

Appendix A

Comments Received on the Environmental Review

Appendix A

Comments Received on the Environmental Review

1 **Part I - Comments Received During Scoping**

2
3 On September 4, 2001, the U.S. Nuclear Regulatory Commission (NRC) published a Notice of
4 Intent in the Federal Register (66 FR 46294), to notify the public of the staff's intent to prepare
5 a plant-specific supplement to the *Generic Environmental Impact Statement for License*
6 *Renewal of Nuclear Plants* (GEIS), NUREG-1437, Volumes 1 and 2, to support the renewal
7 application for the North Anna Power Station operating licenses and to conduct scoping. This
8 plant-specific supplement to the GEIS has been prepared in accordance with the National
9 Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) guidelines, and 10
10 CFR Part 51. As outlined by NEPA, the NRC initiated the scoping process with the issuance of
11 the Federal Register Notice. The NRC invited the applicant; Federal, State, and local
12 government agencies; local organizations; and individuals to participate in the scoping process
13 by providing oral comments at scheduled public meetings and/or submitting written suggestions
14 and comments no later than November 5, 2001.

15
16 The scoping process included two public scoping meetings, which were held at the Louisa
17 County Office Building in Louisa County, Virginia on October 18, 2001. Approximately
18 45 individuals attended the meetings. Each session began with NRC staff members providing
19 brief overviews of the license renewal process and the NEPA process. After the NRC's
20 prepared statements, the meetings were opened for public comments. Eighteen attendees
21 provided either oral statements that were recorded and transcribed by a certified court reporter
22 or written statements. The meeting transcripts are an attachment to the Scoping Meeting
23 Summary dated November 6, 2001. In addition to the comments provided during the public
24 meetings, three comment letters and an email were received by the NRC in response to the
25 Notice of Intent.

26
27 At the conclusion of the scoping period, the NRC staff and its contractors reviewed the tran-
28 scripts and all written material received to identify specific comments and issues. Each set of
29 comments from an individual was given a unique identifier (Commenter ID), so that the com-
30 ments could be traced back to the original transcript, letter, or e-mail containing the comment.
31 Specific comments were numbered sequentially within each comment set. Several comment-
32 ers submitted more than one set of comments (e.g., they made statements in both the
33 afternoon and evening scoping meetings). In these cases, there is a unique Commenter ID for
34 each set of comments.

35
36 Table A-1 identifies the individuals who provided comments applicable to the environmental
37 review and gives the Commenter ID associated with each set of comments. Individuals who
38 spoke at the scoping meetings are listed in the order in which they spoke at the public meeting.

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Table A-1. Individuals Providing Comments During Scoping Comment Period

Commenters ID	Commenter	Affiliation (If Stated)	Comment Source and ADAMS Accession Number(a)
NAS-A	Lee Lintecum	Louisa County	Afternoon Scoping Meeting
NAS-B	Linda Edwards	Louisa County	Afternoon Scoping Meeting
NAS-C	Jimmy Candeto	Mineral Town Manager	Afternoon Scoping Meeting
NAS-D	Duff Green	Orange County	Afternoon Scoping Meeting
NAS-E	Ashland Fortune	Louisa County Sheriff	Afternoon Scoping Meeting
NAS-F	William Hayden	President of Lake Anna Civic Association	Afternoon Scoping Meeting
NAS-G	Jerry Rosenthal	Concerned Citizens of Louisa	Afternoon Scoping Meeting
NAS-H	Lisa Gue	Public Citizen	Afternoon Scoping Meeting
NAS-J	Dave Heacock	Dominion	Afternoon Scoping Meeting
NAS-K	Bill Bolin	Dominion	Afternoon Scoping Meeting
NAS-L	Ashland Fortune	Louisa County Sheriff	Evening Scoping Meeting
NAS-M	V. Earl Dickinson	Virginia General Assembly	Evening Scoping Meeting
NAS-N	Mary Lou Dickinson	LinkAges Community Services	Evening Scoping Meeting
NAS-P	Donald Gallihugh	Mayor of Louisa	Evening Scoping Meeting
NAS-Q	Edward Kube	Louisa County Board of Supervisors	Evening Scoping Meeting
NAS-R	Jerry Rosenthal	Concerned Citizens of Louisa	Evening Scoping Meeting
NAS-S	Tom Filen	Louisa Chamber of Commerce and Virginia Community Bank	Evening Scoping Meeting
NAS-T	Hugh Jackson	Public Citizen	Evening Scoping Meeting
NAS-U	Matthew Kersey	Town of Louisa	Evening Scoping Meeting
NAS-V	Lisa Gue	Public Citizen	Evening Scoping Meeting
NAS-W	Dave Heacock	Dominion	Evening Scoping Meeting
NAS-X	Bill Bolin	Dominion	Evening Scoping Meeting
NAS-Y	Bill Murphey	Citizen of Louisa County	Evening Scoping Meeting
NAS-Z	Jerry Rosenthal	Concerned Citizens of Louisa	Email - Letter (ML013460243)
NAS-AA	John Wolfli	U.S. Fish and Wildlife Service	Letter (ML013460246)
NAS-AB	R. Edward Houck	Senate of Virginia	Letter (ML012920545)
NAS-AC	Honorable Eric Cantor	U.S. Congress	Letter (ML013650011)

(a) The afternoon and evening transcripts can be found under accession number ML013120266.

To maintain consistency with the scoping summary report (North Anna Power Station Scoping Summary Report, dated January 2, 2002), the unique identifier used in that report for each set of comments is retained in this report.

1 Specific comments were categorized and consolidated by topic. Comments with similar specific
2 objectives were combined to capture the common essential issues raised by the commenters.
3 The comments fall into one of several general groups. These groups include

- 4
- 5 • Specific comments that address environmental issues within the purview of the NRC
6 environmental regulations related to license renewal. These comments address
7 Category 1 or Category 2 issues or issues that were not addressed in the GEIS. They
8 also address alternatives and related Federal actions.
- 9
- 10 • General comments (1) in support of or opposed to nuclear power or license renewal or
11 (2) on the license renewal process, the NRC's regulations, and the regulatory process.
12 These comments may or may not be specifically related to the North Anna Power
13 Station license renewal application.
- 14
- 15 • Questions that do not provide new information.
- 16
- 17 • Specific comments that address issues that do not fall within or are specifically excluded
18 from the purview of NRC environmental regulations. These comments typically address
19 issues such as the need for power, emergency preparedness, current operational safety
20 issues, and safety issues related to operation during the renewal period.

21

22 Each comment applicable to this environmental review is summarized in this section. This
23 information, which was extracted from the North Anna Power Station Scoping Summary Report,
24 is provided for the convenience of those interested in the scoping comments applicable to this
25 environmental review. The comments that are general or outside the scope of the environmen-
26 tal review for North Anna Power Station are not included here. More detail regarding the
27 disposition of general or nonapplicable comments can be found in the summary report. The
28 ADAMS accession number for the summary report is ML020160608. This accession number is
29 provided to facilitate access to the document through the Public Electronic Reading Room
30 (ADAMS) <http://www.nrc.gov/reading-rm.html>.

31

32 The following pages summarize the comments and suggestions received as part of the scoping
33 process that are applicable to this environmental review, and discuss the disposition of the
34 comments and suggestions. The parenthetical alpha-numeric identifier after each comment
35 refers to the comment set (Commenter ID) and the comment number.

