

**ATTACHMENT A DISCUSSION OF NRC LICENSE RENEWAL
NATIONAL ENVIRONMENTAL POLICY ACT ISSUES**

FirstEnergy Nuclear Operating Company (FENOC) has prepared this *Applicant's Environmental Report - Operating License Renewal Stage; Beaver Valley Power Station* in accordance with the requirements of the U.S. Nuclear Regulatory Commission (NRC) regulation at 10 CFR 51.53. The NRC included in the regulation a list of National Environmental Policy Act (NEPA) issues for license renewal of nuclear power plants. [Table A-1](#) lists these 92 issues with their assigned classifications, i.e., categories, and identifies where FENOC addresses each issue in the environmental report (ER). The table also provides a cross-reference to the section in the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS) containing the NRC's generic analysis. For expediency, FENOC has assigned a number to each issue and uses the issue numbers throughout the ER.

TABLE A-1

**BEAVER VALLEY STATION ENVIRONMENTAL REPORT
DISCUSSION OF LICENSE RENEWAL NEPA ISSUES**

Issue ^a	Category ^a	Section of this Environmental Report	GEIS Cross Reference ^b (Section/Page)
1. Impacts of refurbishment on surface water quality	1	4.1	3.4.1/3-4
2. Impacts of refurbishment on surface water use	1	4.1	3.4.1/3-4
3. Altered current patterns at intake and discharge structures	1	4.1	4.3.2.2/4-32
4. Altered salinity gradients	1	NA	Not applicable because BVPS is not in a coastal area
5. Altered thermal stratification of lakes	1	NA	Not applicable because BVPS does not withdraw cooling water from a lake
6. Temperature effects on sediment transport capacity	1	4.1	4.3.2.2/4-32
7. Scouring caused by discharged cooling water	1	4.1	4.3.2.2/4-32
8. Eutrophication	1	4.1	4.3.2.2/4-32
9. Discharge of chlorine or other biocides	1	4.1	4.3.2.2/4-32
10. Discharge of sanitary wastes and minor chemical spills	1	4.1	4.3.2.2/4-32
11. Discharge of other metals in waste water	1	4.1	4.3.2.2/4-32
12. Water use conflicts (plants with once-through cooling systems)	1	NA	Not applicable because BVPS is not equipped with once-through heat dissipation systems
13. Water-use conflicts (plants with cooling ponds or cooling towers using makeup water from a small river with low flow)	2	4.2	4.3.2.1/4-29
14. Refurbishment impacts to aquatic resources	1	4.1	3.5/3-5
15. Accumulation of contaminants in sediments or biota	1	4.1	4.3.3/4-33

TABLE A-1 (CONTINUED)

**BEAVER VALLEY POWER STATION ENVIRONMENTAL REPORT
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Issue ^a	Category ^a	Section of this Environmental Report	GEIS Cross Reference ^b (Section/Page)
16. Entrainment of phytoplankton and zooplankton	1	4.1	4.3.3/4-33
17. Cold shock	1	4.1	4.3.3/4-33
18. Thermal plume barrier to migrating fish	1	4.1	4.3.3/4-33
19. Distribution of aquatic organisms	1	4.1	4.3.3/4-33
20. Premature emergence of aquatic insects	1	4.1	4.3.3/4-33
21. Gas supersaturation (gas bubble disease)	1	4.1	4.3.3/4-33
22. Low dissolved oxygen in the discharge	1	4.1	4.3.3/4-33
23. Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses	1	4.1	4.3.3/4-33
24. Stimulation of nuisance organisms (e.g., shipworms)	1	4.1	4.3.3/4-33
25. Entrainment of fish and shellfish in early life stages for plants with once-through and cooling pond heat dissipation systems	2	Identified as NA in 4.3	Not applicable because BVPS is not equipped with cooling ponds or once-through heat dissipation systems.
26. Impingement of fish and shellfish for plants with once-through and cooling pond heat dissipation systems	2	Identified as NA in 4.4	Not applicable because BVPS is not equipped with cooling ponds or once-through heat dissipation systems.
27. Heat shock for plants with once-through and cooling pond heat dissipation systems	2	Identified as NA in 4.5	Not applicable because BVPS is not equipped with cooling ponds or once-through heat dissipation systems.
28. Entrainment of fish and shellfish in early life stages for plants with cooling tower-based heat dissipation systems	1	4.1	4.3.3/4-33

