

## **APPENDIX A NRC NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS**

Dominion prepared this environmental report in accordance with the requirements of U.S. Nuclear Regulatory Commission (NRC) regulation 10 CFR 51.53. NRC included in the regulation a list of National Environmental Policy Act (NEPA) issues associated with license renewal of nuclear power plants. [Table A-1](#) lists these 92 issues and identifies the section in which Dominion addressed each issue in the environmental report. For expediency, Dominion assigned a number to each issue and uses the issue numbers throughout the environmental report.

**Table A-1**  
**Surry Power Station Environmental Report**  
**Discussion of License Renewal NEPA Issues<sup>a</sup>**

Issue	Category	Section of this Environmental Report
1. Impacts of refurbishment on surface water quality	1	4.0
2. Impacts of refurbishment on surface water use	1	4.0
3. Altered current patterns at intake and discharge structures	1	4.0
4. Altered salinity gradients	1	4.0
5. Altered thermal stratification of lakes	1	4.0
6. Temperature effects on sediment transport capacity	1	4.0
7. Scouring caused by discharged cooling water	1	4.0
8. Eutrophication	1	4.0
9. Discharge of chlorine or other biocides	1	4.0
10. Discharge of sanitary wastes and minor chemical spills	1	4.0
11. Discharge of other metals in waste water	1	4.0
12. Water use conflicts (plants with once-through cooling systems)	1	4.0
13. Water use conflicts (plants with cooling ponds or cooling towers using make-up water from a small river with low flow)	2	4.1
14. Refurbishment impacts to aquatic resources	1	4.0
15. Accumulation of contaminants in sediments or biota	1	4.0
16. Entrainment of phytoplankton and zooplankton	1	4.0
17. Cold shock	1	4.0

**Table A-1 (continued)**  
**Surry Power Station Environmental Report**  
**Discussion of License Renewal NEPA Issues<sup>a</sup>**

Issue	Category	Section of this Environmental Report
18. Thermal plume barrier to migrating fish	1	4.0
19. Distribution of aquatic organisms	1	4.0
20. Premature emergence of aquatic insects	1	4.0
21. Gas supersaturation (gas bubble disease)	1	4.0
22. Low dissolved oxygen in the discharge	1	4.0
23. Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses	1	4.0
24. Stimulation of nuisance organisms (e.g., shipworms)	1	4.0
25. Entrainment of fish and shellfish in early life stages for plants with once-through and cooling pond heat dissipation systems	2	4.2
26. Impingement of fish and shellfish for plants with once-through and cooling pond heat dissipation systems	2	4.3
27. Heat shock for plants with once-through and cooling pond heat dissipation systems	2	4.4
28. Entrainment of fish and shellfish in early life stages for plants with cooling-tower-based heat dissipation systems	1	4.0
29. Impingement of fish and shellfish for plants with cooling-tower-based heat dissipation systems	1	4.0
30. Heat shock for plants with cooling-tower-based heat dissipation systems	1	4.0

**Table A-1 (continued)**  
**Surry Power Station Environmental Report**  
**Discussion of License Renewal NEPA Issues<sup>a</sup>**

Issue	Category	Section of this Environmental Report
31. Impacts of refurbishment on groundwater use and quality	1	4.0
32. Groundwater use conflicts (potable and service water; plants that use < 100 gpm)	1	4.0
33. Groundwater use conflicts (potable, service water, and dewatering; plants that use > 100 gpm)	2	4.5
34. Groundwater use conflicts (plants using cooling towers withdrawing make-up water from a small river)	2	4.6
35. Groundwater use conflicts (Ranney wells)	2	4.7
36. Groundwater quality degradation (Ranney wells)	1	4.0
37. Groundwater quality degradation (saltwater intrusion)	1	4.0
38. Groundwater quality degradation (cooling ponds in salt marshes)	1	4.0
39. Groundwater quality degradation (cooling ponds at inland sites)	2	4.8
40. Refurbishment impacts to terrestrial resources	2	4.9
41. Cooling tower impacts on crops and ornamental vegetation	1	4.0
42. Cooling tower impacts on native plants	1	4.0
43. Bird collisions with cooling towers	1	4.0
44. Cooling pond impacts on terrestrial resources	1	4.0
45. Power line right-of-way management (cutting and herbicide application)	1	4.0
46. Bird collisions with power lines	1	4.0