36

37 Comments in this section are grouped in the following categories:

- 38
- 39 1. Comments Concerning Category 1 Socioeconomic Issues
- 40 2. Comments Concerning Category 1 Air-Quality Issues

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- 1 3. Comments Concerning Category 1 Human Health Issues
- 2 4. Comments Concerning Aquatic Resource Issues
- 3 5. Comments Concerning Terrestrial Resource Issues
- 4 6. Comments Concerning Category 1 Postulated Accident Issues
- 5 7. Comments Concerning Category 1 Uranium Fuel Cycle and Waste Management Issues
- 6 8. Comments Concerning Category 2 Socioeconomic Issues
- 7 9. Comments Concerning Category 2 Aquatic Ecology Species Issues
- 8 10. Comments Concerning Category 2 Threatened and Endangered Species Issues

9

10 **1. Comments Concerning Category 1 Socioeconomic Issues**

11

12 As stated in 10 CFR Part 51, Table B-1, Category 1 socioeconomic issues include:

- 13
- 14 • Public services: public safety, social services, and tourism and recreation
- 15 • Public services: education (license renewal term)
- 16 • Aesthetics impacts (refurbishment)
- 17 • Aesthetics impacts (license renewal term)
- 18 • Aesthetics impacts of transmission lines (license renewal term).

19

20 **Comment:** We have found Dominion to be a very good corporate citizen. (NAS-A-1)

21

22 **Comment:** Dominion has proved to be a very good civic citizen, contributing both time and

23 financial resources. (NAS-A-4)

24

25 **Comment:** Dominion Power has for many years provided marketing material in economic

26 development. (NAS-B-2)

27

28 **Comment:** Their employees [Dominion] are also generous with their money. (NAS-C-7)

29

30 **Comment:** Virginia Power also has kept food on people's tables here, clothes on the children's

31 backs, helped the school system, given millions of dollars a year to needy families. (NAS-E-2)

32

33 **Comment:** Dominion quickly stepped forward with an offer to let us use their Visitor Center

34 facilities and, in addition, donated \$1,000 to us to assist in funding the program. (NAS-F-4)

35

36 **Comment:** We have a longstanding tradition at North Anna and Dominion of investing in our

37 communities. (NAS-J-15)

38

39 **Comment:** We [North Anna] are involved in community stewardship in many fronts. (NAS-K-4)

40

1 **Comment:** The new schools, many things that you see that we have developed in Louisa
2 County could not have happened if we did not have this additional revenue coming from the
3 power plant. (NAS-M-8)
4

5 **Comment:** Along with that, we have one of the nicest Little League ball diamonds in the State
6 of Virginia, and that was done through Dominion Power. (NAS-N-3)
7

8 **Comment:** Through the development of the water source needed to maintain water
9 temperatures, the Dominion Virginia Power has created one of the premier lakes in the State of
10 Virginia for all who enjoy various recreational activities. (NAS-P-9)
11

12 **Comment:** So they [North Anna] do lots of public service and volunteerism in our community.
13 (NAS-Q-3)
14

15 **Comment:** I have served the last two years as President of the Chamber of Commerce and
16 can tell you that we didn't have a more supportive member than Virginia Power. (NAS-S-1)
17

18 **Comment:** I'm personally in support of this, and on behalf of the Chamber of Commerce I can't
19 tell you that we've had a better neighbor or friend to our economic community. (NAS-S-2)
20

21 **Comment:** Their contributions through tax dollars enabled us to build three fine elementary
22 schools in the county. There have been expansions to the high school, the middle school, a
23 number of other public facilities. (NAS-U-2)
24

25 **Comment:** They've been a good corporate citizen. (NAS-U-3)
26

27 **Comment:** As mentioned several times tonight, we also pride ourselves at Dominion in an
28 active role in whatever community we are a part of, and North Anna is no exception. (NAS-X-3)
29

30 **Comment:** One that I'd like to highlight tonight of particular importance at North Anna is the
31 partnership with the Lake Anna State Park. (NAS-X-4)
32

33 **Comment:** Dominion Resources, through the Employee Volunteer Program, facilitates the
34 donation of tens of thousands of volunteer hours to projects which directly benefit the
35 communities where employees work and live. Financial support for civic and charitable
36 endeavors are provided as well. (NAS-AB-4)
37

38 **Comment:** Many of these [North Anna] employees routinely volunteer their time and resources
39 to help make their communities better places in which to live. The employee volunteer program
40 facilitates the donation of tens of thousands of volunteer hours to projects that directly benefit

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1 the communities in which the employees work and live. Financial support for civic and
2 charitable endeavors are provided as well. (NAS-AC-3)

3
4 **Comment:** Plant and marine life in Lake Anna are at healthy levels, and Lake Anna continues
5 to be a major recreational area and one of Virginia's outstanding freshwater fishing spots.
6 (NAS-AC-6)

7
8 **Response:** The comments are noted. The comments are supportive of license renewal at the
9 North Anna Power Station, Units 1 and 2. Public services were evaluated in the GEIS and
10 determined to be a Category 1 issue. Information regarding the impact on education will be
11 discussed in Chapter 4 of the SEIS.

12 13 **2. Comments Concerning Category 1 Air Quality Issues**

14
15 As stated in 10 CFR Part 51, Table B-1, Category 1 air quality issues include:

- 16
17 • Air-quality effects of transmission lines.

18
19 **Comment:** The primary advantage of a nuclear plant is that it doesn't produce any carbon --
20 doesn't emit any carbon dioxides, carbon monoxides, nitrous oxides, sulfur dioxides. All of
21 those things are not emitted at the plant during normal operation. (NAS-J-11)

22
23 **Comment:** So we don't have an impact for greenhouse gases like you might have from a
24 replacement plant, and that's one factor that goes into this decision. (NAS-J-12)

25
26 **Comment:** Thirdly, electricity provided from the North Anna Power Station is emission free
27 energy. (NAS-M-5)

28
29 **Response:** The comments are noted. Air quality impacts from plant operations were
30 evaluated in the GEIS and found to be minimal. These emissions are regulated through
31 permits issued by the U.S. Environmental Protection Agency and Virginia. Air Quality will be
32 discussed in Chapter 2 of the SEIS. The comments provide no new information and, therefore,
33 will not be evaluated further.

34 35 **3. Comments Concerning Category 1 Human Health Issues**

36
37 As stated in 10 CFR Part 51, Table B-1, Category 1 human health issues include:

- 38
39 • Radiation exposure to the public during refurbishment
- 40 • Occupational radiation exposure during refurbishment

- 1 • Microbiological organisms (occupational health)
- 2 • Noise
- 3 • Radiation exposures to public (license renewal term)
- 4 • Occupational radiation exposures (license renewal term).

5
6 **Comment:** We need to deal with the regular releases that come from the plant, the
7 radioactivity that is regularly vented off of the reactors. (NAS-G-10)

8
9 **Comment:** In terms of I heard the gentleman from Lake Anna Civic Association talk about all
10 of the things they're checking at the lake, but radioactivity was not one of them. That's seems
11 incongruous that they would be checking fecal samples, but next to a nuclear plant they're not
12 interested in checking for radioactivity in either the water, the fish, the algae? (NAS-G-11)

13
14 **Comment:** The Russian experience has shown over a long period of time a lot of the
15 radioactivity ends up sinking to the bottom in the mud. This type of stuff needs to be checked.
16 (NAS-G-12)

17
18 **Comment:** Power plants are not only poised on the brink of this kind of catastrophic accident
19 [Chernobyl] at all times, but also releasing routine amounts of radiation into the air and the
20 water. (NAS-H-4)

21
22 **Response:** The comments are noted. Impacts from routine radiological releases are
23 addressed in Chapters 2 and 4 of the SEIS. The comments provide no new information and,
24 therefore, will not be evaluated further.