TABLE A-1 (CONTINUED)

**BEAVER VALLEY POWER STATION ENVIRONMENTAL REPORT
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Issue ^a	Category ^a	Section of this Environmental Report	GEIS Cross Reference ^b (Section/Page)
29. Impingement of fish and shellfish for plants with cooling tower-based heat dissipation systems	1	4.1	4.3.3/4-33
30. Heat shock for plants with cooling tower-based heat dissipation systems	1	4.1	4.3.3/4-33
31. Impacts of refurbishment on groundwater use and quality	1	4.1	3.4.2/3-4
32. Groundwater use conflicts (potable and service water; plants that use < 100 gpm)	1	NA	Not applicable because BVPS does not use groundwater
33. Groundwater use conflicts (potable, service water, and dewatering; plants that use > 100 gpm)	2	Identified as NA in 4.6	Not applicable because BVPS does not use groundwater.
34. Groundwater use conflicts (plants using cooling towers withdrawing makeup water from a small river)	2	4.7	4.8.1.3/4-117
35. Groundwater use conflicts (Ranney wells)	2	Identified as NA in 4.8	Not applicable because BVPS does not use Ranney wells
36. Groundwater quality degradation (Ranney wells)	1	NA	Not applicable because BVPS does not use Ranney wells
37. Groundwater quality degradation (saltwater intrusion)	1	NA	Not applicable because BVPS is not in a coastal area
38. Groundwater quality degradation (cooling ponds in salt marshes)	1	NA	Not applicable because BVPS is not in a coastal area and BVPS is not equipped with cooling ponds
39. Groundwater quality degradation (cooling ponds at inland sites)	2	Identified as NA in 4.9	Not applicable because BVPS is not equipped with cooling ponds.
40. Refurbishment impacts to terrestrial resources	2	4.10	3.6/3-6
41. Cooling tower impacts on crops and ornamental vegetation	1	4.1	4.3.4/4-34

TABLE A-1 (CONTINUED)

**BEAVER VALLEY POWER STATION ENVIRONMENTAL REPORT
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Issue ^a	Category ^a	Section of this Environmental Report	GEIS Cross Reference ^b (Section/Page)
42. Cooling tower impacts on native plants	1	4.1	4.3.5.1/4-42
43. Bird collisions with cooling towers	1	4.1	4.3.5.2/4-45
44. Cooling pond impacts on terrestrial resources	1	NA	Not applicable because BVPS is not equipped with cooling ponds
45. Power line right-of-way management (cutting and herbicide application)	1	4.1	4.5.6.1/4-71
46. Bird collisions with power lines	1	4.1	4.5.6.2/4-74
47. Impacts of electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, livestock)	1	4.1	4.5.6.3/4-77
48. Floodplains and wetlands on power line right-of-way	1	4.1	4.5.7/4-81
49. Threatened or endangered species	2	4.11	3.9/3-48, 4.1/4-1
50. Air quality during refurbishment (nonattainment and maintenance areas)	2	4.12	3.3/3-2
51. Air quality effects of transmission lines	1	4.1	4.5.2/4-62
52. Onsite land use	1	4.1	3.2/3-1
53. Power line right-of-way land-use impacts	1	4.1	4.5.3/4-62
54. Radiation exposures to the public during refurbishment	1	4.1	3.8.1/3-29
55. Occupational radiation exposures during refurbishment	1	4.1	3.8.2/3-43
56. Microbiological organisms (occupational health)	1	4.1	4.3.6/4-48

TABLE A-1 (CONTINUED)

