcomed. This informal, fact-finding proceeding is being held pursuant to Section 9-6.14:11 of the Code of Virginia, 9 VAC 25-32-140 et seq.

The hearing is to be held at a public facility believed to be accessible to persons with disabilities. Any person with questions on the accessibility should contact Janardan R. Pandey at the address below or by email or telephone. Interpreter services for the deaf will be provided, if requested. Persons needing interpreter services for the deaf must notify Janardan R. Pandey no later than October 20, 2000.

Anyone wishing to speak at the hearing may do so, subject to any limitations imposed by the Hearing Officer. Anyone wishing to submit written comments for the file may do so at the hearing or by mail or by email. Comments must be received by 4 p.m., November 21, 2000, at which time the file will close. Written comments should include the name, address, and telephone number of the presenter and a complete, concise statement of the factual basis for the comments. The comments should be addressed to Janardan R. Pandey at the address below.

More specific information on the proposed reissuance, including the fact sheet, draft permit, and other documents, is available for inspection or copying by contacting Janardan R. Pandey at the Virginia Department of Environmental Quality, Valley Regional Office, 4411 Early Road, P.O. Box 3000, Harrisonburg, Virginia 22801, Telephone No. (540)574-7817 or by email at [jrpandey@deq.state.va.us](mailto:jrpandey@deq.state.va.us).

Pamela F. Faggert  
Vice President and Chief Environmental Officer  
5000 Dominion Boulevard, Glen Allen, VA 23060  
Phone: 804-273-3467



**Certified Mail**  
**Return Receipt Requested**

September 29, 2000

Dr. Janardan R. Pandey, P.E.  
Valley Regional Office  
P.O. Box 3000  
Harrisonburg, Va. 22801-3000

**Re: Additional Information - Application for Reissuance  
VPDES Permit No. VA0052451 - North Anna Power Station**

Dear Dr. Pandey:

The following additional information was previously sent to you by email (with the exception of Item #8) and is now being formally submitted for your files as part of our VPDES reissuance application for North Anna Power Station:

1. The original revised VPDES Sewage Sludge Permit Application Form, signed by D. A. Heacock, Site Vice President on 7/10/2000 (attachment).
2. With a normal intake velocity of 2 million gallons per minute, the discharge from all of these outfalls would normally be entrained by the station and discharged via the discharge canal and lagoon system back into the Lake.

Lake Outfall #	Approx. distance from intake structure
009	200 ft.
013	25 feet
014	50 feet
016	5 feet
020	25 feet
021	25 feet

3. The Material Safety Data Sheets for chemicals that are routinely used or proposed for use within the next five years were sent to you by fax on July 21, 2000. A list of routinely used chemicals appears in the original permit application dated March 31, 2000.
4. A letter from Pamela Faggert dated July 17, 2000 was sent to you with a revised report of chemical analyses for copper at Outfall 001 (attached).

Dr. Janardan R. Pandey, P.E.

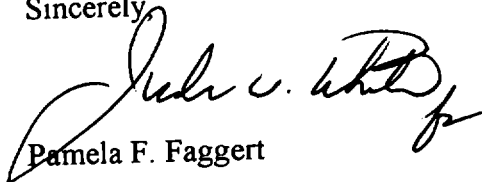
September 29, 2000

Page 2 of 3

5. The Lake Level Contingency Plan and the North Anna River Monitoring Plan have been revised as agreed upon by the appropriate stakeholders and resource agencies (attached).
6. Per Special Condition D.1.f., annual testing is to occur and is predicated upon the completion of prior quarterly testing. This reference to quarterly testing in D.1.f is incorrect. Quarterly testing is required only if the re-test fails (D.1.b.1). The requirement for annual testing assumes the re-test has passed (D.1.b.2), in which case quarterly testing is never required. Item D.1.f should read "Following completion of a successful re-test of Outfall 001 as per condition D.1.b.2., etc."
7. Page 34 of 52, Storm Water Management - Semiannual stormwater monitoring must occur in the second and fourth years of the permit. The two semiannual sampling windows specified are January - June and July - December. If the permit is issued in October as expected, the first window is effectively reduced by several months. This could be a problem given the qualifying event criteria.
8. The legend for the VPDES Outfall Location Map was revised for outfalls 013, 014 and 104.

If you have any questions concerning this application, please direct your call to Joyce Livingstone at (804) 273-2985.

Sincerely,



Pamela F. Faggert

cc: (with attachments)  
U.S. Nuclear Regulatory Commission  
Region II - Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23T85  
Atlanta, Georgia 30303  
RE: North Anna Units 1 & 2  
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Mr. M. J. Morgan  
NRC Senior Resident Inspector  
North Anna Power Station

**VPDES Sewage Sludge Permit  
Application Form**



## VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

## SCREENING INFORMATION

This application is divided into sections. Sections A and E pertain to all applicants. The applicability of Sections B, C and D depend on your facility's sewage sludge use or disposal practices. The information provided on this page will indicate which sections to fill out.

1. All applicants must **complete Section A (General Information)**.

2. Does this facility generate sewage sludge? ☒ Yes ☐ No

Does this facility derive a material from sewage sludge? ☐ Yes ☒ No

If you answered Yes to either, **complete Section B (Generation Of Sewage Sludge Or Preparation Of A Material Derived From Sewage Sludge)**.

3. Does this facility apply sewage sludge to the land? ☐ Yes ☒ No

Is sewage sludge from this facility applied to the land? ☒ Yes ☐ No

If you answered Yes to either, answer the following three questions:

a. Does the sewage sludge from this facility meet the pollutant concentrations, Class A pathogen reduction requirements and one of the vector attraction reduction requirements 1-8, as identified in the instructions?  
☐ Yes ☒ No

b. Is sewage sludge from this facility placed in a bag or other container for sale or give-away?  
☐ Yes ☒ No

c. Is sewage sludge from this facility sent to another facility for treatment (including blending) or placement in a bag or other container for sale or give-away? ☒ Yes ☐ No

If you answered No to all three, **complete Section C (Land Application Of Bulk Sewage Sludge)**.

If you answered Yes to a, b or c, skip Section C.

4. Do you own or operate a surface disposal site? ☐ Yes ☒ No

If Yes, **complete Section D (Surface Disposal)**.

5. **All applicants must complete Section E (Certification).**

## SECTION A. GENERAL INFORMATION

All applicants must complete this section.

1. Facility Identification.
  - a. Name of facility: Virginia Power – North Anna Power Station
  - b. Facility contact: Name: Pamela F. Faggert  
Title: Vice President and Chief Environmental Officer  
Phone: ( 804 ) 273-3467
  - c. Facility mailing address:  
Street or P.O. Box: 5000 Dominion Boulevard  
City or Town: Glen Allen State: Virginia Zip: 23060
  - d. Facility location:  
Street or Route #: 1022 Haley Drive  
County: Louisa  
City or Town: Mineral State: Virginia Zip: 23117
  - e. Facility latitude: 39 03 47 Facility longitude: 77 46 56
  - f. Is this facility a Class I sludge management facility? Yes ☒ No If yes, submit the results of a toxicity characteristic leaching procedure (TCLP) performed on this facility's sewage sludge. Submit the results of all TCLPs performed during the last five years, if not previously submitted. **Sample Date 4/22/96**
  - g. Facility design influent flow rate: 30,000 gpd mgd
  - h. Total population served:
  - i. Indicate the type of facility:  
☐ Publicly owned treatment works (POTW)  
☒ Privately owned treatment works  
☐ Federally owned treatment works  
☐ Blending or treatment operation  
☐ Surface disposal site  
☐ Other explain:
2. Permit Information.
  - a. Facility's VPDES permit number (if applicable): VA0052451
  - b. List below all other federal, state or local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_  
N/A Sludge Disposal Plan for the North Anna Power Station STP, Louisa  
County approved by DEQ on 6/10/96, revised by letter dated 10/20/97
3. Owner/Operator Information.
  - a. Are you the owner of this facility? ☒ Yes ☐ No If no, provide the owner's:  
Name: \_\_\_\_\_  
Street or P.O. Box: \_\_\_\_\_  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: ( ) \_\_\_\_\_
  - b. Are you the operator of this facility? ☒ Yes ☐ No If no, provide the operator's:  
Name: \_\_\_\_\_  
Street or P.O. Box: \_\_\_\_\_  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: ( ) \_\_\_\_\_
4. Indian Lands. Does any generation, treatment, storage, application to land or disposal of sewage sludge from this facility occur on Indian lands? ☐ Yes ☒ No If yes, describe:

5. **Topographic Map.** Provide a topographic map or maps (or other appropriate maps if a topographic map is unavailable) that shows the following items of information. Maps should include the area one mile beyond all property boundaries of the facility:
- Location of all sewage sludge management facilities, including locations where sewage sludge is generated, treated, land applied or disposed.
  - Location of all water bodies within one mile beyond the facility's property boundaries.
  - Location of all wells used for drinking water listed in public records or otherwise known to the applicant within 1/4 mile of the property boundaries. **See VPDES Outfall Location Map**
6. **Line Drawing.** Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction. **The line drawing is attached to this application form.**
7. Contractor Information. Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor?  
☒ Yes ☐ No **HOLDING TANK, LIQUID SLUDGE**  
 If yes, provide the following for each contractor (attach additional pages if needed).  
 Name: Hauler - Stamie E. Lyttle Co., Inc. (Buck Accashian - Mgr Service Dept)  
 Street or P.O. Box: 2210 Belt Blvd., at Hopkins Rd. P. O. Box 24205  
 City or Town: Richmond State: VA Zip: 23224  
 Phone: (804) 232-6774  
 Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge:  
VDH (Chesterfield Co.) Permit # 96-120-0001H  
 If the contractor is responsible for the use and/or disposal of the sewage sludge, provide a legible copy(s) of the contract or a description of the service to be provided to the applicant and the respective obligations of the applicant and the contractor(s). N/A  
 Provide a legible copy of any leasing agreements related to treatment and storage facilities not under direct ownership of the applicant, which identifies the parties involved. N/A
8. Pollutant Concentrations. Using the table below or a separate attachment, provide existing data on the pollutant concentrations in sewage sludge from this facility. Provide all data for the last two years. If data from the last two years are unavailable, provide the most recent data. **This data from 4/30/96 is still representative.**

POLLUTANT	CONCENTRATION (mg/kg dry weight)	SAMPLE TYPE	SAMPLE DATE	DETECTION LEVEL FOR ANALYSIS
Arsenic	<0.010	Grab	4/30/96	0.010
Cadmium	<0.05	Grab	4/30/96	0.05
Copper				
Lead	<0.65	Grab	4/30/96	0.65
Mercury	<0.001	Grab	4/30/96	0.001
Molybdenum				
Nickel				
Selenium	<0.010	Grab	4/30/96	0.010
Zinc				
Barium	<0.20	Grab	4/30/96	0.20
Chromium	<0.15	Grab	4/30/96	0.15
Silver	<0.0004	Grab	4/30/96	0.0004

SECTION B. GENERATION OF SEWAGE SLUDGE OR PREPARATION  
OF A MATERIAL DERIVED FROM SEWAGE SLUDGE

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge

1. Total dry metric tons of sewage sludge generated at your facility per 365-day period: <1 tons
2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use or disposal, provide the following information for each facility from which sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as needed. **N/A**
  - a. Name of facility:
  - b. Facility contact:  
Phone ( )
  - c. Mailing address:  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
  - d. Facility location:  
(not P.O. Box)
  - e. Total dry metric tons per 365-day period received from this facility: \_\_\_\_\_ tons
  - f. Describe on this form or on another sheet of paper any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics:
3. Treatment Provided at Your Facility.
  - a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?  
\_\_\_ Class A \_\_\_ Class B **X** Neither or unknown
  - b. Describe on this form or another sheet of paper any treatment processes used at your facility to reduce pathogens in sewage sludge: **Drying beds, only for low-level rad waste → dry sludge incinerated off-site**
  - c. Which vector attraction reduction option is met for the sewage sludge at your facility?  
\_\_\_ Option 1 (Minimum 38 percent reduction in volatile solids)  
\_\_\_ Option 2 (Anaerobic process, with bench-scale demonstration)  
\_\_\_ Option 3 (Aerobic process, with bench-scale demonstration)  
\_\_\_ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)  
\_\_\_ Option 5 (Aerobic processes plus raised temperature)  
\_\_\_ Option 6 (Raise pH to 12 and retain at 11.5)  
\_\_\_ Option 7 (75 percent solids with no unstabilized solids)  
\_\_\_ Option 8 (90 percent solids with unstabilized solids)  
**X** None or unknown
  - d. Describe on this form or another sheet of paper any treatment processes used at your facility to reduce vector attraction properties of sewage sludge: **None**
  - e. Describe on this form or another sheet of paper any other sewage sludge treatment activities, including blending, not identified in a - d above: **None**
4. Preparation of Sewage Sludge Meeting Pollutant Concentrations, Class A Pathogen Requirements and One of Vector Attraction Reduction Options 1-8. **N/A**  
(If sewage sludge from your facility does not meet all of these criteria, skip Question 4.)
  - a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land:  
tons
  - b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away?  
\_\_\_ Yes \_\_\_ No
5. Sale or Give-Away in a Bag or Other Container. **N/A**  
(Complete this question if you place sewage sludge in a bag or other container for sale or give-away prior to land application. Skip this question if sewage sludge is covered in Question 4.)
  - a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away: \_\_\_\_\_ tons
  - b. Attach to this form a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container.

## 6. Shipment Off Site for Treatment or for Sale or Give-Away.

(Complete this question if sewage sludge from your facility is sent to another facility that provides treatment or that places the sewage sludge in a bag or other container for sale or give-away. This question does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this question if the sewage sludge is covered in Questions 4 or 5. If you send sewage sludge to more than one facility, attach additional sheets as needed.)

- a. Name of receiving facility: Louisa County Water Authority - Non-Rad. Sludge Only  
b. Facility contact: Name: H. Barlow Delk Title: General Manager Phone: (540) 967-1122  
Name: David Jones Title: Plant Operator Phone: (540) 967-0696  
Street or P.O. Box: P. O. Box 9 City or Town: Louisa State: VA Zip: 23093

- c. Total dry metric tons per 365-day period of sewage sludge sent to receiving facility: <1 tons

**Sludge is in concentrated liquid form**

- d. List on this form or an attachment the receiving facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the receiving facility's sewage sludge use or disposal practices:

Permit Number:  
VA0067954

Type of Permit:  
VPDES (Includes approved Sludge Disposal Plan)

- e. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility? X Yes      No

Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?

     Class A      X Class B      None or unknown

Describe on this form or another sheet of paper any treatment processes used at the receiving facility to reduce pathogens in sewage sludge: Sludge → aerobic digester → blending with all sludge, aeration → into second digester, aeration → dewatering → land application disposal according to approved sludge disposal plan

- f. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge? X Yes      No

Which vector attraction reduction option is met for the sewage sludge at the receiving facility?

- X Option 1 (Minimum 38 percent reduction in volatile solids)  
     Option 2 (Anaerobic process, with bench-scale demonstration)  
     Option 3 (Aerobic process, with bench-scale demonstration)  
     Option 4 (Specific oxygen uptake rate for aerobically digested sludge)  
     Option 5 (Aerobic processes plus raised temperature)  
     Option 6 (Raise pH to 12 and retain at 11.5)  
     Option 7 (75 percent solids with no unstabilized solids)  
     Option 8 (90 percent solids with unstabilized solids)  
     None or unknown

Describe on this form or another sheet of paper any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge: N/A

- g. Does the receiving facility provide any additional treatment (including blending) not identified in e or f above?      Yes X No

If yes, describe on this form or another sheet of paper the treatment processes not identified in e or f above:

- h. If you answered yes to e, f or g above, attach a copy of any information you provide to the receiving facility to comply with the "notice and necessary information" requirement of 9 VAC 25-31-530. **Attachment**

- i. Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away?      Yes X No If yes, provide a copy of all labels or notices that accompany the product being sold or given away.



LOUISA COUNTY WATER AUTHORITY

P.O. BOX 9

3380 JEFFERSON HIGHWAY

LOUISA, VIRGINIA 23093

PHONE: (540) 967-1122

FAX: (540) 967-0656

LOUISA REGIONAL SEWAGE TREATMENT PLANT  
TRUCK HAULED WASTE MANIFEST

DATE: \_\_\_\_\_

MANIFEST #: \_\_\_\_\_ (Obtained from the Louisa County Water Authority  
office 967-1122)

THIS SECTION TO BE COMPLETED BY THE WASTE HAULER (PERMITTEE)

CUSTOMER INFORMATION:

(1) Time: \_\_\_\_\_ (2) Time: \_\_\_\_\_  
Name: \_\_\_\_\_ Name: \_\_\_\_\_  
Address: \_\_\_\_\_ Address: \_\_\_\_\_  
Telephone number: \_\_\_\_\_ Telephone number: \_\_\_\_\_  
County of Origin: \_\_\_\_\_ County of Origin: \_\_\_\_\_

HAULER INFORMATION:

Name of Company: \_\_\_\_\_  
Discharge Permit #: \_\_\_\_\_  
Truck license number: \_\_\_\_\_  
Name of the Driver (Print): \_\_\_\_\_  
Truck Waste Information: (Check all that apply)  
Domestic septage from a residential source ☐ PH \_\_\_\_\_ (Must be between  
Domestic septage from a commercial source ☐ 6.0 - 9.0 standard units.)  
Other waste with prior approval ☐ Describe: \_\_\_\_\_  
\* Activated Sludge From Restrooms, Sinks  
Gallons Discharged: \_\_\_\_\_

Certification:

I hereby certify to the best of my knowledge that the contents of this truck contain no hazardous waste and was obtained from the source specified above. I am aware that submitting false information may result in termination of my privilege to dispose of trucked waste at the Louisa facility.

\_\_\_\_\_  
Signature of the Hauler

THIS SECTION TO BE COMPLETED BY COUNTY PERSONNEL

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Signature of Attendant  
Visual inspection/comments: \_\_\_\_\_  
Sample collected: YES ☐ NO ☐ Sample I.D. #: \_\_\_\_\_  
Laboratory sent to: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Verified origin of material with generator: YES ☐ NO ☐

OPERATING HOURS 8:00 A.M. TO 3:00 P.M., MONDAY - FRIDAY,  
EXCEPT HOLIDAYS OR WHEN THE COUNTY IS CLOSED

July 11, 2000

Mr. H. Barlow Delk  
Louisa County Water Authority  
P.O. Box 9  
Louisa, VA 23093

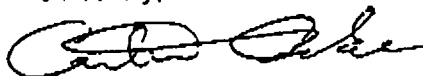
Re: VPDES Permit Application for Louisa County  
Permit No. VA0052451

Dear Mr. Delk :

This is written concerning ultimate disposal of sludge generated at North Anna Power Station STP. Please be aware of the sludge management requirements of the VPDES Permit Regulation, Section 9 VAC 25-31-510, Subpart B, Land Application. Sludge received from North Anna Power Station STP must be managed in accordance with applicable regulatory requirements.

Please call me at (540) 894-2856 if you have any questions.

Sincerely,



Carter Cooke  
Environmental Compliance Coordinator  
North Anna Power Station  
P.O. Box 402  
Mineral, VA 23117

cc: File

7. Land Application of Bulk Sewage Sludge. N/A

(Complete Question 7.a if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in Questions 4, 5 or 6; complete Question 7.b & c only if you are responsible for land application of sewage sludge.)

- a. Total dry metric tons per 365-day period of sewage sludge applied to land application sites: \_\_\_\_\_ tons
- b. Do you identify all land application sites in Section C of this application? Yes No  
If no, submit a copy of the land application plan with this application (see instructions).
- c. Are any land application sites located in states other than Virginia? Yes No  
If yes, describe on this form or on another sheet of paper how you notify the permitting authority for the states where the land application sites are located. Provide a copy of the notification.

8. Surface Disposal. N/A

(Complete Question 8 if sewage sludge from your facility is placed on a surface disposal site.)

- a. Total dry metric tons per 365-day period of sewage sludge from your facility placed on all surface disposal sites: \_\_\_\_\_ tons
- b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?  
Yes No If no, answer questions c - h for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one surface disposal site, attach additional pages as needed.
- c. Site name or number: \_\_\_\_\_
- d. Site contact: Name: \_\_\_\_\_ Title: \_\_\_\_\_ Phone: ( ) \_\_\_\_\_  
Contact is: Site Owner Site operator
- e. Site mailing address. Street or P.O. Box: \_\_\_\_\_ City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- f. Site location. Street or Route #: \_\_\_\_\_ County: \_\_\_\_\_ City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- g. Total dry metric tons per 365-day period of sewage sludge from your facility placed on this surface disposal site: \_\_\_\_\_ tons
- h. List on this form or an attachment the surface disposal site VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the sewage sludge use or disposal practices at the surface disposal site:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_

9.(I) Incineration. (Vitrification Unit - waste is burned waste → final product is molten glass)

(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

- a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: <1 tons **Low Level Rad-Waste Only - regulated by NRC**
- b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?  
Yes X No If no, answer questions c - h for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as needed.
- c. Incinerator name or number: Allied Technology Group – Low Level Rad-Waste Only
- d. Incinerator contact: Sherry Fleming Title: Service Representative Phone: 865-425-5037  
Contact is: X Incinerator Owner X Incinerator Operator
- e. Incinerator mailing address. Street or P.O. Box: 2025 Battelle Boulevard  
City or Town: Richland State: Washington Zip: 99352
- f. Incinerator location. Same as mailing address
- g. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: <1 tons **Low Level Rad-Waste Only - regulated by NRC**
- h. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing of sewage sludge at this incinerator:  
Permit Number: WN-I0393-1 Type of Permit: Radioactive Materials License  
NOC 960322 Clean Air Authority Permit  
00-101294 Dept. of Health Operating Permit  
G1043 and B102 Dept. of Ecology Site Use Permit  
BQ0630 Chemical Waste Management  
062295007026D Dept. of Transportation Permit



## 9.(II) Incineration.

(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: <1 tons **Low Level Rad-Waste Only - regulated by NRC**b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?  
     Yes   X   No If no, answer questions c - h for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as needed.c. Incinerator name or number: GTS - Low Level Rad-Waste Onlyd. Incinerator contact: Laura Williams Title: Service Representative Phone: 865-220-1613  
Contact is:   X   Incinerator Owner   X   Incinerator Operatore. Incinerator mailing address. Street or P.O. Box: 1560 Bear Creek Road, PO Box 2530  
City or Town: Oak Ridge State: Tennessee Zip: 37830f. Incinerator location. Same as mailing address  
Street or Route #: \_\_\_\_\_ County: \_\_\_\_\_ City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_g. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: <1 tons **Low Level Rad-Waste Only - regulated by NRC**h. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing of sewage sludge at this incinerator:  

<u>Permit Number:</u>	<u>Type of Permit:</u>
448314P	Conditional Major Operating Permit (TN Division of Air Pollution Control)
TNR001628	NPDES Permit for Storm Water Discharges Associated w/Industrial Activity
R-73013-F91	Radioactive Material License
TND 98-215-7570	Hazardous waste generator
071299 851 014H	Hazardous Materials Certification of Registration (DOT)
TN-8004	Tracking System Permit (Illinois Dept of Nuclear Safety)
T-TN012-L97	Radioactive Waste Delivery License

10. Disposal in a Municipal Solid Waste Landfill. N/A

(Complete Question 10 if sewage sludge from your facility is placed on a municipal solid waste landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as needed.)

a. Landfill name: \_\_\_\_\_

b. Landfill contact: Name: \_\_\_\_\_ Title: \_\_\_\_\_ Phone: ( ) \_\_\_\_\_ Contact is:      Landfill Owner      Landfill Operator

c. Landfill mailing address. Street or P.O. Box: \_\_\_\_\_ City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

d. Landfill location. Street or Route #: \_\_\_\_\_ County: \_\_\_\_\_ City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

e. Total dry metric tons per 365-day period of sewage sludge placed in this municipal solid waste landfill: \_\_\_\_\_ tons

f. List on this form or an attachment the numbers of all federal, state or local permits that regulate the operation of this municipal solid waste landfill:

<u>Permit Number:</u>	<u>Type of Permit:</u>
-----------------------	------------------------

g. Does sewage sludge meet applicable requirements in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq., concerning the quality of materials disposed in a municipal solid waste landfill?  
Yes      No   X  h. Does the municipal solid waste landfill comply with all applicable criteria set forth in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq.?      Yes      No   X

## SECTION C. LAND APPLICATION OF BULK SEWAGE SLUDGE N/A

Complete this section for sewage sludge that is land applied unless any of the following conditions apply:

The sewage sludge meets the Table 3 pollutant concentrations, Class A pathogen requirements and one of the vector attraction reduction options 1-8 (fill out B.4 instead); or

The sewage sludge is sold or given away in a bag or other container (fill out B.5 instead); or

You provide the sewage sludge to another facility for treatment or placement in a bag or other container (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in B.7 is land applied.

## 1. Identification of Land Application Site.

a. Site name or number:

b. Site location

i. Street or Route#:

County:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

ii. Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

## 2. Owner Information.

a. Are you the owner of this land application site? ☐ Yes ☐ No

b. If no, provide the following information for the owner:

Name:

Street or P.O. Box:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

## 3. Applier Information:

a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site? ☐ Yes ☐ No

b. If no, provide the following information for the person who applies the sludge:

Name:

Street or P.O. Box:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

c. List on this form or an attachment the numbers of all federal, state or local permits that regulate the person who applies sludge to this land application site:

Permit Number:Type of Permit:\_\_\_\_\_  
\_\_\_\_\_

## 4. Site Type. Identify the type of land application site from among the following:

☐ Agricultural land☐ Reclamation site☐ Forest☐ Public contact site☐ Other, specify

## 5. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes ☐ No ☐ If yes, answer a and b.

a. Indicate which vector attraction reduction option is met:

☐ Option 9 (Injection below land surface)☐ Option 10 (Incorporation into soil within 6 hours)

b. Describe on this form or on another sheet of paper any treatment processes used at the land application site to reduce the vector attraction properties of sewage sludge:

6. Ground Water Monitoring.  
Are any ground water monitoring data available for this land application site? ☐ Yes ☐ No  
If yes, submit the ground water monitoring data with this permit application. Also submit a written description of the well locations, approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.
7. Cumulative Loadings and Remaining Allotments.  
(Complete Question 7 only if the sewage sludge applied to this site since July 20, 1993 is subject to the cumulative pollutant loading rates (CPLRs) - see instructions.)
- a. Have you contacted DEQ or the permitting authority in the state where the sewage sludge subject to the CPLRs will be applied to ascertain whether bulk sewage sludge subject to the CPLRs has been applied to this site since July 20, 1993? ☐ Yes ☐ No  
If no, sewage sludge subject to the CPLRs may not be applied to this site.  
If yes, provide the following information:  
Name of permitting authority:  
Contact person:  
Phone: (    )
- b. Based upon this inquiry, has bulk sewage sludge subject to the CPLRs been applied to this site since July 20, 1993? ☐ Yes ☐ No If no, skip the rest of Question 7. If yes, answer questions c - g.
- c. Site size, in hectares: \_\_\_\_\_ (one hectare = 2.471 acres)
- d. Dry metric tons of sewage sludge per hectare from your facility applied to this site per 365-day period: \_\_\_\_\_ tons
- e. Total dry metric tons of sewage sludge from your facility applied to this site over the life of the site: \_\_\_\_\_ tons
- f. Provide the following information for every facility other than yours that is sending or has sent sewage sludge subject to the CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as needed.  
Name of facility:  
Facility contact: Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Phone: (    ) \_\_\_\_\_  
Facility mailing address.  
Street or P.O. Box: \_\_\_\_\_  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- g. Provide the total loading and allotment remaining, in kg/hectare, for each of the following pollutants:
- |          | <u>Cumulative loading</u> | <u>Allotment remaining</u> |
|----------|---------------------------|----------------------------|
| Arsenic  | _____                     | _____                      |
| Cadmium  | _____                     | _____                      |
| Copper   | _____                     | _____                      |
| Lead     | _____                     | _____                      |
| Mercury  | _____                     | _____                      |
| Nickel   | _____                     | _____                      |
| Selenium | _____                     | _____                      |
| Zinc     | _____                     | _____                      |

Complete Questions 8-12 below only if you apply sewage sludge, or you are responsible for land application of sewage sludge. Information required by these questions may be prepared as attachments to this form. Skip the following questions if you contract land application to someone else (as indicated under Section A.7) who is responsible for the operation.

8. Sludge Characterization. Use the table below or a separate attachment, provide at least one analysis for each parameter.

PCBs (mg/kg)  
pH (S. U.)  
Percent Solids (%)

Ammonium Nitrogen (mg/kg)  
Nitrate Nitrogen (mg/kg)  
Total Kjeldahl Nitrogen (mg/kg)  
Total Phosphorus (mg/kg)  
Total Potassium (mg/kg)  
Alkalinity as  $\text{CaCO}_3$  (mg/kg)

\* Lime treated sludge (10% or more lime by dry weight) should be analyzed for percent  $\text{CaCO}_3$ .

9. Storage Requirements.

Existing and proposed sludge storage facilities must provide an estimated annual sludge balance on a monthly basis incorporating such factors as storage capacity, sludge production and land application schedule. Include pertinent calculations justifying storage requirements.

Proposed sludge storage facilities must also provide the following information:

- a. A sludge storage site layout on a 7.5 minute topographic quadrangle or other appropriate scaled map to show the following topographic features of the surrounding landscape to a distance of 0.25 mile. Clearly mark the property line.
  - 1) Water wells, abandoned or operating
  - 2) Surface waters
  - 3) Springs
  - 4) Public water supply(s)
  - 5) Sinkholes
  - 6) Underground and/or surface mines
  - 7) Mine pool (or other) surface water discharge points
  - 8) Mining spoil piles and mine dumps
  - 9) Quarry(s)
  - 10) Sand and gravel pits
  - 11) Gas and oil wells
  - 12) Diversion ditch(s)
  - 13) Agricultural drainage ditch(s)
  - 14) Occupied dwellings, including industrial and commercial establishments
  - 15) Landfills or dumps
  - 16) Other unlined impoundments
  - 17) Septic tanks and drainfields
  - 18) Injection wells
  - 19) Rock outcrops
- b. A topographic map of sufficient detail to clearly show the following information:
  - 1) Maximum and minimum percent slopes
  - 2) Depressions on the site that may collect water
  - 3) Drainageways that may attribute to rainfall run-on to or runoff from this site
  - 4) Portions of the site (if any) which are located with the 100-year floodplain and how the storage facility will be protected from flooding
- c. Data and specifications for the storage facility lining material.
- d. Plan and cross-sectional views of the storage facility.
- e. Depth from the bottom of the storage facility to the seasonal high water table and separation distance to the permanent water table.

10. Land Area Requirements. Provide calculations justifying the land area requirements for land application of sewage sludge taking into consideration average soil productivity group, crop(s) to be grown and most limiting factor(s) of the sewage sludge, specifically Plant Available Nitrogen (PAN), Calcium Carbonate Equivalence (CCE), and metal loadings (CPLR sewage sludge only), where applicable. Relate PAN, CCE, and metal loadings to demonstrate the most limiting factor for land application.

11. Landowner Agreement Forms. Provide a properly completed Sludge Application Agreement Form (attached) for each landowner if sewage sludge is to be applied onto land not owned by the applicant.

## 12. Land Application Site Information.

(Complete Items a-d for sites receiving infrequent application - land application of sewage sludge up to the agronomic rate at a frequency of once in a 3 year period; complete Items a-h for sites receiving frequent application - land application of sewage sludge in excess of 70 % the agronomic rate at a frequency greater than once in a 3 year period)

- a. Provide a general location map for each county which clearly indicates the location of all the land application sites.
- b. For each land application site provide a site plan of sufficient detail to clearly show the concerned landscape features and associated buffer zones (See instructions). Provide a legend for each landscape feature and the net acreage for each field taking into account the proposed buffer zones.
- c. In order to ensure that land application of bulk sewage sludge will not impact federally listed threatened or endangered species or federally designated critical habitat, the applicant must notify the field office of the U. S. Department of the Interior, Fish and Wildlife Service (FWS), by a letter, the proposed land application activities with the identification of the land application sites. The address and phone number of FWS are provided below.

U. S. Fish and Wildlife Service  
Virginia Field Office  
P. O. Box 480  
White Marsh, VA 23183  
TEL: (804)693-6694

Provide a copy of the notification letter with this application form.

- d. Provide a soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)  
Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.
  - 1) Soil symbol
  - 2) Soil series, textural phase and slope range
  - 3) Depth to seasonal high water table
  - 4) Depth to bedrock
  - 5) Estimated soil productivity group (for the proposed crop rotation)

**Items e - h are required for sites receiving frequent application of sewage sludge**

- e. In order to verify the information provided in item d, characterize the soil at each land application site. Representative soil borings or test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:
  - 1). Soil symbol
  - 2). Soil series, textural phase and slope range
  - 3). Depth to seasonal high water table
  - 4). Depth to bedrock
  - 5). Estimated soil productivity group (for the proposed crop rotation)

- f. Collect and analyze soil samples from each field, weighted to best represent each of the soil borings performed for Item e. Using the table below or a separate attachment, provide at least one analysis per sample for each of the following parameters.

Soil Organic Matter (%)  
Soil pH (std. units)  
Cation Exchange Capacity (meq/100g)  
Total Nitrogen (ppm)  
Organic Nitrogen (ppm)  
Ammonia Nitrogen (ppm)  
Nitrate Nitrogen (ppm)  
Available Phosphorus (ppm)  
Exchangeable Potassium (mg/100g)  
Exchangeable Sodium (mg/100g)  
Exchangeable Calcium (mg/100g)  
Exchangeable Magnesium (mg/100g)  
Arsenic (ppm)  
Cadmium (ppm)  
Copper (ppm)  
Lead (ppm)  
Mercury (ppm)  
Molybdenum (ppm)  
Nickel (ppm)  
Selenium (ppm)  
Zinc (ppm)  
Manganese (ppm)  
Particle Size Analysis or  
USDA Textural Estimate (%)

- g. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from sludge and chemical fertilizers. Describe any specialized agronomic management practices which may be required as a result of high soil pH. If the sludge is expected to possess an unusually high CCE or other unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.
- h. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, soil testing and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

## SLUDGE APPLICATION AGREEMENT

This sludge application agreement is made on this date \_\_\_\_\_ between \_\_\_\_\_, referred to here as "landowner", and \_\_\_\_\_, referred to here as the "Permittee".

Landowner is the owner of agricultural land shown on the map attached as Exhibit A and designated there as \_\_\_\_\_ ("landowner's land"). Permittee agrees to apply and landowner agrees to comply with certain permit requirements following application of sewage sludge on landowner's land in amounts and in a manner authorized by VPDES permit number \_\_\_\_\_ which is held by the Permittee.

Landowner acknowledges that the appropriate application of sewage sludge will be beneficial in providing fertilizer and soil conditioning to the property. Moreover, landowner acknowledges having been expressly advised that, in order to protect public health, the following site restrictions must be adhered to when sewage sludge receives Class B treatment for pathogen reduction:

1. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge;
2. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil;
3. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil;
4. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge;
5. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge;
6. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the State Water Control Board;
7. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge;
8. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
9. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land for three years following the application of sewage sludge borne cadmium equal to or exceeding 0.5 kilograms/hectare (0.45 pounds/acre).

Permittee agrees to notify landowner or landowner's designee of the proposed schedule for sludge application and specifically prior to any particular application to landowner's land. This agreement may be terminated by either party upon written notice to the address specified below.

Landowner:

\_\_\_\_\_  
Signature\_\_\_\_\_  
Mailing Address

Permittee:

\_\_\_\_\_  
Signature\_\_\_\_\_  
Mailing Address

## SECTION D. SURFACE DISPOSAL N/A

Complete this section only if you own or operate a surface disposal site. Provide the information for each active sewage sludge unit.

## 1. Information on Active Sewage Sludge Units.

- a. Unit name or number:
- b. Unit location:
- c. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period: \_\_\_\_\_ tons
- d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit: \_\_\_\_\_ tons
- e. Does the active sewage sludge unit have a liner with a minimum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec? ☐ Yes ☐ No If yes, describe the liner or attach a description.
- f. Does the active sewage sludge unit have a leachate collection system? ☐ Yes ☐ No If yes, describe the leachate collection system or attach a description. Also, describe the method used for leachate disposal and provide the numbers of any federal, state or local permits for leachate disposal:
- g. If you answered no to either e or f, answer the following:  
Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site? ☐ Yes ☐ No If yes, provide the actual distance in meters:
- h. Remaining capacity of active sewage sludge unit, in dry metric tons:  
Anticipated closure date for active sewage sludge unit, if known:  
Provide with this application a copy of any closure plan developed for this active sewage sludge unit.

## 2. Sewage Sludge from Other Facilities.

Is sewage sludge sent to this active sewage sludge unit from any facilities other than yours? ☐ Yes ☐ No  
If yes, provide the following information for each such facility, attach additional sheets as needed.

- a. Name of facility:
- b. Facility contact: Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Phone: ( ) \_\_\_\_\_
- c. Facility mailing address.  
Street or P.O. Box: \_\_\_\_\_  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- d. List on this form or an attachment the facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the facility's sewage sludge management practices:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_  
\_\_\_\_\_
- e. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?  
☐ Class A ☐ Class B ☐ None or unknown
- f. Describe on this form or on another sheet of paper any treatment processes used at the other facility to reduce pathogens in sewage sludge:



- g. Which vector attraction reduction option is achieved before sewage sludge leaves the other facility?
- ☐ Option 1 (Minimum 38 percent reduction in volatile solids)
  - ☐ Option 2 (Anaerobic process, with bench-scale demonstration)
  - ☐ Option 3 (Aerobic process, with bench-scale demonstration)
  - ☐ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
  - ☐ Option 5 (Aerobic processes plus raised temperature)
  - ☐ Option 6 (Raise pH to 12 and retain at 11.5)
  - ☐ Option 7 (75 percent solids with no unstabilized solids)
  - ☐ Option 8 (90 percent solids with unstabilized solids)
  - ☐ None or unknown
- h. Describe on this form or another sheet of paper any treatment processes used at the other facility to reduce vector attraction properties of sewage sludge:
- i. Describe on this form or another sheet of paper any other sewage sludge treatment activities performed by the other facility that are not identified in e - h above:

3. Vector Attraction Reduction.

- a. Which vector attraction reduction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?
- ☐ Option 9 (Injection below land surface)
  - ☐ Option 10 (Incorporation into soil within 6 hours)
  - ☐ Option 11 (Covering active sewage sludge unit daily)
- b. Describe on this form or another sheet of paper any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge:

4. Ground Water Monitoring.

- a. Is ground water monitoring currently conducted at this active sewage sludge unit or are ground water monitoring data otherwise available for this active sewage sludge unit? ☐ Yes ☐ No If yes, provide a copy of available ground water monitoring data. Also provide a written description of the well locations, the approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.
- b. Has a ground water monitoring program been prepared for this active sewage sludge unit? ☐ Yes ☐ No If yes, submit a copy of the ground water monitoring program with this application.
- c. Have you obtained a certification from a qualified ground water scientist that the aquifer below the active sewage sludge unit has not been contaminated? ☐ Yes ☐ No If yes, submit a copy of the certification with this application.

5. Site-Specific Limits.

- Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?
- ☐ Yes ☐ No If yes, submit information to support the request for site-specific pollutant limits with this application.

## SECTION E. CERTIFICATION

All applicants must sign the certification statement below

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 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.

Signature: D. A. HeacockName: D. A. Heacock  
(type or print)Title: Site Vice PresidentTelephone number: (540) 894-2101Date Signed: 7-10-2000

July 17, 2000

Mr. Janardan Pandey  
Va. Dept. of Environmental Quality  
Valley Regional Office  
4411 Early Road  
P.O. Box 1129  
Harrisonburg, Va. 22801

Dear Mr. Pandey:

Attached are the results of chemical analyses performed using effluent samples collected on November 4, 1998 from Outfall 001 at the North Anna Power Station. These data were originally submitted to the DEQ by cover letter dated January 7, 1999. In the original submittal, copper was reported as an actual measured concentration. You will note that in this submittal the results for copper are reported as <10 ug/L. We believe that this change is appropriate for the following reasons:

- North Anna's discharge permit (Special condition B.1. *Additional Effluent Monitoring for Outfall 001* ) recommends that chemical analyses for copper be performed using EPA Method 220.2, which is the analytical method used by our System Laboratory to perform the copper analyses of the November 4, 1998 sample
- The quantification level associated with copper and EPA Method 220.2 in Special Condition B.1. is 10 ug/L, which is greater than the copper concentration that was reported for the November 4, 1998 sample
- A quantification level of 10 ug/L for copper analyses is also recommended in the DEQ's guidance document *OWRM Guidance Memo 93-015: Guidance on Preparing VPDES Permits Based on the Water Quality Standards for Toxics* (June 22, 1993). This guidance was used to develop the current VPDES permit for the North Anna Power Station. Page 8 of this guidance contains the following statement:  
"If all available data are reported as less than the QL, then the data may be interpreted by the permit writer to mean that the data is not precise enough to evaluate. In these cases a permit limit determination is not required."
- The above statement may be interpreted to mean that any datum reported as a measured value less than the QL is not precise enough to evaluate. However, it may also be interpreted to mean that a data point must actually be reported as less than the QL (i.e., < 10 in the case of copper) in order to meet the "not precise enough" definition.
- Quantification levels are generally estimated to be 3 to 10 times the detection level for a particular substance. The detection level listed for EPA 220.2 in OWRM Guidance Memo 96-009, and which is achievable by our System Laboratory, is 1 ug/L. Consequently, the estimated quantification level for this method would be 3 - 10 ug/L (i.e., above the concentration of copper measured in Outfall 001).

Mr. Janardan Pandey  
July 17, 2000  
Page 2

DEQ staff has made a number of updates to OWRM Guidance Memo 93-015 since it was originally issued. For example, more recent guidance documents (e.g., Guidance Memorandum No. 96-009: *Obtaining Dissolved Metals Data*) recommend that a permittee be required to select from a list of analytical methods to achieve a quantification level that is "less than the wasteload allocation for the material under consideration". We recognized that there are several analytical methods that can typically achieve quantification levels for copper less than 10 ug/L. This, however, does not change the fact that the existing permit for the North Anna Power Station recommends the use of EPA Method 220.2, and that we followed this recommendation in analyzing Outfall 001 for copper.

In light of the above, reporting the copper data as < 10 ug/L is appropriate for copper data generated using EPA Method 220.2 and eliminates any confusion relative to the implementation of DEQ guidance. Therefore, we request that you replace the original data sheet submitted on January 7, 1999 with the revised version.

Please feel free to contact Ken Roller at (804) 273-3494 should you have any questions concerning this submittal.

Sincerely,



P. F. Faggert,  
Vice President and Chief Environmental Officer

bc: A.C. Cooke *Reviewed and approved  
by e-mail 7-7-00*  
J.B. Livingstone

ec: R.B. Asplund  
D.C. Yaworsky  
K.W. Roller *KR 7-17-00*

## ANALYSIS TEST RESULTS BY SAMPLE

LOCATION: NORTH ANNA

SUBMITTER: G. BISHOP

SL #	SAMPLE DATE	DESCRIPTION	PARAMETER	RESULT VALUE
42840	11/04/98	OUTFALL 001	ACIDS (PHENOLS)	: SEE GCMS
			Ammonia as N, PPM	: 0.03
			BN AND PESTICIDES	: SEE GCMS
			Cadmium as Cd, ppb	: <0.3
			Chrom. +6 as Cr6,PPM	: <0.010
			Chromium as Cr, ppb	: <1
			Copper as Cu, ppb	: <10
			Cyanide as CN, PPM	: <0.010
			Dis. Ag, ppb	: <0.1
			Dis. Cd, ppb	: <0.3
			Dis. Cr, ppb	: <1
			Dis. Cu, ppb	: <10
			Dis. Hg, ppb	: <0.2
			Dis. Ni, ppb	: <5
			Dis. Pb, ppb	: <1
			Dis. Se, ppb	: <3
			Dis. Zn, PPM	: <0.010
			Lead as Pb, ppb	: <1
			Mercury as Hg, ppb	: <0.2
			Nickel as Ni, ppb	: <5
			Selenium as Se, ppb	: <3
			Silver as Ag, ppb	: <0.1
			T-Hard. as CaCO3,PPM	: 10.26
			TOTAL XYLENES, PPB	: <0.2
			VOLATILES	: SEE GCMS
			Zinc as Zn, PPM	: <0.010
42841	11/04/98	TRIP BLANK	Cadmium as Cd, ppb	: <0.3
			Chromium as Cr, ppb	: <1
			Copper as Cu, ppb	: <10
			Dis. Ag, ppb	: <0.1
			Dis. Cd, ppb	: <0.3
			Dis. Cr, ppb	: <1
			Dis. Cu, ppb	: <10
			Dis. Hg, ppb	: <0.2
			Dis. Ni, ppb	: <5
			Dis. Pb, ppb	: <1
			Dis. Se, ppb	: <3
			Dis. Zn, PPM	: <0.010
			Lead as Pb, ppb	: <1
			Mercury as Hg, ppb	: <0.2
			Nickel as Ni, ppb	: <5
			Selenium as Se, ppb	: <3
			Silver as Ag, ppb	: <0.1
			Zinc as Zn, PPM	: <0.010

## ANALYSIS TEST RESULTS BY SAMPLE

LOCATION: NORTH ANNA

SUBMITTER: G. BISHOP

SL #	SAMPLE DATE	DESCRIPTION	PARAMETER	RESULT VALUE
42842	11/04/98	FIELD BLANK	Cadmium as Cd, ppb	: <0.3
			Chromium as Cr, ppb	: <1
			Copper as Cu, ppb	: <10
			Dis. Ag, ppb	: <0.1
			Dis. Cd, ppb	: <0.3
			Dis. Cr, ppb	: <1
			Dis. Cu, ppb	: <10
			Dis. Hg, ppb	: <0.2
			Dis. Ni, ppb	: <5
			Dis. Pb, ppb	: <1
			Dis. Se, ppb	: <3
			Dis. Zn, PPM	: <0.010
			Lead as Pb, ppb	: <1
			Mercury as Hg, ppb	: <0.2
			Nickel as Ni, ppb	: <5
			Selenium as Se, ppb	: <3
			Silver as Ag, ppb	: <0.1
			Zinc as Zn, PPM	: <0.010
42843	11/04/98	EQUIP BLANK	Cadmium as Cd, ppb	: <0.3
			Chromium as Cr, ppb	: <1
			Copper as Cu, ppb	: <10
			Dis. Ag, ppb	: <0.1
			Dis. Cd, ppb	: <0.3
			Dis. Cr, ppb	: <1
			Dis. Cu, ppb	: <10
			Dis. Hg, ppb	: <0.2
			Dis. Ni, ppb	: <5
			Dis. Pb, ppb	: <1
			Dis. Se, ppb	: <3
			Dis. Zn, PPM	: <0.010
			Lead as Pb, ppb	: <1
			Mercury as Hg, ppb	: <0.2
			Nickel as Ni, ppb	: <5
			Selenium as Se, ppb	: <3
			Silver as Ag, ppb	: <0.1
			Zinc as Zn, PPM	: <0.010

\* In the original laboratory report, which was produced on 12/04/98, dissolved and total recoverable copper were reported as measured concentrations. The report was revised 07/13/00 to reflect that the measured copper concentrations were less than the DEQ-specified quantification level of 10 ug/L for EPA Method 220.2, the analytical method used to analyze the 11/04/98 samples for copper.

## Special Condition

### 6. Flow Release from Lake Anna Impoundment: Lake Level Contingency Plan

- A The intent of this condition is to allow specific reductions in the lake discharge flow when the lake water level drops below designated levels due to drought conditions, taking into account and minimizing any adverse effects on any release reduction requirements on downstream users.
- B Except as provided in C below, the permittee shall at all times provide a minimum instantaneous release from the Lake Anna impoundment of 40 cfs.
- C When the level in Lake Anna reaches 248 feet above mean sea level (msl), the permittee will begin reducing releases below the 40 cfs minimum, in B above, in accordance with the following conditions:
1. Minimum instantaneous releases shall not drop below 20 cfs.
  2. The downstream users identified below will be given at least 72 hours notice by the permittee prior to the initiation of flow reductions:
    - Hanover County Public Utilities
    - Bear Island Paper Company
    - Engel Farms, Inc
    - Pamunkey Indian Tribal Government
  3. Skimmer gate adjustments will be performed in accordance with Station Operating Procedures.
  4. Releases are stepped down in increments of approximately 5 cfs with at least a 72-hour period following each incremental reduction and prior to any subsequent reduction.
  5. During the period in which releases are reduced below 40 cfs, conditions in the North Anna River shall be monitored in accordance with the monitoring plan submitted by the permittee and approved by the DEQ prior to implementation of the Lake Level Contingency Plan.
  6. Releases from the dam shall return to 40 cfs upon the Lake level returning to greater than 248 ft. msl. Increases of flow will occur in 5 cfs increments with a 24 hour wait period prior to the next gate adjustment.
  7. If a downstream user noted above identifies an adverse effect at any time during flow reductions, flows will be increased in 5 cfs increments with a 24 hour wait period prior to the next gate adjustment until flow is returned to 40 cfs or it is determined that there is no longer the potential for adverse impact.
  8. Adverse effect is defined as the inability to withdraw/discharge water for proper operation of facilities or impairment of water quality.

# **NORTH ANNA RIVER MONITORING PLAN**

## **LOW FLOW CONDITIONS**

### **Introduction**

The North Anna River between Lake Anna and U. S. Route 1 has been monitored extensively by Virginia Power beginning with preoperational studies in the early 70's and continuing with postoperational studies through the current year. This stretch of river also was selected over a number of other U. S. rivers for an extensive research effort on the life history of smallmouth bass Micropterus dolomieu. The basis for the selection was primarily the extensive database from Company studies. The research effort was conducted under the Compensatory Mechanisms modeling umbrella of the Oak Ridge National Laboratories.

The "low flow conditions" monitoring plan is based primarily on the existing studies being conducted by Virginia Power. Since the existing information is available and based on long-term trend analyses, any population changes in the fishery component due to low flow conditions will be detected in a manner similar to trends evidenced from high flow conditions.

### **Methods**

Adult fish populations will be monitored from various stations (Figure 1) using two methods: electrofishing and direct observations.



Electrofishing has been conducted on the North Anna River at four (4) stations NAR-1, NAR-2, NAR-4, and NAR-6 (Figure 1) using the same sampling protocol since 1981. Sampling is conducted once per month in May, July and September of each year.

At each station, an approximately 70-m reach of riffle/run type habitat is sampled using an electric seine. Prior to sampling, each 70-m reach is blocked at the downstream end with a 6.5-mm mesh net. Sampling is conducted by working the electric seine from bank-to-bank in a zigzag pattern from the upstream to the downstream end of the station. Having sampled the riffle-run habitat, further information from pool-type habitat is collected using a backpack electrofishing unit. For consistency, ten (10) minutes of effort with the backpack unit is expended at each station.

The collected fish are preserved in 10% formalin and transported to the laboratory for appropriate processing with larger fish being weighed, measured and released in the field. In the laboratory, a maximum of 15 specimens of each species is weighed to the nearest 0.1 g and measured to the nearest one (1) mm total length (TL). If more than 15 specimens of a species are collected, those in excess of 15 are counted and weighed in bulk. Electric seine and backpack electrofisher collections are then pooled by station and survey month for analyses.

To further amplify and understand fish population dynamics in the North Anna River, direct observation surveys are employed to gather abundance and distribution data for smallmouth bass and largemouth bass Micropterus salmoides. Consistent observation techniques have been used in snorkel surveys since 1987.

Snorkel surveys are conducted during July, August, and September. Four (4) stations, NAR-1, NAR-2, NAR-4, and NAR-5 (Figure 1) are sampled twice per month. Counts of smallmouth bass (SMB) and largemouth bass (LMB) are made at each sampling period while swimming approximately 100 m transects along the north and south banks of each station with the transects following an approximately one meter depth contour.

All bass sighted are categorized by species as to young-of-year (YOY) ( $\leq 120$  mm), stock-size ( $120 < \text{SMB} \leq 280$  mm or  $120 < \text{LMB} \leq 305$  mm), or quality-size ( $\text{SMB} \geq 280$  mm or  $\text{LMB} \geq 305$  mm). In addition to size group, all bass sighted are categorized as to type of cover being used; bedrock ledge (Ledge), boulders (Boulder), instream woody debris (Wood), aquatic vegetation (Vegetation), or no apparent cover use (Open). Aquatic vegetation was included as a cover type beginning in 1993 due to annual increases in the amount of vegetation observed from 1990 through 1992, and apparent increased use by fish.

During each station survey, three successive counts are made at each bankside transect. Each observer performs an independent estimate of the distance that YOY smallmouth bass (TL#120 mm) can be distinguished from YOY largemouth bass (TL#120 mm) at each station. Lateral visibility at each station is then estimated by averaging the independent estimates of both observers. Counts of smallmouth bass and largemouth bass are converted to density estimates (number/hectare of bankside channel) to account for differences in average visibility among survey days and sampling stations. Density estimates for all smallmouth bass and largemouth bass larger than YOY size are pooled by species, station, and sample year to facilitate identification of species-specific and station-specific changes over time. Calculations of median density estimates by sample year and associated 95% confidence intervals are based on Walsh averages (Hollander and Wolfe 1973). YOY densities are not calculated as it is doubtful that YOY are as susceptible to the observation technique as are larger fish, due primarily to their small size and cryptic nature.

Cover utilization data from the first of three sets of observations obtained during each snorkel survey is used to examine differences in cover use by smallmouth bass and largemouth bass. Data from only the first count are used because it is assumed fish observed during the first count are relatively undisturbed by divers,

whereas fish observed on the second and third counts may change their positions in response to divers passing by during the first count.

At the time of each type of survey, field measurements of water temperature and dissolved oxygen are collected and recorded using portable model YSI-55 instruments.

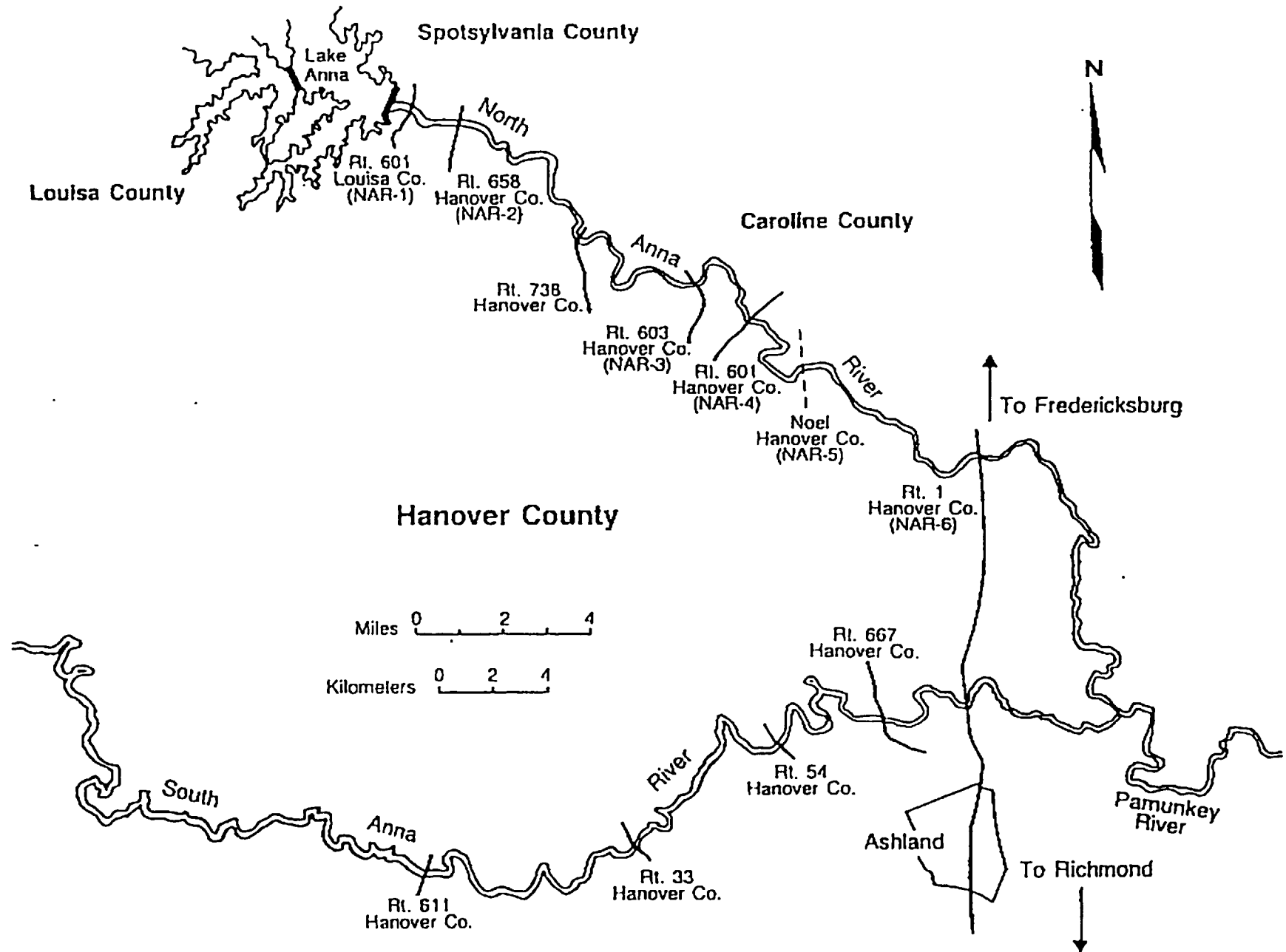
In addition, water temperatures (°C) are recorded hourly at Station NAR-1 using a fixed Onset Optic Stowaway temperature recorder. Further, during times of flow reductions below 40 cfs dissolved oxygen monitors will be installed at NAR-1 and NAR-5 to monitor any changes in D.O. over the flow reduction period.

### Summary

This monitoring plan will result in information directly comparable to years of historical information and therefore facilitate trend analyses for any low-flow periods. It will also provide additional information for dissolved oxygen changes during any low-flow events.

FIGURE 1:

Location of North Anna River temperature recording, electrofishing, and snorkel survey stations.



LAKE ANNA

SEE TOWER CABLES TO DIRECT BURIED

EXCLUSION BOUNDARY

NO.	EXTERNAL OUTFALLS
001	DISCHARGE OF CONDENSER COOLING WATER FROM WHTF AT DIKE 3
009	SETTLING POND
013	TURBINE BUILDING SUMP & STORM WATER
014	TURBINE BUILDING SUMP & STORM WATER
016	INTAKE SCREEN WASH WATER
020	REVERSE OSMOSIS REJECT
021	REVERSE OSMOSIS DRAIN LINE
022	DRAINAGE AREA #2A (STORM WATER ONLY)
023	DRAINAGE AREA #2B (STORM WATER ONLY)
024	DRAINAGE AREA #3 (STORM WATER ONLY)
025	DRAINAGE AREA #18 (STORM WATER ONLY)
026	DRAINAGE AREA #25 (STORM WATER ONLY)
NO.	INTERNAL OUTFALLS
103	PROCESS WASTE CLARIFIER
104	OIL/WATER SEPARATOR, TURBINE BUILDING SUMP & STORM WATER
105	BEARING COOLING TOWER BLOWDOWN
107	BEARING COOLING SYSTEM DISCHARGE
108	SERVICE WATER OVERBOARD
109	HOT WELL DRAIN - UNIT 1
110	HOT WELL DRAIN - UNIT 2
111	MAIN WASTE TREATMENT PLANT
112	STEAM GENERATOR BLOWDOWN - UNIT 1
113	STEAM GENERATOR BLOWDOWN - UNIT 2
114	SERVICE WATER TIE-IN VAULT DRAIN
115	SERVICE WATER SYSTEM BLOWDOWN



VIRGINIA POWER  
NORTH CAROLINA POWER

NUCLEAR ENGINEERING SERVICES  
RICHMOND, VIRGINIA

VPDES OUTFALL LOCATION MAP/SITE DRAINAGE  
ENVIRONMENTAL COMPLIANCE  
NORTH ANNA POWER STATION

PRELIMINARY - FOR PERMIT REVIEW

DSGN	DSGN SUPV	CAD NO. [240310]NAENVCOM.DGN		
DRWN	ENGR SUPV	DRAWING NO. N-2646-3-C-001		REV. 0
CHKD				
DISPL ENGR	SCALE 1" = 300'		UNLESS OTHERWISE NOTED	SH OF

DATE	DSGN	DRWN	CHKD	DSGN SUPV	CIVL ENGR	ELEC ENGR	MECH ENGR	ARCH	E.M. ENGR	18C ENGR	ENGR SUPV
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3

2

1

REF. FILE [240,000]STRBRDF.DGN