25
26 **Comment:** It would be advantageous to have independent monitors, separate from the nuclear
27 power company itself or the Nuclear Regulatory Commission. Let's get some independent
28 monitors, and let's monitor the workers. What is the long-term health of the workers? Let's do
29 epidemiological studies. Let's monitor the community. Let's monitor the environment, all -- all
30 completely independently. (NAS-G-13)

31
32 **Comment:** I discussed the need for independent monitoring of the workers at the plant long
33 term, of the community long term, of the environment long term. This is independent, not just
34 what is done by the state and what is done by Virginia Power. (NAS-R-7)

35
36 **Comment:** There exists a need for independent monitoring of all environmental matters -- air,
37 water, lake bottom, vegetation. (NAS-Z-18)

38
39 **Comment:** There should be independent monitoring of workers' health and community health
40 (epidemiological studies over time). These should be funded by the utility and overseen by

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1 completely independent (not utility or state or federal) professionals. This requirement in a
2 license renewal will help provide greater public trust in the process. Has there been a problem
3 in the past? YOU BET! (NAS-Z-19)
4

5 **Response:** The comments are noted. Radiation exposure to the public and workers was
6 evaluated in the GEIS and determined to be a Category 1 issue. The requirements for
7 monitoring of the environment are beyond the scope of license renewal. The NRC requires the
8 licensee to routinely conduct radiological monitoring of all plant effluents, as well as foodstuffs
9 and biota. The NRC also communicates with permitting agencies that administer the Clean
10 Water Act and the Clean Air Act, State radiological agencies, the Fish and Wildlife Service, and
11 other organizations. Any potential noncompliance of monitoring requirements is an operational
12 safety issue, handled through the inspection and reporting process, and is therefore beyond the
13 scope of license renewal. The comments provide no new information, and do not pertain to the
14 scope of license renewal as set in 10 CFR Part 51 and Part 54. Therefore they will not be
15 evaluated further.
16

17 **4. Comments Concerning Aquatic Resource Issues**
18

19 **Comment:** Dominion biologists regularly monitor the health of the fish in Lake Anna.
20 (NAS-C-5)
21

22 **Comment:** After the lake was created and flooded, they monitored the aging or maturing of the
23 lake for over 20 years on a continuous basis at a number of sampling points to insure that no
24 negative impacts were developing. (NAS-F-1)
25

26 **Comment:** The formation of Lake Anna immediately improved conditions in the Contrary Creek
27 arm of the lake, as well as the North Anna River below the dam. (NAS-X-2)
28

29 **Response:** The comments are noted. Aquatic ecology will be discussed in Chapters 2 and 4
30 of the SEIS. The comments provide no new information and, therefore, will not be evaluated
31 further.
32

33 **Comment:** Page 2-2. The Service is concerned with the impacts to fish and aquatic
34 vegetation (Issue # 3 & 19) associated with the structures described as, "In addition to the two
35 nuclear reactors, their turbine building, intake structure, discharge canal, and auxiliary
36 buildings." Our concerns also include the impacts of dams on the passage and distribution of
37 fish and mussel species. (NAS-AA-1)
38

39 **Comment:** P. 2-8. What is your reference for a healthy fish population stated in, "Reservoirs
40 like Lake Anna with healthy populations of "landlocked" small shad and herring (Lake Anna has

1 both threadfin shad (*Dorosoma petenense*) and blueback herring (*Alosa aestivalis*), are often
2 dominated by small-bodied zooplankters (rotifers and copepods), because larger-bodied forms
3 are selectively preyed upon by schooling clupeids (Ref. 2.2-11)." (NAS-AA-2)
4

5 **Comment:** Page 2-9. How do you account for the reduction in abundance of yellow perch,
6 black crappie, pumpkinseed sunfish and an increase in other species of fish as stated in "The
7 community structure remained relatively stable over the 1975-1985 period, with some year-to-
8 year variation in species composition caused by: (1) normal population fluctuations; (2)
9 reservoir aging; (3) the introduction of forage species and competing predators; (4) the
10 installation of fish attractors and artificial habitat; and (5) the increase in Corbicula densities.
11 Post-1975 changes included: (1) a decline in relative abundance of yellow perch (*Perca*
12 *flavescens*) and black crappie (*Promoxis nigromaculatus*); (2) an increase in relative abundance
13 of white perch (*Morone americana*) and threadfin shad; and (3) an increase in redear sunfish
14 (*Lepomis microlophus*) abundance, with a corresponding decrease in pumpkinseed (*Lepomis*
15 *gibbosus*). None of these changes appeared to be related to NAPS operation." (NAS-AA-3)
16

17 **Response:** The comments/questions are noted. They do not provide any new information.
18 However, NRC plans to discuss these issues further with the Fish and Wildlife Service (FWS)
19 because it is a cognizant Federal agency.
20

21 **Comment:** Page 2-10. There continues to be disagreement between the scientific community
22 as to the historical range of anadromous fish spawning habitat in the North Anna River.
23 American shad, hickory shad, blueback herring, sea lamprey, and American eel are reported to
24 migrate to the base of the Ashland Mill Dam on the South Anna River. The VEPCo report
25 states, "Four non-native fish species (striped bass, walleye, threadfin shad, and blueback
26 herring) have been stocked in Lake Anna by the Virginia Department of Game & Inland
27 Fisheries since 1972. Striped bass were introduced in 1973, and have been stocked annually
28 since 1975. They provide a "put-grow-and-take" fishery; streams, including the North Anna
29 River that flow into Lake Anna lack the flow, depth, and length to support striped bass spawning
30 runs. Studies show that striped bass grow and provide a substantial recreational fishery in
31 Lake Anna, but adults are subject to late-summer habitat restrictions (limited to cooler-water
32 refuge areas) and growth limitations. Walleye are also stocked annually by the Virginia
33 Department of Game & Inland Fisheries and are highly sought-after game fish. Threadfin shad
34 were introduced in 1983 to provide additional forage for striped bass and other top-of-the-food-
35 chain predators. This species is vulnerable to cold shock and winter kills, and would not be
36 able to survive in Lake Anna if it were not for NAPS operation. Threadfin shad appear to be
37 thriving in Lake Anna and are an important source of food for game fish. Blueback herring, fish
38 stocked by the Virginia Department of Game & Inland Fisheries in 1980 as a forage species,
39 have not been as successful. A fifth non-native species, the herbivorous grass carp, was
40 stocked by Dominion (with the approval of the Virginia Department of Game & Inland Fisheries)

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1 in the WHTF in 1994 to control growth of the nuisance submersed aquatic plant hydrilla
2 (*Hydrilla verticillata*)." (NAS-AA-4)
3