**Table A-1 (continued)**  
**Surry Power Station Environmental Report**  
**Discussion of License Renewal NEPA Issues<sup>a</sup>**

Issue	Category	Section of this Environmental Report
47. Impacts of electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, livestock)	1	4.0
48. Floodplains and wetlands on power line right-of-way	1	4.0
49. Threatened or endangered species	2	4.10
50. Air quality during refurbishment (non-attainment and maintenance areas)	2	4.11
51. Air quality effects of transmission lines	1	4.0
52. Onsite land use	1	4.0
53. Power line right-of-way land use impacts	1	4.0
54. Radiation exposures to the public during refurbishment	1	4.0
55. Occupational radiation exposures during refurbishment	1	4.0
56. Microbiological organisms (occupational health)	1	4.0
57. Microbiological organisms (public health) (plants using lakes or canals, or cooling towers or cooling ponds that discharge to a small river)	2	4.12
58. Noise	1	4.0
59. Electromagnetic fields, acute effects (electric shock)	2	4.13
60. Electromagnetic fields, chronic effects	NA <sup>b</sup>	4.0
61. Radiation exposures to public (license renewal term)	1	4.0
62. Occupational radiation exposures (license renewal term)	1	4.0

**Table A-1 (continued)**  
**Surry Power Station Environmental Report**  
**Discussion of License Renewal NEPA Issues<sup>a</sup>**

Issue	Category	Section of this Environmental Report
63. Housing impacts	2	4.14
64. Public services: public safety, social services, and tourism and recreation	1	4.0
65. Public services: public utilities	2	4.15
66. Public services: education (refurbishment)	2	4.16
67. Public services: education (license renewal term)	1	4.0
68. Offsite land use (refurbishment)	2	4.17.1
69. Offsite land use (license renewal term)	2	4.17.2
70. Public services: transportation	2	4.18
71. Historic and archaeological resources	2	4.19
72. Aesthetic impacts (refurbishment)	1	4.0
73. Aesthetic impacts (license renewal term)	1	4.0
74. Aesthetic impacts of transmission lines (license renewal term)	1	4.0
75. Design basis accidents	1	4.0
76. Severe accidents	2	4.20
77. Offsite radiological impacts (individual effects from other than the disposal of spent fuel and high-level waste)	1	4.0
78. Offsite radiological impacts (collective effects)	1	4.0
79. Offsite radiological impacts (spent fuel and high-level waste disposal)	1	4.0
80. Nonradiological impacts of the uranium fuel cycle	1	4.0
81. Low-level waste storage and disposal	1	4.0
82. Mixed waste storage and disposal	1	4.0

**Table A-1 (continued)**  
**Surry Power Station Environmental Report**  
**Discussion of License Renewal NEPA Issues<sup>a</sup>**

Issue	Category	Section of this Environmental Report
83. Onsite spent fuel	1	4.0
84. Nonradiological waste	1	4.0
85. Transportation	1	4.0
86. Radiation doses (decommissioning)	1	4.0
87. Waste management (decommissioning)	1	4.0
88. Air quality (decommissioning)	1	4.0
89. Water quality (decommissioning)	1	4.0
90. Ecological resources (decommissioning)	1	4.0
91. Socioeconomic impacts (decommissioning)	1	4.0
92. Environmental justice	NA <sup>b</sup>	2.11

a. Source: 10 CFR 51, Subpart A, Appendix A, Table B-1. (Issue numbers added to facilitate discussion.)

b. Not applicable. Regulation does not categorize this issue.  
NEPA = National Environmental Policy Act.