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Issue ^a	Category ^a	Section of this Environmental Report	GEIS Cross Reference ^b (Section/Page)
57. Microbiological organisms (public health) (Plants using lakes or canals, or cooling towers or cooling ponds that discharge to a small river)	2	4.13	4.3.6/4-48
58. Noise	1	4.1	4.3.7/4-49
59. Electromagnetic fields, acute effects (electric shock)	2	4.14	4.5.4.1/4-66
60. Electromagnetic fields, chronic effects	NA ^c	4.1	4.5.4.2/4-67
61. Radiation exposures to public (license renewal term)	1	4.1	4.6.2/4-87
62. Occupational radiation exposures (license renewal term)	1	4.1	4.6.3/4-95
63. Housing impacts	2	4.15	3.7.2/3-10, 4.7.1/4-101
64. Public services: public safety, social services, and tourism and recreation	1	4.1	3.7.4/3-14, 4.7.3/4-104
65. Public services: public utilities	2	4.16	3.7.4.5/3-19, 4.7.3.5/4-107
66. Public services: education (refurbishment)	2	4.17	3.7.4.1/3-15
67. Public services: education (license renewal term)	1	4.1	4.7.3.1/4-106
68. Offsite land use (refurbishment)	2	4.18.1	3.7.5/3-20
69. Offsite land use (license renewal term)	2	4.18.2	4.7.4/4-107
70. Public services: transportation	2	4.19	3.7.4.2/3-17, 4.7.3.2/4-106
71. Historic and archaeological resources	2	4.20	3.7.7/3-23, 4.7.7/4-114
72. Aesthetic impacts (refurbishment)	1	4.1	3.7.8/3-27

TABLE A-1 (CONTINUED)

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73. Aesthetic impacts (license renewal term)	1	4.1	4.7.6/4-111
74. Aesthetic impacts of transmission lines (license renewal term)	1	4.1	4.5.8/4-83
75. Design basis accidents	1	4.1	5.3.2/5-11, 5.5.1/5-114
76. Severe accidents	2	4.2.1	5.3.3/5-12, 5.4/5-106, 5.5.2/5-114
77. Offsite radiological impacts (individual effects from other than the disposal of spent fuel and high-level radioactive waste)	1	4.1	6.2.4/6-27, 6.6/6-87
78. Offsite radiological impacts (collective effects)	1	4.1	6.2.4/6-27, 6.6/6-88
79. Offsite radiological impacts (spent fuel and high-level radioactive waste disposal)	1	4.1	6.2.4/6-28, 6.6/6-88
80. Nonradiological impacts of the uranium fuel cycle	1	4.1	6.2.2.6/6-20, 6.2.2.7/6-20, 6.2.2.8/6-21, 6.2.2.9/6-21, 6.6/6-90
81. Low-level radioactive waste storage and disposal	1	4.1	6.4.2/6-36, 6.4.3/6-37, 6.4.4/6-48, 6.6/6-90
82. Mixed waste storage and disposal	1	4.1	6.4.5/6-63, 6.6/6-91
83. Onsite spent fuel	1	4.1	6.4.6/6-70, 6.6/6-91
84. Nonradiological waste	1	4.1	6.5/6-86, 6.6/6-92
85. Transportation	1	4.1	Addendum 1 (Ref. A.2)
86. Radiation doses (decommissioning)	1	4.1	7.3.1/7-15, 7.4/7-25
87. Waste management (decommissioning)	1	4.1	7.3.2/7-19, 7.4/7-25
88. Air quality (decommissioning)	1	4.1	7.3.3/7-21, 7.4/7-25
89. Water quality (decommissioning)	1	4.1	7.3.4/7-21, 7.4/7-25

TABLE A-1 (CONTINUED)

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90. Ecological resources (decommissioning)	1	4.1	7.3.5/7-21, 7.4/7-25
91. Socioeconomic impacts (decommissioning)	1	4.1	7.3.7/7-24, 7.4/7-25
92. Environmental justice	NA ^c	2.5.2	Not addressed in GEIS

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

b. Source: [Ref. A.1.](#)

c. Not applicable. The NRC has not categorized this issue.

BVPS = Beaver Valley Power Station

FENOC = FirstEnergy Nuclear Operating Company

GEIS = *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*

gpm = gallons per minute

NA = Not Applicable

NEPA = National Environmental Policy Act

A.1 REFERENCES

- A.1 U.S. Nuclear Regulatory Commission. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*. NUREG-1437. Office of Nuclear Regulatory Research. Washington, D.C. May 1996.
- A.2 U.S. Nuclear Regulatory Commission. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants. Main Report*. “Section 6.3 – Transportation. Table 9.1 Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants.” NUREG-1437, Vol. 1, Addendum 1. Office of Nuclear Reactor Regulation. Washington, D.C. August 1999.

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