4 **Comment:** Page 2-11. The water flow in the North Anna River System changed drastically
5 after the impoundment was created. The reduction in river flow from Lake Anna during the
6 Spring spawning migration may limit the range of anadromous and riverine species of fish in the
7 river. The report describes the river as, "The North Anna River joins the South Anna River
8 23 miles downstream from the North Anna Dam, forming the Pamunkey River. Before 1972,
9 when the river was impounded, flows varied considerably (1 to 24,000 cfs) from year to year
10 and water quality was degraded by acid mine drainage from Contrary Creek. After 1972,
11 fluctuations in flow were moderated (40 to 16,000 cfs from 1972 through 1985) and water
12 quality was improved as a result of reclamation activities at the Contrary Creek mine site and
13 the acid-neutralizing effect of Lake Anna's waters. Water quality downstream from the North
14 Anna Dam is strongly influenced by conditions in the reservoir and releases at the Dam. Water
15 moving from Lake Anna to the North Anna River is less turbid and more chemically stable than
16 the pre-impoundment flow. Dissolved oxygen levels are high (averaging 9.6 milligrams per liter
17 over the 1981-1985 period) immediately downstream of the Dam and increase further
18 downstream, presumably as a result of turbulent mixing (Ref. 2.2-3). Summer water
19 temperatures from 1970-1985 were higher near the Dam than downstream, reflecting
20 temperatures in the reservoir. The highest water temperature recorded in pre-operational years
21 was 89.4°F in July 1977, at a station one kilometer below the North Anna Dam. The highest
22 temperature recorded in operational years was slightly higher, 90.9°F, recorded in August 1983
23 at the same station." Each of these flow related impacts warrant additional river flow study.
24 (NAS-AA-5)
25

26 **Comment:** Page 3-15. The Service believes the North Anna Hydroelectric project and the
27 dam may be causing significant impacts to the North Anna River and the results from earlier
28 studies should be reevaluated. The report states, "An exemption from licensing (Ref. 3.5-1)
29 was filed with the Federal Energy Regulatory Commission (FERC) in March 1984; an order
30 granting the exemption was issued in September 1984. As part of the exemption from licensing
31 by FERC, the U.S. Fish and Wildlife Service requested that Dominion perform pre-operational
32 and operational fish passage studies to evaluate the need for intake screening. Studies were
33 conducted in 1986, 1987, and 1988 (Ref. 3.5-3). Results of these studies indicated that the
34 number of fish passing from Lake Anna to the North Anna River was minimal (Ref. 3.5-4).
35 (NAS-AA-6)
36

37 **Response:** The comments are noted. The comments relate to impacts associated with the
38 construction or operation of the North Anna Dam. Construction impacts are beyond the scope
39 of this review. Operational impacts during the license renewal term will be addressed in the
40 SEIS.

1 **Comment:** Page 2-12. The Service's main goal is the protection and restoration of
2 ecosystems for people. During a license review, the Service' mitigation goal is to work with the
3 license applicant to avoid, minimize, and compensate (in that order) to the fullest extent
4 possible. The National Environmental Policy Act calls for past, present, and future
5 environmental impacts be identified, as well as summarized to determine cumulative effects of
6 the environmental impacts. The VEPCo report clearly identifies ecosystem impacts, but the
7 Service disagrees with VEPCo's conclusion regarding fish and the ecosystem. The report
8 states, "In pre-impoundment surveys, the fish community of the North Anna River downstream
9 from the Contrary Creek inflow was dominated by pollution-tolerant species. In the years
10 following impoundment (and reclamation of the Contrary Creek mine site), there was a steady
11 increase in measures of abundance and diversity (species richness) of fish. In 1984-85, 38
12 species from 10 families were found in the North Anna River, compared to 25 species from
13 eight families in the control stream, the South Anna River. When reservoir species from Lake
14 Anna were subtracted from the North Anna River totals, the two fish communities showed
15 striking similarities, indicating that operation of NAPS has had little or no effect on fish
16 populations downstream from the North Anna Dam." "Based on the 1999 Annual Report for
17 Lake Anna and the North Anna River, the North Anna River downstream of the North Anna
18 Dam has no major changes in the ecosystem (Ref. 2.2-10). A review of the data from the 1999
19 monitoring studies indicate that Lake Anna and the North Anna River continue to contain
20 healthy, well-balanced ecological communities." (NAS-AA-16)

21
22 **Response:** The comment is noted. The comment relates to cumulative impact issues and will
23 be considered in the preparation of the SEIS. Aquatic resources are discussed in Chapters 2
24 and 4 of the SEIS.

25
26 **Comment:** Page 6-2. The Service believes many of the impacts discussed above will fall
27 under this policy [mitigation]. We do not agree that all impacts of license renewal are small and
28 would not require mitigation. The current operations do include some mitigation activities that
29 would continue during the term of the license renewal, but additional efforts in the areas of
30 fisheries, water quality, and possibly endangered species will protect and enhance the natural
31 resources in Lake Anna and North Anna River. As stated, Dominion performs routine mitigation
32 and monitoring activities associated with environmental permits to ensure the safety of workers,
33 the public, and the environment. These activities include the radiological environmental
34 monitoring program, continuous emission monitoring, monitoring of aquatic biota that could be
35 affected by NAPS operation, effluent chemistry monitoring, and effluent toxicity testing." As the
36 NRC's statutory requirements state, "The report must contain a consideration of alternatives for
37 reducing adverse impacts...for all Category 2 license renewal issues.... 10 CFR 51.53(c)(3)(iii).
38 The environmental report shall include an analysis that considers and balances...alternatives
39 available for reducing or avoiding adverse environmental effects.... 10 CFR 51.45(c) as
40 incorporated by 10 CFR 51.53(c)(2)." (NAS-AA-17)

1 **Response:** The comment is noted. Mitigation will be considered for all Category 2 issues that
2 are applicable. [For Category 1 issues, Table B-1 in Subpart A of Part 51 states that mitigation
3 has been considered in the staff's analysis of these issues, and it has been determined that
4 additional plant-specific mitigation measures are not likely to be sufficiently beneficial to warrant
5 implementation. Unless the staff finds new and significant information in relation to these
6 issues, the NRC will adopt the conclusion from Table B-1.] The comment did not provide any
7 new information. However, the NRC plans to discuss this issue further with FWS because it is
8 a cognizant Federal agency.

9
10 **5. Comments Concerning Terrestrial Resource Issues**

11
12 **Comment:** The Company [Dominion] has adopted policies that are compatible with protecting
13 our natural resources. They work to protect all migratory birds with policies and procedures
14 from the U.S. Department of Wildlife. (NAS-C-4)

15
16 **Response:** The comment is noted. Terrestrial resources will be discussed in Chapter 2 of the
17 SEIS. The comment supports North Anna Power Station, Units 1 and 2. The comment
18 provides no new information and, therefore, will not be evaluated further.

19
20 **6. Comments Concerning Postulated Accident Issues**

21
22 As stated in 10 CFR Part 51, Subpart A, Appendix B, Table B-1, design basis accidents is the
23 only Category 1 issue associated with postulated accidents. For severe accidents (i.e., beyond
24 design basis accidents), the staff concluded that the probability-weighted environmental conse-
25 quences from severe accidents are small for all plants, but that alternatives to mitigate severe
26 accidents must be considered for all plants that have not considered such alternatives. See
27 10 CFR 51.53(c)(3)(ii)(L).

28
29 **Comment:** There are earthquake fault lines under the storage pools. What would happen if
30 there were an earthquake and the pools leaked? (NAS-Z-11)

31
32 **Comment:** Any environmental study must include the possibilities of a substantial release of
33 radioactivity due to: 3) earthquake greater than 6.5 on the Richter scale, and its effects,
34 specifically on the storage pools which are on a known earthquake fault line; tornadoes.
35 (NAS-Z-23)

36
37 **Response:** The comments are noted. Severe accidents, including events initiated by
38 earthquakes and tornadoes, were evaluated in the GEIS and the impacts were determined to
39 be small for all plants. A site-specific analysis of Severe Accident Mitigation Alternatives for
40 North Anna will be performed by the NRC staff within this environmental analysis. The

1 comments provide no new information and will not be evaluated further in the context of the
2 environmental review.

3
4 **7. Comments Concerning Category 1 Uranium Fuel Cycle and Waste Management**
5 **Issues**

6
7 As stated in 10 CFR Part 51, Table B-1, Category 1 uranium fuel cycle and waste management
8 issues include:

- 9
10 • Offsite radiological impacts (individual effects from other than the disposal of spent fuel
11 and high-level waste)
12 • Offsite radiological impacts (collective effects)
13 • Offsite radiological impacts (spent fuel and high-level waste)
14 • Nonradiological impacts of the uranium fuel cycle
15 • Low-level waste storage and disposal
16 • Mixed waste storage and disposal
17 • Onsite spent fuel
18 • Nonradiological waste.

19
20 **Comment:** There is the issue of the high level nuclear waste that is generated through the
21 process of irradiating the fuel, and at this point there is no known way to safely dispose of high-
22 level nuclear waste. (NAS-H-5)

23
24 **Comment:** Just (operating) the North Anna Power Plant for the 20 years that's being proposed
25 would result in an additional 400 metric tons of high level waste being added to the mix, the mix
26 being already a mounting stockpile with no solution in sight. (NAS-H-6)

27
28 **Comment:** The issue of high-level waste needs to be looked at as a very severe environmental
29 impact and at this point an unsolvable environmental impact of nuclear power. (NAS-H-15)

30
31 **Comment:** The county has an agreement with Virginia Power limiting how much storage space
32 they can use on the dry cask, which could be a limiting factor in extending the life of the plant.
33 So that's something that needs to be looked at. (NAS-R-3)

34
35 **Comment:** We need to talk about high and low level waste. The high level waste has not been
36 moved, Yucca Mountain, or a storage place hasn't been done. The regional low-level waste
37 compact is bankrupt, and we're sitting -- there are hundreds of tons of low-level waste sitting on
38 the shores of Lake Anna. (NAS-R-9)

Appendix A

1 **Comment:** Further, each operating nuclear reactor generates about 20 metric tons of high-
2 level nuclear waste annually. Relicensing North Anna would add 800 metric tons of waste to
3 the nation's mounting waste stockpile, which already poses health, safety, and environmental
4 concerns. (NAS-T-5)
5

6 **Comment:** That dump [Yucca Mountain in Nevada] would not be able to accommodate the
7 additional volume of waste from relicensed reactors, such as North Anna. (NAS-T-6)
8

9 **Comment:** Dry cask storage has been the answer to the waste problem at the plant. That
10 multiplies our exposure, and a 20-year extension on the license will only extend our possibilities
11 for exposure. So this issue needs to be dealt with. (NAS-U-6)
12

13 **Comment:** I know the NRC cannot make policy on how to deal with radioactive spent fuel, but
14 this is an issue that has been talked about and discussed and waffled back and forth for at least
15 25 years, and we still sit at the same position we did that many years ago with a very limited
16 policy and no long-range plan. (NAS-U-7)
17

18 **Comment:** First and foremost are the issues of high and low level radioactive wastes. It is
19 philosophically impossible to divorce the matters of waste from the operations of the plants or
20 from the consideration of license renewal for extended operation. One cannot logically say that
21 this matter is being taken care of in another venue when it clearly is not; in spite of repeated
22 attempts by the NRC, the Congress, the nuclear industry, the DOE, the DOD, and others over
23 many, many years, there is not, nor will there be in the near future, a permanent repository for
24 the tons of high level wastes that are already stored and continue to be generated annually by
25 this and other nuclear power plants. Because there currently is no approved off-site storage for
26 the high level wastes, and even under the most optimistic forecasts of the NRC and utilities,
27 these wastes will not be completely moved by either the original end date of the license, or even
28 by the new end date (if the renewal is approved), the multiple matters of the storage of these
29 wastes on site must be considered. Further, logic dictates that no renewal should even be
30 considered unless and until the ultimate disposal has been approved and the facility(ies) open
31 and operational. To ignore this fundamental issue in this relicensing matter is a fundamental
32 flaw in the process. (NAS-Z-1)
33

34 **Comment:** One must consider the low level wastes that are stored on site and continue to be
35 generated. The Congressional mandate for the radioactive material generating states to band
36 into regional compacts has been reduced to a shambles in the case of Virginia and the North
37 Anna Power Station. There is no compact, no agreement, no plan. Barnwell has set a cut off
38 date. Hundreds of tons of low-level waste sit next to Lake Anna (mostly in the form of the old
39 discarded generators) without a reasonable expectation of how, where, or when they will be
40 disposed of properly. (NAS-Z-2)

1 **Comment:** The County and VA Power have an agreement concerning the use of dry cask
2 storage. The County may deny further pad construction. If there is no place to put the high
3 level wastes, is it prudent to approve license renewal? How much space would it take to hold
4 all the wastes if there is no permanent repository? Is there space available? Where?
5 (NAS-Z-13)
6

7 **Comment:** With North Carolina dropping out, the Southeastern Compact is dead. Barnwell
8 has put an end date on accepting out of state rad waste. Where will these wastes go? When?
9 When will the generators be cut up and disposed? What would be the effect if a tornado hit the
10 stored generators and threw them into the Lake? Is any low level waste now being disposed of
11 in the local landfill? How much? What are the environmental effects? (NAS-Z-15)
12

13 **Comment:** There has been open discussion, in light of the federal government's failure to
14 provide an environmentally safe permanent repository for the spent fuel, that the title of these
15 high level wastes be given to the DOE and the DOE be responsible for the wastes on site. This
16 matter must be seriously considered. The DOE has an unblemished record of failure in dealing
17 with all matters nuclear. Every facility has serious environmental problems. Granting a license
18 renewal to the utility, with the possibility of the DOE operating on site, is very, very, very risky.
19 (NAS-Z-16)
20

21 **Response:** Onsite storage of spent nuclear fuel is a Category 1 issue. The safety and
22 environmental effects of long-term storage of spent fuel onsite have been evaluated by the
23 NRC and, as set forth in the Waste Confidence Rule (10 CFR 51.23), the NRC generically
24 determined that such storage could be accomplished without significant environmental impact.
25 In the Waste Confidence Rule, the Commission determined that spent fuel can be stored onsite
26 for at least 30 years beyond the licensed operating life, which may include the term of a
27 renewed license. At or before the end of that period, the fuel would be moved to a permanent
28 repository. The "Generic Environmental Impact Statement for License Renewal of Nuclear
29 Plants (GEIS)," NUREG-1437 is based upon the assumption that storage of the spent fuel
30 onsite is not permanent. The plant-specific supplement to the GEIS that will be prepared
31 regarding license renewal for the North Anna Power Station, Units 1 and 2, will be based on the
32 same assumption.
33

34 Likewise, the matter of processing and storage of low-level waste is considered a Category 1
35 issue. The conclusion regarding this issue in the GEIS included consideration of the long-term
36 storage of low level waste on site during the license renewal term. The comments provide no
37 new information and, therefore, will not be evaluated further.
38

39 **Comment:** We have the issue of MOX [mixed oxide fuel]. (NAS-G-5)
40

Appendix A

1 **Comment:** If MOX is used at the plant, the protocol of an accident changes, and we're set with
2 hot spots on the core. (NAS-G-6)

3
4 **Comment:** Virginia Power has not signed out of the MOX agreement. While they've said
5 they're not going to use it, they're in agreement with the DOE, and they haven't signed out of
6 the agreement. They're still in it. (NAS-G-7)

7
8 **Comment:** We talked about MOX, that Virginia Power had flip-flopped on MOX, gone back
9 and forth. It now says they don't want to use it, but a profile needs to be used if they're going to
10 bring in weapons grade plutonium MOX and use it here at the plant. (NAS-R-4)

11
12 **Comment:** VA. Power had been asked at one of the annual meetings if they planned to use
13 MOX fuel at North Anna. W.R. Matthews, then Station Manager and now Senior Vice-
14 President, Nuclear Operations, wrote to the Board of Supervisors and to me, specifically stating
15 that they would not use MOX. Within two years they reversed course and signed with the DOE,
16 Duke and Cogema to participate in the US MOX program at North Anna. Subsequently they
17 announced they were dropping the MOX program for North Anna. In a meeting of the dry cask
18 committee, representatives of VA Power admitted to me and members of the Board of
19 Supervisors that they only dropped the MOX program for public relations reasons in order to
20 satisfy the public and regulators in Connecticut while they were buying Millstone Nuclear Power
21 Plant. They have not ended their contractual agreement with the DOE yet. With a clear
22 message that VA Power is untrustworthy on this specific issue, MOX must be considered in this
23 license renewal. The releases in the event of any accident would be different if MOX were
24 being used; storage issues, in both the pools and the dry casks, are different. The long term
25 effects on the core, including hot spots and extra plutonium in the rods, must be considered.
26 Without going into greater scientific detail (all of which is easily available), MOX considerably
27 alters both operations and potential accidents. (NAS-Z-8)

28
29 **Response:** The comments are noted. At the time the VEPCo application for North Anna
30 license renewal was submitted, the licensee stated that MOX fuel was not going to be
31 considered for North Anna. The licensee's withdrawal from the Department of Energy's
32 Plutonium Disposition Project (the source of the MOX fuel) is documented in a letter to the NRC
33 dated April 24, 2000. To date that position has not changed. However, even if VEPCo were to
34 consider using MOX fuel in the future, any evaluation of the associated application would be an
35 operational issue and not one for license renewal. If the North Anna licenses are renewed and
36 a future application for the use of MOX fuel is received, the staff's review would consider the
37 period of the renewed licenses. The comments provide no new information, and do not pertain
38 to the scope of license renewal as set forth in 10 CFR Part 51 and Part 54 and will not be
39 considered further.

40

8. Comments Concerning Category 2 Socioeconomic Issues

As stated in 10 CFR Part 51, Table B-1, Category 2 socioeconomic issues are:

- Housing
- Public services: public utilities
- Public services: education (refurbishment)
- Offsite land use (refurbishment)
- Offsite land use (license renewal term)
- Public services: transportation
- Historic and archaeological resources.

Comment: The biggest contribution that Dominion makes is in regard to our employment and tax base. (NAS-A-5)

Comment: Dominion is, by far, the largest employer in the county, employing over 900 people, and it contributes over \$12 million a year in real property tax. (NAS-A-6)

Comment: North Anna Power Station is a good economic development partner. (NAS-B-1)

Comment: The financial benefits are extremely attractive to the county. (NAS-C-1)

Comment: The combined salaries reach almost \$50 million, which contributes significantly to our local economy. (NAS-C-2)

Comment: They paid last year ten and a half million dollars to the County of Louisa, and since the inception, they have paid \$160 million in taxes to the County of Louisa. (NAS-C-3)

Comment: North Anna desires to be a good corporate citizen, and they've proven to be one. (NAS-C-6)

Comment: This facility has had a tremendous economic benefit to the citizens of Orange County and its other surrounding counties. (NAS-D-2)

Comment: We have 300 of our employees that live in Louisa, and then we have almost 900 people who work at the plant, and then during outages, we bring another eight or 900 people in from other locations to work for up to a month at North Anna. (NAS-J-16)

Comment: All of the people [North Anna employees] live in the local community; support the local community and the restaurants here. (NAS-J-17)

Appendix A

1 **Comment:** Other site-specific issues that we [North Anna] looked at included socioeconomic
2 impacts. We found positive contribution to the local infrastructure. (NAS-K-10)

3
4 **Comment:** This generation contributes to the economy of Virginia and the counties in which
5 they operate. (NAS-M-6)

6
7 **Comment:** Fourthly, since 1966, Dominion Resources, North Anna Power Company, has paid
8 approximately \$160 million in property taxes to Louisa County. (NAS-M-7)

9
10 **Comment:** So the employees in the town that work at Dominion Power and the money that is
11 made there that comes back through, and they get gas at the gas station, and they run by and
12 get a loaf of bread on their way home. (NAS-N-2)

13
14 **Comment:** Through the availability of the tax base assessed on the North Anna Power Plant,
15 the county has been available and able to provide services, which could only have been
16 accomplished through double and triple taxation on the citizens that are already here without
17 North Anna's help. (NAS-P-6)

18
19 **Comment:** The North Anna Power plant employs more than 825 people of which a large
20 number consists of Louisa County citizens and town citizens, which in turn share their salaries
21 with many of the businesses in the town and county. (NAS-P-7)

22
23 **Comment:** The biggest [way North Anna contributes], of course, is the tax dollars, over
24 \$10 million a year. (NAS-Q-2)

25
26 **Comment:** Dominion Power has 825 employees, I believe. About a third of those are from
27 Louisa County. So a lot of our citizens work there and rely on that. (NAS-Q-4)

28
29 **Comment:** Just recently I had over 830 people at North Anna in addition to the normal
30 workers. Those people all live in Louisa and in Mineral. They spend their money here. They
31 spend time in the restaurants, hotels, food stores, and so forth, and they are part of the
32 community. They may come and go, but they're part of the community for that short period of
33 time. (NAS-W-3)

34
35 **Comment:** We [North Anna] looked at site specific issues including socioeconomic impacts.
36 (NAS-X-11)

37
38 **Comment:** With regard to socioeconomic impacts, we [North Anna] found positive contribution
39 to the local infrastructure. (NAS-X13)

40

1 **Comment:** Over 900 persons are employed at the station, making it one of the largest
2 employers in the area. (NAS-AB-2)

3
4 **Response:** The comments are noted. Socioeconomic issues specific to the plant are Category
5 2 issues and will be addressed in Chapter 4 of the SEIS. The comments support license
6 renewal at the North Anna Power Station, Units 1 and 2.

7
8 **Comment:** Many of the speakers praised VA Power for its positive economic effects on the
9 community and the taxes paid. What would be the effect if the plant did not get a license
10 renewal? How would the County budget be affected? What would happen to land and house
11 values? On the same course, what would happen if there were an accident at the plant? What
12 would happen to land and house values? How much insurance does VA Power have, and who
13 and what would it cover? (NAS-Z-25)

14
15 **Response:** Socioeconomic factors of license renewal are considered as a Category 2 issue in
16 the GEIS and therefore are looked at site specifically and will be discussed in the plant-specific
17 supplement to the GEIS for North Anna license renewal. No new information was provided by
18 the comment. Therefore it will not be evaluated further.

19
20 **Comment:** Other site-specific issues that we [North Anna] looked at included impacts on
21 cultural resources. Because there will be no new construction activity, continued operation of
22 the station means that the cultural resources impacts are also negligible. (NAS-K-12)

23
24 **Comment:** Other site-specific issues that we [North Anna] looked at included impacts on
25 cultural resources. Because there will be no new construction activity, continued operation of
26 the station means that the cultural resources impacts are also negligible. (NAS-X-12)

27
28 **Response:** The comments are noted. Historic and archaeological resources are considered a
29 Category 2 issue and will be discussed in Chapters 2 and 4 of the SEIS. The comment
30 provides no new information and, therefore, will not be evaluated further.

31 32 **9. Comments Concerning Category 2 Aquatic Ecology Issues**

33
34 As stated in 10 CFR Part 51, Table B-1, Category 2 aquatic ecology and threatened and
35 endangered species issues are:

- 36 • Entrainment of fish and shellfish in early life stages
- 37 • Impingement of fish and shellfish
- 38 • Heat shock.

Appendix A

1 **Comment:** Page 4-6. The Service is concerned with impacts from entrainment of fish and
2 shellfish in early life stages that occur at most power plants. In light of fish passage measures
3 that may be prescribed to mitigate these impacts, this issue should be evaluated for the current
4 and post restoration fish community. The report states, "Section 316(b) of the CWA requires
5 that any standard established pursuant to Sections 301 or 306 of the CWA shall require that the
6 location, design, construction, and capacity of cooling water intake structures reflect the best
7 technology available for minimizing adverse environmental impacts (33 USC 1326). Entrain-
8 ment through the condenser cooling system of fish and shellfish in the early life stages is one of
9 the adverse environmental impacts that the best technology available minimizes. Virginia State
10 Water Control Board regulations provide that compliance with a Virginia Pollutant Discharge
11 Elimination System (VPDES) permit constitutes compliance with Sections 301 and 306 of the
12 CWA (Ref. 4.2-1). In response to Board requirements, Dominion submitted a CWA Section
13 316(b) demonstration for NAPS in May 1985 (Ref. 4.2-2). Based on this and other input, the
14 Board issued the NAPS VPDES Permit (Appendix B). Issuance of the NAPS VPDES permit
15 indicates the Board's conclusion that NAPS, is operating in conformance with the permit, would
16 be in compliance with the CWA requirements (Commonwealth of Virginia 2001). Dominion
17 concludes that the Commonwealth regulation and the NAPS VPDES permit constitute the
18 NAPS CWA 316(b) determination. Dominion also concludes that any environmental impact
19 from entrainment of fish and shellfish in early life stages is small and does not require further
20 mitigation." (NAS-AA-7)

21
22 **Comment:** Page 4-8. The Service agrees with the NRC that concludes that impingement of
23 fish and shellfish is a significant issue. "NRC made impacts on fish and shellfish resources
24 resulting from impingement a Category 2 issue because it could not assign a single significance
25 level to the issue." The Service believes the impacts will likely require mitigation. The report
26 states, "Impingement impacts are small at many plants, but might be moderate or large at other
27 plants (Ref. 4.0-1, Chapter 4.2.2.1.3). Information to be ascertained includes: (1) type of
28 cooling system (whether once-through or cooling pond), and (2) current CWA 316(b)
29 determination or equivalent state documentation. As Chapter 3.1.2 describes, NAPS has a
30 once-through heat dissipation system. Chapter 4.2 discusses the CWA 316(b) demonstration
31 for NAPS, indicating compliance with the use of best available technology. Chapter 2.5 also
32 states that no federally- or state listed fish species have been collected in any monitoring
33 studies, nor has any listed species been observed in creel surveys conducted by Dominion
34 biologists and affiliated researchers. Based on the results of the CWA 316(b) Demonstration,
35 Dominion concludes that this environmental impact is small. (NAS-AA-8).

36
37 **Comment:** Page 2-6. The Service is concerned with water quality and aquatic habitat impacts
38 from thermal discharges, the canal systems, and the Waste Heat Treatment Facilities
39 (Issues # 5, 18, & 44). The report described the conditions as, "Since its creation, Lake Anna
40 has developed into a reservoir with three distinct ecological zones: Upper Lake, Mid-Lake, and

1 Lower Lake. The Upper Lake is essentially riverine, shallow (average depth of 13 feet), and
2 shows some evidence of stratification in summer. The Mid-Lake is deeper and stratifies in
3 summer. It receives waters from Contrary Creek that, because of years of mining in its
4 floodplain, are sometimes low in pH and high in metals. As noted earlier in this chapter,
5 creation of Lake Anna has reduced the impacts of acid mine drainage on the North Anna River.
6 The Lower Lake is deeper (average depth of 36 feet), clearer (with more light penetration), and
7 shows pronounced annual patterns of winter mixing and summer stratification. The epilimnion
8 (warm layer above the thermocline) was generally eight feet deep during pre-operational years,
9 and 26 to 33 feet deep during operational years. The increase in depth of the epilimnion
10 appears to be related to the heated discharge entering the reservoir from dike 3 (see Figure 3-
11 2) and the withdrawal of cooler, deeper water at the NAPS intake (Ref. 2.2-3).” (NAS-AA-9)

12
13 **Comment:** Page 2-7. The VEPCo report continues to describe adverse thermal effect on
14 aquatic organisms, “Results of Lake Anna temperature monitoring indicate that the shallower
15 Upper Lake warms earlier in spring and reaches maximum temperature in summer sooner than
16 the Lower Lake. The Lower Lake, with its greater depth and volume, warms more slowly in
17 spring and retains its heat later in the year. It is estimated that the heat contributed by NAPS
18 corresponds to about 10 percent of the solar heat that enters the reservoir on summer days
19 (Ref. 2.2-3)”. (NAS-AA-10)

20
21 **Comment:** Page 2-7. The Service would like to review the water temperature ranges from the
22 report “Dominion’s Environmental Policy & Compliance-Environmental Biology group submits
23 annual reports to the Virginia Department of Environmental Quality on water temperatures and
24 fisheries monitoring in Lake Anna and the Lower North Anna River.” Specifically, the water
25 temperature data from the month of August, 1983, when the mean water temperature was
26 greater than 88°F. (NAS-AA-11)

27
28 **Comment:** Page 4-9. As the NRC states, the Service believes heat shock impacts are
29 important and need to be mitigated to the fullest extent possible. The report states, “NRC made
30 impacts on fish and shellfish resources resulting from heat shock a Category 2 issue, because
31 of continuing concerns about thermal discharge effects and the possible need to modify thermal
32 discharges in the future in response to changing environmental conditions (Ref. 4.0-1,
33 Chapter 4.2.2.1.4). Information to be ascertained includes: (1) type of cooling system (whether
34 once-through or cooling pond), and (2) evidence of a CWA Section 316(a) variance or
35 equivalent state documentation. As Chapter 3.1.2 describes, NAPS has a once-through heat
36 dissipation system. As discussed below, Dominion has a Section 316(a) variance for NAPS
37 discharges. Section 316(a) of the CWA establishes a process whereby a thermal effluent
38 discharger can demonstrate that thermal discharge limitations are more stringent than
39 necessary and, using a variance, obtain alternative facility-specific thermal discharge limits (33
40 USC 1326). Dominion submitted a CWA Section 316(a) Demonstration for NAPS to the

Appendix A

1 Virginia State Water Control Board on June 24, 1986 (Ref. 4.4-1). The Fact Sheet (Item 22)
2 accompanying the current NAPS VPDES permit (Appendix B) refers to this submittal, indicating
3 that effluent limitations more stringent than the thermal limitations included in the permit are not
4 necessary to assure the protection and propagation of a balanced indigenous community of
5 shellfish, fish, and wildlife in Lake Anna and in the North Anna River downstream of the Lake.
6 Based on the results of the CWA Section 316(a) Demonstration and the NAPS VPDES permit,
7 Dominion concludes that this environmental impact is small and does not warrant further
8 mitigation.” (NAS-AA-12)

9
10 **Comment:** We [North Anna] also designed and constructed a series of three cooling lagoons
11 totaling 3,400 surface acres, designated as the waste heat treatment facility. (NAS-K-2)

12
13 **Comment:** We [North Anna] conducted a study that looked at the impacts of this waste heat
14 on the biota of Lake Anna. Using past information, coupled with new information, we found no
15 long-term deleterious effects, and the Virginia State Water Control Board, which is now the
16 Department of Environmental Quality, agreed with our findings. (NAS-K-7)

17
18 **Comment:** We [North Anna] studied water withdrawal issues, and again, we demonstrated no
19 long-term deleterious effects on the lake, and the Water Board again concurred with our
20 findings. (NAS-K-8)

21
22 **Comment:** In the mid-'80s, we conducted a study that looked at the impacts of this waste heat
23 on the biota of Lake Anna. Using past information coupled with new information, we found no
24 long-term deleterious effects, and the Virginia State Water Control Board, which is now called
25 the Department of Environmental Quality, agreed with our findings. (NAS-X-8)

26
27 **Comment:** We [North Anna] looked at water withdrawal, which is the water that I mentioned
28 earlier that is used for cooling, we did a study of the water withdrawal, and again, we
29 demonstrated no long-term deleterious effects on the lake, and the Water Board, now DEQ,
30 again, concurred with our findings. (NAS-X-9)

31
32 **Response:** The comments are noted and relate to aquatic Category 2 issues. Aquatic ecology
33 will be discussed in Chapter 2 and environmental impacts of operation will be discussed in
34 Chapter 4 of the SEIS. The comments provide no new information and, therefore, will not be
35 evaluated further. The NRC will provide the information that FWS requested.
36

10. Comments Concerning Category 2 Threatened and Endangered Species Issues

As stated in 10 CFR Part 51, Table B-1, Category 2 threatened or endangered species issues are:

- Threatened or endangered species

Comment: Page 2-16. The Service commends VEPCo for their description of Federal and State threatened and endangered species, and the company's efforts to initiate informal consultation on these issues. The report describes the conditions as, "Animal and plant species that are federally- or state-listed as endangered or threatened and that occur or could occur (based on habitat and known geographic range) in the vicinity of NAPS or along associated transmission lines are listed in Table 2-1. Bald eagles (*Haliaeetus leucocephalus*), state and federally classified as threatened, are occasionally observed along Lake Anna. The bald eagle forages along coasts, rivers, and large lakes. Dominion is not aware of any eagle nests at NAPS or along the transmission lines. Loggerhead shrikes (*Lanius ludovicianus*), state-classified as threatened, have been observed in the vicinity of NAPS. Loggerhead shrikes inhabit agricultural lands and other open areas. With the exception of the bald eagle and loggerhead shrike (*Lanius ludovicianus*), terrestrial species that are federally- and/or state-listed as endangered or threatened are not known to exist at NAPS or along the transmission lines. As of February 2000, there were no candidate federally threatened or endangered species that Dominion believes might occur at NAPS or along the transmission lines (Ref. 2.5-1)." (NAS-AA-13)

Comment: Page 2-17. The report states errors and gaps in the data regarding some fish and mussel species that need clarification. The report states, "No federally-listed fish species' range includes the North Anna River and Lake Anna. One state-listed species, the emerald shiner (*Notropis atherinoides*), appears on a Final Environmental Statement list of fish collected in the North Anna River prior to its impoundment (Ref. 2.2-1, Appendix 2.14). However, according to several authoritative sources (Refs. 2.5-3, pp. 397-401, and 2.5-4, pp. 321-409), this species is known only from the Clinch and Powell Rivers in the extreme western part of the state. It appears that the fish was misidentified. The emerald shiner is often confused with the closely related comely shiner (*Notropis amoenus*), which occurs throughout the York River drainage and has been documented from Lake Anna and the North Anna River (Ref. 2.5-3). The comely shiner was not listed in the Final Environmental Statement, but has been collected regularly by Dominion biologists in post-operational monitoring of the lower North Anna River (Ref. 2.2-8, Tables 4.2.2 and 4.2.3). The emerald shiner has not been collected in any of the post-operational surveys or monitoring studies. Based on the Virginia Department of Game & Inland Fisheries' Fish and Wildlife Information Service database, as many as two state- and federally-listed freshwater mussel species could occur in streams in the vicinity of NAPS, or in

Appendix A

1 streams crossed by NAPS transmission corridors (Table 2-1). It should be emphasized that
2 neither of these species has actually been observed as occurring in streams in the vicinity of
3 NAPS or in streams crossed by its transmission corridors.” (NAS-AA-14)
4

5 **Comment:** Page 2-18. “None of these mussel species was collected in pre-impoundment
6 surveys of the North Anna River, and none has been collected in more recent years by
7 Dominion biologists conducting routine monitoring surveys. Three bivalve species were
8 collected in the North Anna basin prior to impoundment: *Elliptio complanatus*, *Elliptio productus*,
9 and *Sphaerium striatum* (Ref. 2.2-1, Appendix 2.13). None of these is a special-status species.
10 In more recent years, the introduced Asiatic clam (*Corbicula fluminea*) has dominated
11 collections from both Lake Anna and the lower North Anna River. Small numbers of Unionids
12 (*Elliptio sp.*) and fingernail clams (*Sphaeriidae*) have also been collected. Acid drainage and
13 sediment from the Contrary Creek mine site (see Chapter 2.2 discussion) historically depressed
14 mussel populations downstream from the Contrary Creek-North Anna River confluence but, in
15 the 1980s, there were indications that mussel populations (*Elliptio sp.*) were recovering in the
16 lower North Anna River (Ref. 2.2-3, Chapter 6.2).” (NAS-AA-15)
17

18 **Response:** The staff acknowledges the comments. The appropriate descriptive information
19 regarding the plant-specific ecology and threatened or endangered species of the site will be
20 addressed in Chapters 2 and 4 of the SEIS.
21

22 **Comment:** The evaluation of threatened and endangered species was a little different in that
23 we [North Anna] had to go to state and Federal agencies to investigate possible impacts on
24 listed species. The research showed no impact to any threatened or endangered species as a
25 result of the operation of North Anna Power Station and its associated transmission lines.
26 (NAS-K-9)
27

28 **Comment:** The evaluation of threatened and endangered species was a little different in that
29 we had to go to state and Federal agencies to investigate possible impacts on listed species.
30 The research showed no impact to any threatened or endangered species as a result of the
31 operation of North Anna and its associated transmission lines. (NAS-X-10)
32

33 **Response:** The comments are noted. The comments acknowledge the importance of the
34 manner in which North Anna Power Station operates the site to the benefit of threatened and
35 endangered species. The appropriate descriptive information regarding the plant-specific
36 ecology of the site will be addressed in Chapter 2 of the SEIS.
37

38 **Part II - Comments Received on the Draft SEIS**

39 (Reserved for comments received on the draft SEIS.)
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