## **APPENDIX B VPDES PERMIT**

The Virginia Pollutant Discharge Elimination System permit for Surry Power Station is approximately 80 pages long. Appendix B contains a copy of the permit cover page to enable confirmation of the permit's existence and one other page that pertains to one issue.





COMMONWEALTH of VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No. VA0004090

Effective Date: September 23, 1996  
Expiration Date: September 23, 2001

AUTHORIZATION TO DISCHARGE UNDER THE  
VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM  
AND  
THE VIRGINIA STATE WATER CONTROL LAW

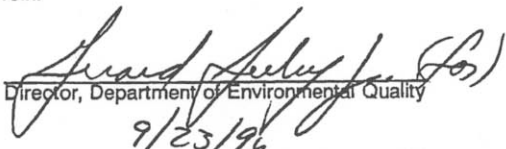
In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

Owner: Virginia Electric & Power Co.  
Facility Name: Virginia Electric & Power Co.-Surry Power Station  
City: N/A  
County: Surry  
Facility Location: State Rt. 650 in Surry County

The owner is authorized to discharge to the following receiving stream:

Stream: James River  
River Basin: James River (Lower)  
River Subbasin: N/A  
Section: 1  
Class: II  
Special Standards: a

The authorized discharge shall be in accordance with this cover page, Part I - Effluent Limitations and Monitoring Requirements, Part II - Monitoring and Reporting Requirements, and Part III - Management Requirements, as set forth herein.

  
Director, Department of Environmental Quality

9/23/96  
Date

Permit No. VA0004090  
Part I  
Page 28 of 41

C. Other Requirements or Special Conditions - continued:

9. The permittee shall sample the first discharge from Package Boilers A & B (Outfall 107) after the effective date of the permit and complete Form 2C, Table V, Part A and any parameters believed present in Parts B and C for Outfall 107. Data shall be submitted to the Piedmont Regional Office within two months of the sample date.
10. Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Department of Environmental Quality that the units in a particular location cannot operate at or below this level of chlorination.
11. All limitations and monitoring requirements for radioactivity in the wastewater shall be regulated by the Nuclear Regulatory Commission.
12. Within **90 days** of the effective date of this permit, the permittee shall submit to the DEQ Piedmont Regional Office a groundwater monitoring program. The purpose of that program will be to determine if the activities at the Gravel Neck Facility are resulting in violations of the State Water Control Board's Groundwater Standards. The program may be approved by the Director of the DEQ Regional Office. Once approved, the program shall become an enforceable condition of this permit.
13. There shall be no discharge of tank bottom waters at the Gravel Neck Facility.
14. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.
15. This permit shall be modified or alternatively revoked and reissued to include new or alternative nutrient limitations should the Board adopt nutrient standards for the Chesapeake Bay and tributary river basin, or if a future water quality regulation, statute, or water quality management plan requires new or alternative nutrient control.
16. The permittee has requested alternative effluent limitations under 316(a). Pursuant to a Study Plan approved by the Board, Virginia Power conducted a 316(a) study and submitted a 316(a) Demonstration Report on September 1, 1977. The Board has reviewed the study and demonstration and found that effluent limitations more stringent than the thermal limitations included in this permit are not necessary to assure the protection and propagation of a balanced indigenous community of shellfish, fish and wildlife in the James River.
17. All pump and haul activities involving the removal of tank bottom waters from the bulk storage tanks shall require that a report detailing the following be prepared and submitted to the Department of Environmental Quality by the 10th of the month following the operation:
  - a) The name of the contractor responsible for hauling the waste.
  - b) The date and time the contractor hauled the waste.
  - c) The final destination and disposition of the waste.
  - d) The disposal quantity of waste.
18. Toxics Management Plan
  - a. Biological Monitoring: