

PMNorthAnna3COLPEmails Resource

From: Alicia Williamson
Sent: Tuesday, February 19, 2008 2:16 PM
To: James Moorman
Subject: North Anna Info
Attachments: Ruth_Comment_Response.doc; HR 2.pdf; HR 1.pdf

The attached Word document are the questions received recently, from Mr. Ruth.
The additional pdf's are documents received over the last year or so during the ESP proceeding.
If you run an ADAMS title search on "Harry Ruth" all of his documents submitted during the ESP should be available.

Any questions let me know.
Alicia Williamson

Hearing Identifier: NorthAnna3_Public_EX
Email Number: 295

Mail Envelope Properties (419623E8C7444444BF132DA3AE69EDA20AE51CF219)

Subject: North Anna Info
Sent Date: 2/19/2008 2:16:01 PM
Received Date: 2/19/2008 2:16:01 PM
From: Alicia Williamson

Created By: Alicia.Williamson@nrc.gov

Recipients:
"James Moorman" <James.Moorman@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	Size	Date & Time
MESSAGE	347	2/19/2008 2:16:01 PM
Ruth_Comment_Response.doc	43584	
HR 2.pdf	120500	
HR 1.pdf	4825254	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Questions/Concerns from Mr. Harry Ruth: Emailed on November 16, 2007.

1. Based on our conversation yesterday, it seems that you confirmed that with the planned Unit 3 (with a combination of wet/dry cooling) that the Lake Anna water level will decrease much faster at approximately 12.5 million gallons per days due to evaporation, which will cause the overall water temperatures to increase at a more rapid rate. Logic says that if you are going to increase the average drought period from 21 to 40 days (most likely during the summer months) that the overall lake temperature will increase more rapidly and to a higher level than previously experienced. Can you with your Lake Model give a comparison of today's water levels and water temperatures during the summer months, versus the predicted water levels and water temperatures with Unit 3 operating recognizing that 99% of the water is re-circulated and gets hotter and hotter as the summer months progress ?

RESPONSE:

The Lake Model was used to assess the expected impacts from operation of Unit 3 on lake water levels. This assessment is presented in Appendix K of the ESP EIS. Model results for a 23 year period (October 1978 to April 2003) indicate that the average difference in water level between observed (i.e., with Units 1 and 2 operation) and with Unit 3 operating would have been 2.8 inches (Table K-4). The maximum difference between the two scenarios would have occurred in October 2002, during the critical drought period, and lake levels would have been different by 1.7 ft (elevation 245.2 ft versus 243.5 ft MSL). It should be noted that at elevation 243.5 ft MSL, the volume of Lake Anna Reservoir is approximately 236,400 ac-ft or 77,000 million gallons (see Table K-1). The reduced volume of water in the lake caused by Unit 3 operations would result in an increase of average lake water temperature, assuming the heat rejection rate from operation of Units 1 and 2 remains constant. This increase was examined in the North Anna Early Site Permit (ESP) Environmental Impact Statement (NUREG-1811). This increase is small, however, and was computed to be less than 0.1°F (see Section 5.3.3), which is consistent with the size of the reservoir and the Unit 3 blowdown flow rate.

2. Can you also forward some basic data on the Clinton, Illinois nuclear plant that you referred to where their is recreation on the water and residential development around the lake. If I understood you correctly, the associated lake also re-circulates its heated water discharge.

RESPONSE:

The Clinton ESP application submitted by Exelon, and the NRC's safety evaluation report, environmental impact statement, and issued ESP can be found on the NRC's web site. The URL address is:

<http://www.nrc.gov/reactors/new-licensing/esp/clinton.html> .

3. Has the NRC invested into any type of research on how the "HEAT ENERGY" that is discharged into the nation's waters could be recaptured before the discharge and used in some beneficial manner to produce needed energy that can be used by human's to reduce the amount of dependency on foreign oil? At a recent meeting, I was told that the nuclear reactors are only about 30 to 35% efficient. If this is true it would appear that if the "HEAT Energy" at each of the nation's nuclear power plants could be effectively utilized that it would solve many problems, including adding much less heat to the nations waters which in turn would mitigate many of our concerns with humans, fish, mussels, aquatic life, etc.

RESPONSE:

This type of basic energy research falls under the mission of the Department of Energy, not the NRC. However, if an applicant for a new reactor or an operator of an existing reactor applied for this type of energy conversion device, we would review the application per our mission statement.

4. We would also like to re-emphasize our concern that Unit 3 was looked at during the ESP cycle as an independent unit, as opposed to being a new unit added to a plant that currently has 2 operating units. As we indicated yesterday, we request that you insure that the NRC, during the COL phase, looks in depth at the totality of the environmental impacts of Units 1, 2 and 3 and how the Unit 3 cooling methodology can assist with mitigating the overall impacts currently being experienced with Units 1 and 2.

RESPONSE:

In the cumulative impacts section of the ESP EIS, NRC considered impacts related to all three reactors. The NRC will also consider cumulative impacts in the COL EIS if new and significant information comes to light regarding Unit 3.

5. Re the Clam/Mussel Survey requested by VA Dept of Game and Inland Fisheries. Brian Watson (phone 434-525-7522 is the DGIF Wildlife Diversity Biologist/Malacologist who requested a total Lake Anna clam/mussel survey be conducted by a Virginia State certified malacologist within the last 2 year time period. If you are aware of such a survey, could you please forward a copy to Brian and myself. Brian has identified that the Asian clam (*Corbicula fluminea*), Eastern elliptio (*Elliptio complanata*), Paper pondshell (*Uterbackia imbecillis*) and Eastern Floater (*Pyganodon cataracta*) are resident in Lake Anna. In addition, he is concerned over the potential impacts of elevated water temperatures upon native freshwater mussels and that other freshwater rare species mussels (Yellow lampmussel-*Lampsills cariosa*), (eastern lampmussel-*Lampsills radiata*

radiata), Eastern pondmussel-*Ligumia nasuta*) and the (Tidewater mucket-leptodea ochracea) which are rare species may also be present in Lake Anna.

RESPONSE:

Staff are not aware of the survey at this time, however staff will contact Mr. Watson during the course of the COLA review. The staff did review the presence or absence of threatened and endangered species in the final EIS for the ESP (see EIS Section 2.7.2.4). The staff evaluated the potential impacts of operating the proposed new Unit 3, including operating the plants and cooling systems, as well as potential changes to the flows in the North Anna River, on aquatic threatened and endangered species. Based on this evaluation, the staff concluded that the impacts of operation on threatened or endangered aquatic species would be small, and mitigation was not warranted. Nevertheless, NRC staff will contact Mr. Watson as part of our COL review.

6. Re the *Naegleria Fowleri* (NF) (brain eating amoeba) study being conducted by the Virginia Commonwealth University in Lake Anna. The initial studies have confirmed that the NF amoeba is present at the upper end of the lake above the 208 bridge in addition to various other locations throughout the entire lake. We expect the study will be completed within the next month and will forward a copy upon its completion. As you are aware the NF amoeba is proliferated by water temperatures above the mid-80's (F) and our understanding is that the hotter the temperatures, the more the amoeba will proliferate. This coupled with 99% of the water being re-circulated within Lake Anna, coupled with the potential hotter water temperatures due to increased drought rates with the 12.5 million gallons per day of evaporation from Unit 3, coupled with the water getting hotter faster, which in turn will last for a longer period of time in turn appears to provide the environment with overall hotter lake temperatures throughout which will enhance the NF population for a longer time. We measured 106 (F) at the end of the discharge canal last year. What is your forecast using you Unit 3 model and actual data recorded by the Lake Anna Civic Association for upper water temperatures we could experience in the future with Unit 3 operating?

RESPONSE:

Please see the response to Question 1 above, which also addresses the water temperature issue. The discharged waste heat from operation of Unit 3 is not expected to appreciably change the water temperature of Lake Anna because the maximum blowdown flow rate is insignificant (less than 0.3 percent) related to the combined discharges from Units 1 and 2 (see EIS Section 5.3.3).

Questions/Concerns from Mr. Harry Ruth: Emailed on December 12, 2007.

7. If we interpreted your PNNL report correctly, it was produced prior to change of the 3rd reactor type from once-through-cooling to a combo wet/dry cooling tower and therefore may have to be recalculated using the net result of all three reactors operating and the reduction of an additional 12.5 million gallons per day from the lake caused by the evaporation of the combo wet/dry cooling towers. Please advise.

RESPONSE:

The PNNL report was suggest as background reading during the phone call since it described the equilibrium temperature concept. The ESP final EIS (i.e., NUREG-1811, dated December 2006) reflects the combination wet and dry cooling system proposed for Unit 3 in Revision 9 of the ESP Application.

8(a). In addition to the items I identified in my November 16 email, I overlooked the PCB concerns at the lake which may or may not be coming from the power plant. The Virginia state health commissioner issued a fish consumption advisory on August 31, 2007. The VDH advisory cautions: Do not eat any Lake Anna gizzard shad and do not eat more then two meals a month of carp, largemouth bass, striped bass, white perch, white catfish, channel catfish or blue gill sunfish. The health advisory applies to the total lake, both the main reservoir and cooling lagoons. Our understanding is that many (Lake Anna Civic Association and the Virginia Dept of Environmental Quality) have tried to find the source of the PCB's so they can be eliminated, but thus far have been unsuccessful and hence the reason for the fish advisory.

RESPONSE:

Mike's phone message..."need to focus on impact statement". Needs more.

8(b). We further understand that in the late 1960's and/or early 1970's that there was a major fire at the North Anna Power plant construction site for the planned reactors at that time, where transformers, etc. were stored. Possibly some PCB's were leached into the soil, which eventually found their way into the lake or underground water systems in the area. The clean-up requirements at that time may not have been as stringent as those currently imposed. Possibly there are multiple sources. Do you have any information on that fire and what type of clean-up activities were imposed at that time? Does the NRC plan to investigate and determine the source of the PCB's in all of Lake Anna so the public can eat the fish in the lake?

RESPONSE:

This is an operational issue for the Units 1 and 2, and are therefore not related to the proposed Unit 3. NRC staff will refer the issue to the Project Manager in

charge of licensing oversight for Units 1 and 2. <Mike, did we ever give this guy a heads-up?>

From: "Harry Ruth" <HC.RUTH@LOUISA.NET>
To: "Jack Cushing (NRC)" <JXC9@NRC.GOV>
Date: 9/10/05 8:37AM
Subject: Fw: Friends of Lake Anna Cover Letter & Attach Letter - 7 Sep 05

----- Original Message -----

From: Harry Ruth
To: Jack Cushing (NRC)
Sent: Thursday, September 08, 2005 4:32 PM
Subject: Fw: Friends of Lake Anna Cover Letter & Attach Letter - 7 Sep 05

----- Original Message -----

From: Harry Ruth
To: jxc9@nrc.com
Sent: Thursday, September 08, 2005 4:08 PM
Subject: Friends of Lake Anna Cover Letter & Attach Letter - 7 Sep 05

Hi Jack Cushing (NRC),

Attached are the two documents (1) The VDEQ & NRC forwarding letter that includes a new concern with the inadequate water in the 342 sq miles watershed to support a 3rd water-cooled nuclear reactor at North Anna and (2) A description of the attachments to the letter which represents the concerns of approximately 1,850 people who use Lake Anna. Thanks in advance for both yours and Andy Kugler's agreement to include the concerns in your current review of the North Anna ESP. Harry

Mail Envelope Properties (4322D331.761 : 20 : 14177)

Subject: Fw: Newspaper articles re North Anna plant expansion-Friends of Lake Anna
Creation Date: 9/10/05 8:35AM
From: "Harry Ruth" <HC.RUTH@LOUISA.NET>
Created By: HC.RUTH@LOUISA.NET

Recipients

nrc.gov
 owf4_po.OWFN_DO
 JXC9 (Jack Cushing)

Post Office

owf4_po.OWFN_DO

Route

nrc.gov

Files

Files	Size	Date & Time
MESSAGE	1006	09/10/05 08:35AM
TEXT.htm	2400	
Newspaper articles forwarded to VDEQ - 9 Sep 05.doc		26112
Mime.822	41389	

Options

Expiration Date: None
Priority: Standard
Reply Requested: No
Return Notification: None

Concealed Subject: No
Security: Standard

FRIENDS OF LAKE ANNA, VIRGINIA

9 Sep 2005

Mrs. Ellie Irons, Environmental Impact Review Program Manager
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Reference: My previous correspondence on 17 Aug, 31 Aug, and 7 Sep re the North Anna Nuclear Plant ESP Permit

Dear Ms. Irons:

Thank you for meeting with us on Sep 7, 2005 and accepting the petitions, correspondence and Board of Directors resolutions that represent approximately 1,850 persons. Enclosed please also find newspaper articles from various newspapers that also indicates similar concerns expressed by the Friends of Lake Anna. The newspaper articles enclosed are:

<i>NEWSPAPER</i>	<i>DATE</i>	<i>TITLE OF ARTICLE</i>
Freelance Star	Aug 24, 05	Plan for reactors worries lake group
Central Virginian	Aug 25, 05	113 Degrees' Hot Tub health risk or both
Lake Anna Observer	Sep 1, 05	Warmer lake water objectionable; unhealthy for humans and habitat
Lake Anna Observer	Sep 1, 05	Reader urges all-out resident campaign via mail or email to ask DEQ to consider health risks of hotter water in lake
Central Virginian	Sep 1, 05	New group at lake investigates temperature concerns
Freelance Star	Sep 4, 05	Let's keep Lake Anna's water temperature safe
Central Virginian	Sep 8, 05	Friends of Lake Anna (FOLA) conveys water temperature concerns to Lake Anna Civic Association (LACA)

We are hopeful that the enclosed newspaper articles, plus the petitions, correspondence and Lake Anna Civic Association Board of Directors resolutions previously forwarded that represented approximately 1,850 persons demonstrates the publics concern with the proposed North Anna plant expansion to additional nuclear reactors as currently defined. As previously stated our group is not anti-nuclear, nor does it have "not in my back-yard sentiments". We do not think that the watershed of 342 sq. miles that feeds Lake Anna should have increased major droughts or Lake Anna should have increased water temperatures causing unhealthy conditions for the people that use Lake Anna. In no case should the water temperatures exceed 104 degrees in Lake Anna with the current plant operation or any future plant expansion. Dominion Resources is aware of other nuclear alternatives used in Europe and elsewhere, such as the air-cooled reactor they proposed for the 4th reactor

We appreciate all that your office is doing to look out for the citizens of Virginia and insuring that Dominion Resources is in complete compliance/consistency with the Coastal Zone Management Act. Please call if you have any questions.

Sincerely,

Harry Ruth for the Friends of Lake Anna
230 Heather Drive, Bumpass, Va.
Phone 540-872-3632

CC: letter only – no attachments - Jack Cushing, Nuclear Regulatory Commission (via email)

From: "Harry Ruth" <HC.RUTH@LOUISA.NET>
To: "Va. Atty Gen Bob McDonnell" <mcdonnell@oag.state.va.us>, "Governor Timothy Kaine" <tkaine@governor.virginia.gov>
Date: Fri, Oct 20, 2006 5:12 PM
Subject: Fw: North Anna Letter to EPA

20 October 2006

Dear Governor Kaine and Attorney General McDonnell:

The following email and attachments are identified as Reference 3 in our Friends of Lake Anna letter/email to you this date. Subject: Governor and Attorney General - Request for emergency intervention - re possible VDEQ cover-up.

If you have any questions, please do not hesitate to call.

Sincerely,

Harry Ruth
for the Friends of Lake Anna
C/O 230 Heather Drive, Bumpass, Va. 23024

Phone 540-872-3632

----- Original Message -----

From: Irons, Ellie
To: trulear.brian@epa.gov
Cc: Smith.Mark@epamail.epa.gov ; cruz.francisco@epa.gov ; Kevin.Magerr@epamail.epa.gov ; William.Arguto@epamail.epa.gov ; David Kaiser ; Jack Cushing ; Harry Ruth ; Morgan Butler ; cpaine@nrdc.org ; pdorn@pkdorn.com ; brockel@evols.com ; biloxibear39530@yahoo.com ; Frahm, Kathy ; Hassell, Joseph ; Faha, Thomas ; Murphy, Michael ; Ellis, Charles ; John Kauffman ; Irons, Ellie
Sent: Tuesday, October 03, 2006 12:34 PM
Subject: North Anna Letter to EPA

Mr. Trulear:

The attached letter (1st) and related attachments, including some public comments on the §402 of the CWA, are sent for your review and response to assist us in completing the Commonwealth's response on the federal consistency certification pertaining to Dominion's ESP application to the NRC for two new reactors at the North Anna Nuclear Plant. We would appreciate receiving EPA's comments by October 16, 2006 to facilitate the completion and submission of our comments by November 3. A signed copy of the letter and hard copies of the citizens' comments are in the mail. If any of the cc recipients would like a hard copies of the attached correspondence, please let me know. thanks in advance for your help.

Ellie Irons

Program Manager

Office of Environmental Impact Review

629 East Main Street, Room 631

Richmond, VA 23219

Telephone: (804) 698-4325

Fax: (804) 698-4319

email address: elirons@deq.virginia.gov

<http://www.deq.virginia.gov>

CC: "Morgan Butler (Southern Law Ctr)" <mbutler@selcva.org>, "Christopher Paine (NRDC)" <cpaine@nrdc.org>, "Randy Schneider (NOAA)" <randy.schneider@noaa.gov>, "Brian Trulear (EPA-NPDES)" <trulear.brian@epa.gov>, "Mark Smith (EPA-NPDES)" <Smith.Mark@epamail.epa.gov>, "Kevin Magerr (EPA-NEPA)" <magerr.kevin@epa.gov>, "Jack Cushing (NRC)" <JXC9@NRC.GOV>, "Jeffery Steers (VDEQ)" <jasteers@deq.virginia.gov>, "Ellie Irons (VDEQ)" <elirons@deq.virginia.gov>, "Michael Murphy (VDEQ)" <mpmurphy@deq.state.va.us>, "Director David Paylor (VDEQ)" <dkpaylor@deq.virginia.gov>, "Senator Ryan McDougle" <district04@sov.state.va.us>, "Senator R. Edward Houck" <ehouck@adelphia.net>, "Senator Charles Colgan-2" <district29@sov.state.va.us>, "Senator Charles Colgan" <cjcolgan@aol.com>, "Delegate Robert Orrock, Sr (54th Dist)." <delborrock@house.state.va.us>, "Delegate Edward Scott (30th Dist)" <delescott@house.state.va.us>, "Delegate Chris Peace (97th Dist)" <delcpeace@house.state.va.us>, "Delegate Bill Janis (56th Dist)" <Del_Janis@house.state.va.us>, "Delegate Clifford Athey (18th Dist)" <DelCAthey@house.state.va.us>, "Senator Russell Potts (27th Dist)" <district27@sov.state.va.us>, "Representative Eric Cantor (7th District)" <lloyd.lenhart@mail.house.gov>, "Dir W. Gerald Massengill (DGIF)" <gerald.massengill@dgif.virginia.gov>, "Sec Nat Res Preston Bryant" <preston.bryant@governor.virginia.gov>

Mail Envelope Properties (45393BA6.536 : 8 : 54582)

Subject: Fw: North Anna Letter to EPA
Creation Date Fri, Oct 20, 2006 4:47 PM
From: "Harry Ruth" <HC.RUTH@LOUISA.NET>

Created By: HC.RUTH@LOUISA.NET

Recipients

nrc.gov

OWGWPO03.HQGWD001
JXC9 CC (Jack Cushing)

governor.virginia.gov

preston.bryant CC (Sec Nat Res Preston Bryant)
tkaine (Govenor Timothy Kaine)

dgif.virginia.gov

gerald.massengill CC (Dir W. Gerald Massengill (DGIF))

mail.house.gov

lloyd.lenhart CC (Representative Eric Cantor (7th District))

sov.state.va.us

district27 CC (Senator Russell Potts (27th Dist))
district29 CC (Senator Charles Colgan-2)
district04 CC (Senator Ryan McDougle)

house.state.va.us

DelCAthey CC (Delegate Clifford Athey (18th Dist))
Del_Janis CC (Delegate Bill Janis (56th Dist))
delcpeace CC (Delegate Chris Peace (97th Dist))
delescott CC (Delegate Edward Scott (30th Dist))
delborrock CC (Sr (54th Dist). Delegate Robert Orrock)

aol.com

cjcolgan CC (Senator Charles Colgan)

adelphia.net

ehouck CC (Senator R. Edward Houck)

deq.virginia.gov

dkpaylor CC (Director David Paylor (VDEQ))
elirons CC (Ellie Irons (VDEQ))

jasteers CC (Jeffery Steers (VDEQ))

deq.state.va.us

mpmurphy CC (Michael Murphy (VDEQ))

epa.gov

magerr.kevin CC (Kevin Magerr (EPA-NEPA))

trulear.brian CC (Brian Trulear (EPA-NPDES))

epamail.epa.gov

Smith.Mark CC (Mark Smith (EPA-NPDES))

noaa.gov

randy.schneider CC (Randy Schneider (NOAA))

nrdc.org

cpaine CC (Christopher Paine (NRDC))

selcva.org

mbutler CC (Morgan Butler (Southern Law Ctr))

oag.state.va.us

mcdonnell (Va. Atty Gen Bob McDonnell)

Post Office

OWGWPO03.HQGWDO01

Route

nrc.gov
governor.virginia.gov
dgif.virginia.gov
mail.house.gov
sov.state.va.us
house.state.va.us
aol.com
adelphia.net
deq.virginia.gov
deq.state.va.us
epa.gov
epamail.epa.gov
noaa.gov
nrdc.org
selcva.org
oag.state.va.us

Files

MESSAGE
TEXT.htm

Size

2153
9652

Date & Time

Friday, October 20, 2006 4:47 PM

05079F N Anna 06 EPA.doc	64000	
VCP Enforceable Policies 2004-attachment1.doc	42496	
NAPS Public Comments SELC Sept 2006.doc	45056	
NAPS Public Comment FOLA 2.August 2006.doc	90624	
NAPS Public Comments NRDC. Sept 2006.doc	96768	
NAPS Public Comment FOLA1.June.200614Jun065.doc		59392
NAPS Maps.June 2006.pdf	601102	
The North Anna Power Station proposed 1970.pdf	1271956	
Mime.822	1	

Options

Expiration Date:	None
Priority:	Standard
ReplyRequested:	No
Return Notification:	None

Concealed Subject:	No
Security:	Standard

Junk Mail Handling Evaluation Results

Message is eligible for Junk Mail handling
This message was not classified as Junk Mail

Junk Mail settings when this message was delivered

Junk Mail handling disabled by User
Junk Mail handling disabled by Administrator
Junk List is not enabled
Junk Mail using personal address books is not enabled
Block List is not enabled

October 2, 2006

Mr. Brian Trulear
U.S. Environmental Protection Agency
Office of Water
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

RE: National Pollutant Discharge Elimination System Permit jurisdiction
under the Clean Water Act: North Anna Power Station, Louisa County,
Virginia: Proposed New Units 3 and 4
DEQ-05-079F

Dear Mr. Trulear:

The purpose of this letter is to seek EPA's clarification on several comments and questions from the public concerning §402 of the Clean Water Act that have arisen in our reviews of the proposed addition of a water-cooled nuclear reactor unit (Unit 3) and an air-cooled nuclear reactor unit (Unit 4) to the existing North Anna Power Station by its owner, Dominion Nuclear North Anna, LLC (hereinafter "Dominion" or "the applicant"). Since administration of the NPDES program falls under your purview, we are interested in your reaction to these questions and will include your guidance in our response on the federal consistency certification for proposed Units 3 and 4.

Review Responsibilities and Background

As you may know, the Department of Environmental Quality ("DEQ"), through its Office of Environmental Impact Review (this Office) coordinates Virginia's federal consistency reviews pursuant to the Coastal Zone Management Act. DEQ is also responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act and responding to appropriate federal officials on behalf of the Commonwealth. At this time, we are working toward completion of our review of the newly submitted information on federal consistency for the proposed Unit 3, as well as the information submitted earlier on proposed Units 3 and 4. Our completion deadline for the review of the federal consistency certification, and for a response to the applicant, is November 3, 2006.

Mr. Brian Trulear
Page 2

The federal consistency review includes a public participation requirement in which a hearing may be held (see the Federal Consistency Regulations, 15 CFR Part 930, § 930.61). Accordingly, DEQ conducted a public hearing on August 16.

The following project description, citing page references in the Nuclear Regulatory Commission's Draft EIS and its Supplement to the Draft EIS ("SDEIS"), is provided in case you need it to aid in resolution of the questions we present in this letter and enclosures.

Project Description

Dominion Nuclear North Anna LLC, a subsidiary of Dominion Virginia Power Company, is the applicant for an Early Site Permit from the Nuclear Regulatory Commission ("NRC"). The applicant proposes a site for two new nuclear reactor units in Louisa County near Mineral, at the site of the existing North Anna Power Station. The site is on a peninsula on the southern shore of Lake Anna about 5 miles upstream from the North Anna Dam. NRC's Early Site Permit ("ESP") would, if issued, allow the applicant to "reserve" the site for as long as 20 years while considering whether to build the new reactors and undertaking site preparation activities.

Based on the applicant's proposal to add two nuclear reactors to the site, the NRC has defined "bounding plant parameters" within which a future site design would be developed. The applicant has not selected a specific plant design for the new units, but will work within the "plant parameter envelope" ("PPE") to develop the early site permit. The early site permit will include a site redress plan, if issued (Draft EIS, page 1-5, § 1.2). Three additional sites are considered in the Draft EIS, but not in the federal consistency certification.

The new information on federal consistency and the Supplement to the Draft Environmental Impact Statement ("SDEIS") address a proposed new method of cooling the third nuclear reactor unit. The proposal considered in the Draft Environmental Impact Statement ("Draft EIS") and in the originally submitted federal consistency determination (March 25, 2005) contemplated once-through water cooling for the third unit, and air cooling for the fourth unit. The scope of the SDEIS is limited to the environmental impacts associated with the change in the cooling method for the third unit, called a closed-cycle wet-dry system, and increasing the power output of the two proposed units from 4300 to 4500 megawatts-thermal (SDEIS, Executive Summary, page xviii). This re-started federal consistency review focuses on the coastal effects of the changed cooling method for proposed Unit 3, along with the coastal effects of proposed Unit 4.

During normal operation at full power, the proposed Unit 3 would use a cooling tower system that can function in different modes, consuming differing amounts of water depending on meteorological and water supply conditions. In times of water abundance, the unit would operate in "energy conservation" (EC) mode, withdrawing a maximum of 22,268 gallons per minute (gpm). In times of water shortage, defined as when lake

levels fall below 250 feet above mean sea level (250 feet msl) lasting 7 days or more,

Mr. Brian Trulear
Page 3

the unit would operate in "maximum water conservation" (MWC) mode, withdrawing a maximum of 15,384 gpm. Maximum blowdown rates (i.e., the rate at which re-circulating water is removed from the cooling system to reduce the build-up of contaminants) would be 5,565 gpm in EC mode and 3,844 gpm in MWC mode (SDEIS, page 5-5, § 5.3).

Federal Consistency

1. Introduction. The federal consistency requirement of the Coastal Zone Management Act (see § 307(c) of the Act, 15 U.S.C.A. § 1456(c)) applies to the proposed addition of Units 3 and 4 to the North Anna Power Station because the North Anna Power Station affects uses and resources of Lake Anna, the shorelines of which adjoin Spotsylvania County as well as Louisa County. Spotsylvania County and the downstream stretch of the River are both in Virginia's coastal zone. Federally licensed or permitted activities must be reviewed by the affected state and found consistent with its federally approved coastal program in order for the federal agency to permit or license the activity (see the Federal Consistency Regulations implementing the Act at 15 CFR Part 930, specifically Sub-part D on activities requiring a federal license or permit, §§ 930.50 through 930.66). In order to be consistent with the Virginia Coastal Resources Management Program (VCP), the proposed activity must meet permitting and other requirements of the enforceable policies of the VCP. The NRC cannot issue an Early Site Permit to Dominion if Virginia finds the proposed project inconsistent with the VCP and objects to the federal consistency certification. I am enclosing a list of the enforceable policies for your background information.

2. Citizens' Assertions with respect to Consistency. Citizens, both individually and through citizens' organizations, have stated that the proposed addition of Unit 3 at the North Anna Power Station is inconsistent with Virginia's point-source pollution control enforceable policy of the VCP because the existing Units 1 and 2 already exceed NPDES water quality standards for temperature, and that the proposed additional water-cooled reactor unit (proposed Unit 3) would exacerbate this problem by withdrawing additional water for cooling, reducing the amount of water receiving cooling water discharges.

3. Enforceable Policy. The enforceable policy that is the subject of this inquiry is the point source pollution control policy, specifically the National Pollutant Discharge Elimination System (NPDES) permit program under § 402 of the federal Clean Water Act (which is administered in Virginia as the Virginia Pollutant Discharge Elimination System permit program). Citizens have also indicated that the change of proposed cooling systems will not address the problem of water evaporation and reduced downstream flow in the North Anna River (McManus e-mail dated July 27); downstream flow is addressed by the other part of the point-source pollution control policy, the Virginia Water Protection Permit program and Water Quality Certification under § 401 of the Act.

Citizens' Comments: A Closer Look

The comments of citizens are based on the understanding that Lake Anna is an impoundment in which most of the volume of lake water is recirculated and used as

Mr. Brian Trulear
Page 4

cooling water for the existing two-unit North Anna Power Station. The cooling lagoon (referred to by the applicant as the "waste heat treatment facility" and by others as the "hot side" of the lake) is separated from the rest of the lake (the "cool side") by a series of dikes. The cooling water is discharged from the Power Station at Dike 3, through an outfall known as Outfall 001. The applicant has been issued a § 316(a) variance under the Clean Water Act which allows it to discharge cooling water that, at the point of measurement, exceeds the 89.6 degrees F. (32 degrees C.) water quality temperature criterion in the VPDES permit (12/22/05 draft, permit VA0052451); and the applicant has requested that this variance continue, according to citizens (NRDC, pages 8-9).

1. Public or Private Waters: Applicability of the Clean Water Act. Citizens contend that the portion of the lake used for cooling water (the "hot side") is a public waterway, subject to the protection of the Clean Water Act, including its NPDES permit program and the State's VPDES program under § 402 (Natural Resources Defense Council (NRDC) letter, September 8, page 8). This part of the Lake, like the rest of it, was created by the impoundment of the North Anna River, and is fed by eight (8) streams (see enclosed map). As citizens point out (Friends of Lake Anna (FOLA) public hearing comments, August 16, page 4), the Army Corps of Engineers issues § 404 water quality permits for dredging and filling activities in the "hot side" because the waters there are waters of the United States, within the meaning of the Clean Water Act ("see "NPDES-VPDES Permit Authority," below).

In this regard, citizens cite a recent U.S. Supreme Court decision (*S.D. Warren Company v. Maine Board of Environmental Protection, et al*, No. 04-1527, decided May 15, 2006) which stated, *inter alia*, that public waters remain public even though they are used for private purposes:

We disagree that an addition is fundamental to any discharge, nor can we agree that one can denationalize national waters by exerting private control over them.

(Opinion of the Court, page 7, footnote 5 [my emphasis added]. See FOLA letter, dated June 14, page 2, item (1)c), attached to September 27 e-mail, Irons to Ellis, and others).

The question is whether the "hot side" of the lake constitutes "Waters of the United States" within the meaning of the Clean Water Act, and thus within the protection of the NPDES-VPDES permit program.

2. Temperature Criterion. According to citizens [FOLA letter, June 14, page 3, item 2 and NRDC letter, September 8, page 8], the maximum temperature allowed in the lake is 89.6 degrees F. (32 degrees C.). The citizens have alleged that water temperature frequently exceeds this amount. During our earlier review of the federal consistency certification for the new units, citizens indicated that the temperature in parts of the "hot side" was often monitored at temperatures approaching 104 degrees F. The Department of Health, when asked about this temperature level, indicated that exposure to this water temperature can be harmful to human health (September 15, 2005 letter, pages 2-4). The applicant states that the 104-degree figure came from a U.S. Consumer Product Safety Commission publication warning against soaking in hot

tubs

Mr. Brian Trulear
Page 5

or pools at that temperature, and that this part of the Lake is not so used (September 8 letter, "Responses to Comments," pages 9-10).

As mentioned above (see "Federal Consistency," item 2), the applicant was issued a variance under § 316(a) of the Clean Water Act, allowing it to exceed the 89.6-degree standard (measured several miles downstream of the discharge canal). Citizens state that since water temperature of the cooling lagoons reaches 104 degrees with some frequency with the existing two units, adding another water-cooled reactor unit would necessarily exacerbate this problem; for example, the additional withdrawal of water from this small watershed for cooling Unit 3, as well as the increase in consumptive loss associated with the evaporation of water at the new cooling tower, would lower the level of water in the lagoons (FOIA letter, June 14, page 3, item 2).

The question in this regard is whether the VPDES permit and the § 316(a) variance on the temperature standard accompanying it are warranted for a new unit that may raise the temperature. If the temperature requirement is delegated to the State under the VPDES program, what are the temperature limits, if any, which may be set by the state for the proposed Unit 3? (See also next item.)

3. Point of Temperature Measurement. Citizens state that water quality monitoring pursuant to the VPDES permit should be done at the end of the discharge canal, where the cooling water meets lake water, and not several miles away at Dike 3 as is currently done. They indicate that this would give a more realistic picture of exceedances of the temperature criterion (FOIA letter, June 14, page 3, item 3).

The question here is whether, under the Clean Water Act, a NPDES permit would require monitoring of the temperature where the cooling water discharge enters the Lake (at the end of the discharge canal) or at Outfall 001, as is presently done under the VPDES.

4. Stringency of State VPDES Program. Citizens indicate that the state VPDES program cannot be less stringent than the national NPDES program (Harry Ruth e-mail to Mark Smith, EPA, August 10). The federal regulatory program may require that a state, in taking delegation of the program, use the federal standards as a minimum standard, so that the state standards, as applied in permit actions, may be more stringent but not less so than the federal standard.

The question here is whether the state administration of the VPDES permit program, either as an enforceable policy of the Virginia Coastal Resources Management Program or as a delegated program under the Clean Water Act, gives the state any discretion over the stringency of the standards to be applied insofar as temperature, pollutants, and possibly flow are concerned.

5. Water Quality Monitoring on the "hot side." The citizens ask about DEQ's authority to enforce the Clean Water Act by requiring water quality monitoring in the "hot side" of the lake to which the cooling water is discharged. They indicate that there do

not appear to be state agencies monitoring the "hot side" for health risks, or enforcing

Mr. Brian Trulear
Page 6

water quality requirements at Dike 3 because of discharge permit waivers. This is the case notwithstanding extensive public recreation activity in this side of the lake (FOLA letter, June 14, page 2, item (1)d).

Under the NPDES federal program, would the “hot side” be subject to monitoring requirements? If the answer is “yes,” does the law or the NPDES regulation give states any discretionary authority regarding monitoring stipulations in the VPDES program? Please elaborate.

NPDES-VPDES Permit Authority

1. General Discussion. The existing North Anna Power Station (reactor Units 1 and 2) holds a Virginia Pollutant Discharge Elimination System (VPDES) permit, issued by DEQ's Northern Virginia Regional Office (DEQ-NVRO). According to Mark Smith's August 10, 2006 e-mail to me, EPA reviewed a draft VPDES permit renewal, submitted by DEQ-NVRO on February 24, 2006, and had no objections to the proposed renewal of the VPDES permit.

We understand that the existing VPDES permit does not include limitations on the temperature of effluent from the power plant into the cooling lagoon portions of Lake Anna, which are described collectively as a “waste heat treatment facility” by the applicant. The State's VPDES regulations indicate, at 9 VAC 25-31-10 (copy enclosed):

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the [Clean Water Act] and the [State Water Control Law], are not surface waters.

NPDES regulations (see 40 CFR Part 122, § 122.2) also exclude “waste treatment systems” from the definition of jurisdictional “Waters of the United States,” but say that the exclusion applies

...only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States.

If we assume that the “waste heat treatment facility” is a “cooling pond,” the state exception for waste treatment systems appears broader than the federal definition because the state appears to exclude the “waste heat treatment facility” from regulation while the federal definition appears to regulate it as a cooling pond and water of the United States.

It is our understanding that proposed Unit 3, the subject of the current federal consistency certification review, would also be subject to NPDES-VPDES permitting. (The applicant proposes to use air cooling for Unit 4 instead of any water cooling method, so Unit 4 is not likely to require NPDES-VPDES permitting.) DEQ's Northern Virginia Regional Office, which has water permitting jurisdiction in the area including

Mr. Brian Trulear
Page 7

Lake Anna, does not consider the cooling lagoon ("hot side") to be subject to water quality standards (Faha-Irons e-mail, August 2).

Is there any provision in the Clean Water Act which allow this difference in the definitions in a federal program which has been delegated to a state?

2. Earlier Inquiries from DEQ. On June 19, I forwarded a number of questions to you and Francisco Cruz (via e-mail) from citizens relative to applicability of NPDES-VPDES permit requirements to the North Anna cooling lagoon (also known as the "warm side" of Lake Anna). I asked for your advice in addressing the questions raised by citizens concerning monitoring responsibilities in the cooling lagoon or "warm side" of the Lake. On August 2, I sent another e-mail, asking for advice in time for us to be able to answer questions at our August 16 public hearing and NRC's August 15 public hearing. We have not received a response.

The above discussion attempts to summarize issues raised by citizens during our public review period that pertain to compliance with §402 of the Clean Water Act. I have attached some samples of the actual comments submitted by the Friends of Lake Anna, the Natural Resources Defense Council, the Southern Environmental Law Center and some individual citizens. Thank you for your attention to these matters. If you have questions, please feel free to contact me (telephone (804) 698-4325 or e-mail elirons@deq.virginia.gov).

Sincerely,

Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures

cc: Thomas R. Faha, DEQ-NVRO
Kevin Magerr, EPA Region III (NEPA)
Joseph P. Hassell, DEQ-DWR
Jack Cushing, NRC
Mark Smith, EPA (NPDES)
Francisco Cruz, EPA (NPDES)
William Arguto, EPA Region III (NEPA)
David W. Kaiser, NOAA
Michael P. Murphy, DEQ-DEE
Kathy R. Frahm, DEQ-OPL
Harry Ruth, FOLA
Christopher E. Payne, NRDC
Morgan Butler, SELC
Peter Dorn
Sandra Brockel

J. W. McManus

Attachment 1

Enforceable Regulatory Programs comprising Virginia's Coastal Resources Management Program (VCP)

- a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC); Virginia Code sections 28.2-200 to 28.2-713 and the Department of Game and Inland Fisheries (DGIF); Virginia Code sections 29.1-100 to 29.1-570.

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities; Virginia Code sections 3.1-249.59 to 3.1-249.62.

- b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1200 to 28.2-1213.
- c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.
- (1) The tidal wetlands program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1301 through 28.2-1320.
 - (2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands --both tidal and non-tidal; Virginia Code section 62.1-44.15:5 and Water Quality Certification pursuant to section 401 of the Clean Water Act.

Attachment 1, page 2

- d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1400 through 28.2-1420.
- e. Non-point Source Pollution Control – (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation; Virginia Code sections 10.1-560 et seq.

(2) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater (see i) Virginia; Virginia Code sections 10.1-2100 through 10.1-2114 and 9 VAC10-20 et seq.
- f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code section 62.1-44.15. Point source pollution control is accomplished through the implementation of:
 - (1) the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.
 - (2) The Virginia Water Protection Permit (VWPP) program administered by DEQ; Virginia Code section 62.1-44.15:5 and Water Quality Certification pursuant to section 401 of the Clean Water Act.
- g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code sections 32.1-164 through 32.1-165).
- h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code sections 10-1.1300 through 10.1-1320).
- (i) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act; Virginia Code sections 10.1-2100 through 10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative Code 9 VAC 10-20-10 et seq.

Attachment 2

Advisory Policies for Geographic Areas of Particular Concern

- a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:
 - a) Wetlands
 - b) Aquatic Spawning, Nursery, and Feeding Grounds
 - c) Coastal Primary Sand Dunes
 - d) Barrier Islands
 - e) Significant Wildlife Habitat Areas
 - f) Public Recreation Areas
 - g) Sand and Gravel Resources
 - h) Underwater Historic Sites.

- b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:
 - i) Highly Erodible Areas
 - ii) Coastal High Hazard Areas, including flood plains.

- c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:
 - i) Commercial Ports
 - ii) Commercial Fishing Piers
 - iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCRMP is encouraged. Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCRMP recognizes two broad classes of priority uses for waterfront development APC:

- i) water access-dependent activities;
- ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given

waterfront area.

attachment 2, page 2

Advisory Policies for Shorefront Access Planning and Protection

- a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.
- b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.
- c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.
- d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.
- e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.
- f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

September 8, 2006

Ms. Ellie Irons
EIR Program Manager
Office of Environmental Impact Review
Department of Environmental Quality
629 East Main Street, 6th Floor
Richmond, Virginia 23219

Re: CZMA consistency determination for Dominion Nuclear North Anna

Dear Ms. Irons,

The Southern Environmental Law Center submits these comments on the Coastal Zone Management Act (CZMA) consistency certification that Dominion Nuclear North Anna, LLC (Dominion) has proposed in connection with its application to the Nuclear Regulatory Commission (NRC) for the issuance of an Early Site Permit (ESP) or site suitability determination for two additional nuclear reactors at the North Anna Power Station in Louisa County, Virginia. We submit these comments on behalf of Public Citizen, the Nuclear Information and Resource Service and the Blue Ridge Environmental Defense League as a supplement to earlier comments we submitted by letter dated October 25, 2005 and at the public hearing in August 2006.

Dominion's revised cooling system design for Unit 3 significantly reduces concerns with the discharge of heated water to Lake Anna. However, concerns about reduced flows downstream in the North Anna and Pamunkey Rivers remain as evaporation from the cooling towers would equal or possibly surpass evaporation from the surface of the Lake under the once-through cooling system originally proposed. DEQ must resolve the potential impact of reduced flows on aquatic habitat, on recreational uses of the rivers, and on availability for drinking water in the North Anna and Pamunkey Rivers and below before granting a consistency determination.

We are also concerned with jurisdictional issues relating to the "hot side" of Lake Anna -- the portion of the lake that is separated from the rest by dikes and serves as the nuclear reactors' "waste heat treatment facility." Dominion continues to neglect potential thermal impacts on the "hot side" of Lake Anna by insisting that, under state law, it may treat this part of the lake as its own private property. Granted, Lake Anna was created when Dominion built a dam along the North Anna River to trap a supply of cooling water for the nuclear plant. However, regardless of ownership of the land under or surrounding the lake, the "hot side" inundated numerous existing streams and remains "waters of the U.S." which must comply with federal laws such as the CZMA and the Clean Water Act. The water in that portion of the lake is fed by natural

streambeds and is already heated to abnormal levels that are certainly not consistent with Virginia's water quality standards. DEQ should take steps to reduce existing thermal impacts within the "hot side" of the lake by requiring compliance with water quality standards to be measured at the point of discharge from the plant. Though this issue relates more closely to the renewal of Dominion's NPDES permit, it should be analyzed thoroughly before issuing a consistency determination under the CZMA.

Potential Impacts.

Even with Dominion's recent decision to change the cooling system for Unit 3 from a once-through cooling system to a combination wet/dry cooling tower, evaporation of lake water, and therefore adequacy of flows downstream of the dam, remains a significant concern.

The Lake Anna watershed is a relatively small one, with a mean annual flow at the Lake Anna Dam ("Dam") of approximately 370 cubic feet per second (cfs).¹ As such, the ability of both Lake Anna and the North Anna River to withstand additional consumptive use of water must be closely scrutinized. For instance, under the Tennant rating system – a stream flow grading technique based on percentages of mean annual flow – a stream flow of 0 % to 10 % of the stream's mean annual flow is rated as "severe degradation."² Dominion's VWPP permit for the existing reactors requires an absolute minimum discharge of 20 cfs from the Dam to the North Anna River. A minimum release of 20 cfs equals only 5.4% of the North Anna River's mean annual flow at the Dam. With the additional evaporative losses caused by the operation of the third reactor unit at the North Anna site, the duration of time that the release rate of water from the Dam to the North Anna River would be 20 cfs or less, representing a severely degraded condition, would increase from 5.8 percent to 7.3 percent of the time according to Dominion's own analyses,³ or to 11% of the time according to the NRC's initial review. See Supplemental Draft EIS at 5-11.

These reductions in water releases to the North Anna River could have a number of impacts that would conflict with the enforceable policies of Virginia's Coastal Resources Management Program. For example, reduced flows in the North Anna River could adversely impact anadromous fish habitat, thereby directly affecting Virginia's coastal zone by impacting the state's management of its coastal fisheries. As set forth in a 2004 study of the relationship between fish abundance and flow patterns in the North Anna River, many fish species undergo their spawning and early life stages during the typically drier months of the year (July through October). Substantial flows during this period are critical for a significant number of these species, and there exists a "direct relationship between the magnitude of flow and abundance."⁴ If durations of low-flow periods are increased during this critical time of year, these anadromous

¹ February 10, 2004 letter from E. Irons, DEQ, to P. Faggert, Dominion, at p. 3. It is worth further note that the North Anna River had an average flow rate of approximately 286 cfs in this area before Lake Anna was constructed. March 3, 2005 letter from E. Irons, DEQ, to M. Lesar, NRC, at p. 8.

² *Id.* at p. 8.

³ DEIS at p. 5-7.

⁴ Dean Fowler, Virginia Department of Game and Inland Fisheries. *An Analysis of Fish Abundance and Flow Patterns in the North Anna River, Virginia.* June 18, 2004.

fish species could be adversely affected.⁵

Additional water evaporation from the Lake and the corresponding reductions in releases from the Dam could also impact recreational uses of Lake Anna and the York River watershed, potentially affecting fishing and boating both in the Lake and downstream.

Finally, as reflected in the DEIS, one county upstream of Lake Anna and three counties downstream of the Lake are considering whether or not the North Anna or Pamunkey Rivers could serve as sources for drinking water.⁶ The NRC refused to even consider the how this potential conflict over the limited water in the North Anna River may be resolved, asserting that “[a]ny future conflicts over water use fall within the regulatory authority of the Commonwealth of Virginia.” These competing demands for water highlight even further the potential problems that reduced lake levels and downstream flows would cause, and they undermine the Commonwealth’s CRMP policy goal of avoiding coastal resource use conflicts.⁷

In light of these significant potential impacts of even a wet/dry cooling tower system for proposed Unit 3 at the North Anna site, we recommend that the consistency certification be denied, or that the certification be conditioned upon a commitment by Dominion to use only air-cooling systems for both new reactors so as to minimize potential impacts on Virginia’s coastal resources. If DEQ does not deny the certification outright, DEQ should issue an ‘objection’ rather than a ‘conditional concurrence’ and continue to maintain that objection until Dominion incorporates those recommendations into its project design. If DEQ issues a ‘conditional concurrence’ instead, there is no certainty that those conditions will ever be incorporated.

Thank you for your consideration of these comments. Please let us know if you have any questions about our comments.

Sincerely,

Morgan W. Butler
Associate Attorney
Richard A. Parrish
Senior Attorney

cc via email: Michele Boyd, Public Citizen

⁵ It bears mention that populations of striped bass and American shad downstream of Lake Anna in the Pamunkey River have been used as brood stock for restoring and augmenting populations of those species elsewhere in the state. Impacts on these important populations could severely impact these fisheries.

⁶ DEIS at p. 2-23.

⁷ DEIS at p. 7-3. Hanover County has proposed to withdraw 46 cfs of water from the North Anna River downstream of the Lake Anna Dam as part of a plan to provide additional drinking water to its residents. As acknowledged in the DEIS, a withdrawal of 46 cfs would exceed the 40 and 20 cfs minimum release rates from the Lake Anna Dam that are required by the Commonwealth’s Lake Level Contingency Plan.

Paul Gunter, NIRS
Lou Zeller, BREDL
Counsel for Dominion Nuclear North Anna
(Lillian M. Cuoco, David R. Lewis, Robert B. Haemer, Timothy J.V.
Walsh)
Counsel for NRC
(Robert M. Weisman, Ann P. Hodgdon, Patrick A. Moulding)

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

(Presentation to the Virginia Department of Environmental Quality public hearing on August 16, 2006 at Louisa Middle School, Louisa, Va.)

Dear Virginia Department of Environmental Quality, Ladies and Gentlemen,

My name is Harry Ruth and I reside at 230 Heather Drive, Bumpass, Va. I live on Lake Anna and represent the Friends of Lake Anna. In the interest of time, I will forward my written comments to VDEQ and the NRC and tonight will identify the highlights only.

1. FRIENDS OF LAKE ANNA. "The Friends of Lake Anna" is a citizen group representing 2,650 persons whose mission is to protect Lake Anna (both main reservoir and cooling lagoons) and its surrounding landscape, together with any related concerns, within Louisa, Spotsylvania, and Orange Counties for the health, safety and welfare of current residents/users and for future generations. We are not anti-nuclear, nor do we have "not in my backyard" sentiments, but do support a wise and safe use of nuclear energy. Our goal is simply to protect Lake Anna for its 500,000 plus annual users and insure compliance with the law.

We believe that the U.S. should become self-reliant for energy sources and not be dependent on foreign oil, but we do want to promote the wise and safe use of nuclear energy and not have the impact of new nuclear reactors destroy Lake Anna in the process. If the project at the North Anna Plant is accomplished correctly and takes into account our concerns, possibly the new reactors could become a model for the continued growth of nuclear energy throughout the country. If the project is handled poorly, resulting in public and political uproar and bad national press, the entire future of increased nuclear energy within the U.S. could be on hold for many more years.

We are not opposed to the North Anna Project and do support the addition of 3rd and 4th nuclear reactors at the North Anna plant, but want to ensure that all environmental issues are taken care of prior to the issuance of either an NRC Early Site Permit or a VDEQ Federal Consistency Certification.

2. OVERVIEW:

We believe that the North Anna project as currently proposed is inconsistent with the Va. Coastal Zone Management Program as approved under the U.S. Coastal Zone management Act.

It is inconsistent with the enforceable policies of the Coastal Zone Management Act related to Fisheries Management and Point Source Pollution Controls. In addition it is inconsistent with the Advisory Policies of the Virginia Coastal Program & the federal U.S. Clean Water Act. VDEQ must also modify the current 316A variance and ensure that future discharge permits are protecting the public. Also one set of the North Anna River Users should not benefit at the expense of another set of users. Possibly other cooling alternatives should be considered. In addition, there are other local environmental items not within the purview of the Coastal Zone Program; however I request that you forward the concerns to the appropriate Virginia state departments for their comment and evaluation prior to making any final determination on either the ESP or Federal Consistency Certification.

I will now address each of these items.

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

3. CURRENT ESP PROPOSAL IS INCONSISTENT WITH VA COASTAL ZONE MANAGEMENT PROGRAM.

a. FISHERIES MANAGEMENT. – The Department of Game and Inland Fisheries (DGIF) has found that the fish will continue to be adversely affected even after the changes to the 3rd reactor have been made. See comments in the draft environmental impact statement and reference DGIF letter dated July 7, 2006 originated by Raymond Fernald re the ESP.

Fisheries: Department of Game and Inland Fisheries Assessment. DGIF continues to have reservations about the impacts of proposed Unit 3 on the lake and downstream resources. Striped bass and other anadromous fish are native to the York River drainage and the North Anna River, while largemouth bass, bluegill, black crappie, walleye, and channel catfish are not. Nevertheless, all of these species are important to the recreational fishery in the lake.

North Anna River Fishery Issues. According to the DGIF, the downstream impacts to fisheries resources were ignored in the Draft EIS in spite of the increased frequency of low flows that a third water-cooled unit would produce. Currently, (with two units in the regulated “base scenario”), 67 weeks of drought conditions (20 CFS or less) out of a 26-year period would be expected. Given the addition of a third unit using water, the expected drought frequency would increase 7 months of the year. Placing the population of aquatic species under frequent drought stress will shift the community substantially. Recent DGIF surveys of the North Anna River have suggested that the primary sport fish, smallmouth bass, is much less abundant than in other rivers in the region. Using 100% air cooling for Unit 3 would eliminate this concern.

Downstream Flows and Recreation. The North Anna River is a spectacularly scenic and remote canoeing river with excellent fishing, according to the Department of Conservation and Recreation. Accordingly, discharge rates from the Lake Anna Dam should be adequate to meet minimum in-stream flows needed for recreational boating from State Route 601 to U.S. Route 301. The Department of Conservation and Recreation recommends that a minimum in-stream flow recreation study be conducted to determine what this discharge rate should be.

b. POINT SOURCE POLLUTION CONTROLS - Two federal regulation programs are affected (1) Section 401 of the Clean Water Act (Water Quality Certification as administered by Virginia Water Protection permit by (VDEQ) and (2) Section 402 – (National Pollution Discharge Elimination System (NPDES) delegated by the U.S. Environmental Protection Agency (EPA) to Virginia Department of Environmental Quality (VDEQ).

(1) Water Resources, Flows, Drought and Supply. As stated in VDEQ analysis of the draft Nuclear Regulatory Commission (NRC) Draft Environmental Impact Statement (DEIS), the North Anna watershed is too small to allow large water withdrawals. These would adversely affect the beneficial uses of the North Anna River which flows into the Pamunkey River, which flows into the Chesapeake Bay and then into the Atlantic Ocean. The DGIF & VDEQ analysis clearly indicates that the 3rd unit would increase the drought cycle and cause decreased water flows during March, April; May; June, July, August and October (7 months) of each year.

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

Va. Department of Water Resources assessment of water availability. The Supplemental Draft Environmental Impact Statement (EIS) analyzes water resource and quality impacts considering the addition of the proposed Unit 3 as a closed-cycle, wet-dry cooled unit and Unit 4 as a dry-cooled unit having negligible effects on water supply. VDEQ's Division of Water Resources (DWR) commented previously in regard to its concerns for the adequacy of Lake Anna as a source of cooling water for a third nuclear reactor. Although the new cooling method would use less water, indications are that *this small watershed cannot sustain any additional water withdrawals.*

Drought Cycle Increase. Addition of Unit 3 would increase the drought recurrence interval as well as increase the total weeks of flows that are 20 cubic feet per second (cfs) or lower (currently 67 weeks out of the past 26 years). Virginia State Water Control Board Bulletin #58 reviewed flow statistics for the gauge downstream at Doswell. Prior to dam construction, flows of 25 cfs or lower would occur once every 10 years for about 10 weeks. Addition of Unit 3 would increase the frequency of drought flows downstream, and the duration of those droughts. Significant changes in drought flows have occurred since the plant/reservoir construction.

Other East Coast Nuclear Reactors: In its earlier review of the DEIS, VDEQ's Division of Water Resources looked at other nuclear reactors along the East Coast to compare the water resources available to them with the water resources available at North Anna. The conclusions drawn from that research are:

- Most of the intake locations are tidal and have an essentially unlimited water supply;
- Of the remaining locations, the **North Anna location has the least abundant water supply**, based on the average flow of a small watershed (342 square miles) and a medium-sized reservoir; and
- There is a limited number of nuclear power stations located on non-tidal rivers. In these cases, the power plants are on large rivers such as the Connecticut and the Susquehanna.

In fact, the only location remotely similar to North Anna's situation is the Oconee plants on Lake Keowee in South Carolina. However, immediately below Lake Keowee is Hartwell Lake, so the section of non-tidal stream affected by consumptive loss is very short.

Cumulative Impacts and Downstream Effects. Cumulative impacts of the current and future units on downstream hydrology and biology need to be quantitatively evaluated before any determination can be made that effects of the proposed addition of reactors to the site are "small." The starting point for a cumulative impact analysis should be before the existing two reactors were put into operations.

VDEQ provide independent cumulative impact analysis. Even though the proposed water withdrawal has decreased with the new cooling methods, yet the withdrawals remain significant with this small watershed. At a minimum VDEQ must provide an independent analysis of the cumulative impact taking into consideration worst-case scenario that includes the 2001-2002 drought.

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

(2) Water Act administered by EPA (Water Temperature) Section 402 of the Clean Water Act is administered by the Environmental Protection Agency (EPA) through NPDES which is administered in Virginia as the VPDES. The water temperature currently exceeds the temperature necessary to protect aquatic resources and the beneficial uses of national waters. Any additional temperature increases (i.e. blowdown discharges of the water cooling towers) would be detrimental to the coastal resources and would affect coastal uses, fisheries, aquatic life, public access and recreation. Further increase in water temperature would only compound the current problems.

VDEQ must prevent existing VPDES violation. First VDEQ must prevent the existing violation of its VPDES permit and the Clean Water Act, with just the two existing units which are increasing the temperatures of the entire lake. Recent Lake Anna Civic Association (LACA) water studies have indicated that the North Anna River (3 miles before it enters Lake Anna) is 13 degrees cooler than the central part of the lake above the Rt 208 Bridge. Many areas of the entire lake (both main reservoir and cooling lagoons) have recently experienced temperatures in the low to high ninety's which clearly exceeds the 89.6 degree F temperature limitation in the Clean Water Act as defined in the NPDES. Some residents have reported temperatures as high as 106 degrees F. The entire Lake Anna is being heated as a result of the current power plant.

The Clean Water Act applies to the Lake Anna reservoir and cooling lagoons/cooling ponds. Moreover, cooling ponds are considered navigable waters of the U.S. In addition, the U.S. Army Corps of Engineers (USACE) who administers Section 404 of the Clean Water Act - Dredge and Fill of Navigable Waters of the U.S. requires the issuance of 404 permits for dredge and fill activities in the cooling lagoons. This is predicated on the determination by the USACE that the cooling lagoons are jurisdictional waters of the United States. The definition for Waters of the United States under the 404 implementing regulations at 33 USC Section 328.3 is identical in all necessary respects to that of the NPDES regulations implementing 402 (40 CFR Section 122.2)

VDEQ must fully analyze the impact of any further water temperature increases resulting from the blowdown/discharges of the proposed unit 3 cooling towers or any malfunction of any of the proposed cooling towers or current generating units. The existing units 1 & 2 periodically exceed Clean Water Act limitations and any additional temperature increases by the proposed cooling towers will only exacerbate the situation.

VDEQ must also correct the existing VPDES regulations that exempt cooling lagoons from the definition of surface waters. VDEQ is in conflict with the national program (NPDES - 40 CFR Section 122.2) states that cooling lagoons/cooling ponds which meet the definition of waters of the U.S. are not Waste Treatment systems.

There is no question that the cooling lagoons are waters of the U.S. and as such are subject to three federal regulations:

- (1) 404 (Dredge and Fill of Navigable Waters of the U.S.. administered by the U.S. Army Corp of Engineers)
- (2) 402 (National Pollution Discharge Elimination System - NPDES)
- (3) 401 (Water Quality Certifications as administered by VDEQ)

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

VDEQ and the Virginia State Water Control Board do not have the authority to de-nationalize national waters and designate the Lake Anna cooling lagoons as a waste heat treatment facility.

The U.S. Environmental Protection Agency (EPA) must re-evaluate the NPDES authority delegated to the Commonwealth of Virginia and ensure that the VPDES program is not less stringent than the national program. Federally delegated programs such as VPDES can be more stringent than the national program, but cannot be less.

The Virginia State Water Control Board cannot arbitrarily exclude U.S. surface waters from its regulatory purview of its delegated national program.

Monitoring of the VPDES program must begin at the end of the North Anna power plant discharge canal, since the cooling ponds are national waters.

Waters of the Lake Anna cooling ponds/lagoons reached 106 degrees on August 3, 2006 as recorded by local residents. The Lake Anna Civic Association (LACA) Water Quality Team had recorded 104.6 degrees F at the end of the discharge canal on the same day at a different time. LACA has also reported that waters in the North Anna River (3 miles before it enters Lake Anna) are 13 degrees cooler than the central part of the lake above the Rt 208 Bridge.

The current limits of 89.6 F for non-tidal waters established by the U.S. Clean Water Act have been violated many times by Dominion throughout the entire lake. In addition, the U.S. Clean Water Act defines that the effluent discharge into Lake Anna shall not be increased more than 6.3 degrees F above the natural water temperature. Therefore recent LACA studies have shown the current natural North Anna River temperatures to be approximately 72 degrees F, which translated with the U.S. Clean Water Act requirements, indicates that Lake Anna water temperatures should not exceed 78.3 degrees F under current conditions.

Dominion's current 316(a) variance. Dominion has a current variance from the VPDES permit under section 316(a) (Thermal Discharges) of the federal Clean Water Act; however this variance is for the vicinity of the Dike 3 discharge and in the shallow reaches near its tributaries. Whenever the current VPDES permit is renewed, it is essential that VDEQ renewal process includes a detailed review of any previous variances granted.

Variances cannot be granted to a commercial/utility company for life or we could be faced with 150 degree F lake temperatures with the public having no recourse. Local conditions change and the VPDES renewal process must be pro-active in soliciting public comments prior to the draft of a new permit to ensure that it is as stringent or more stringent than the EPA delegation to the state of the Clean Water Act administration responsibilities. The VPDES process must examine whether local conditions have changed (i.e. increased use of lake by the public for recreation, heating of the entire lake to 90 degree temperatures creating unhealthy conditions, etc.) prior to any re-issuance of the waiver. The U.S. Clean Water Act 316A variance does not and should not permit the entire Lake Anna to be heated to unhealthy conditions. The clean water act also anticipates that the water discharge would occur in a free

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

flowing river or ocean, so the heat transfer would be carried downstream, not be in an impoundment with little water-flow that heats up throughout.

U.S. Code Title 33, chapter 26, subchapter III Section 1312 of the Clean Water Act re Water quality related effluent limitations indicates that effluent limitations should be imposed on those effluents that would not interfere with the attainment of water quality in a specific portion of the waters *to protect public health, shellfish, fish and wildlife and allow recreational activities in and on the water*

U.S. Code Title 33, chapter 26, subchapter III Section 1313 of the Clean Water Act re Water Quality Standards and Implementation Plans indicates that water quality standards to *protect the public health and welfare , plus fisheries and wildlife and recreational and other for intrastate waters shall be reviewed at least once each three year period.*

U.S. Code Title 33, chapter 26 subchapter III Section 1326 of the Clean Water Act re Thermal Discharges indicates that *more stringent thermal effluent limitations may be imposed* to assure the protection and propagation of shellfish, fish and wildlife in the body of water.

The entire Lake Anna is unique and it is primarily an impoundment where 99% of the water is recirculated, which in turn causes the entire Lake to heat up, since only about 1% of the water is released over the dam. Since the entire lake is 17 miles long and includes 13,000 acres of water (with depths of 50- 75 feet in many parts), and water temperatures exceed 90 degrees F throughout the lake, *it would seem that Dominion is routinely in violation of the U.S. Clean Water Act and the VPDES variance that they have.* Any additional heat transfer from the proposed 3rd unit water-cooling tower blowdown/discharge will only compound the problem, while the proposed unit 4 dry air cooling tower would have no additional heat transfer impacts to the lake.

The VPDES permit is one of the enforceable policies of the Coastal Program. If the current 316A variance granted by the VPDES is in violation of the Clean Water Act, it follows that any future VPDES permit will also be in violation if immediate changes to protect the public are not made.

4. Inconsistency with the Advisory Policies of the Coastal Program and the U.S. Clean Water Act. The Coastal Program promotes recreational uses of coastal waters that include swimming, boating, fishing, etc. The U.S. Congress passed the Clean Water Act to restore and maintain the chemical, physical, and biological integrity of the Nation's waters (33 U.S.C. section 1251(a). The national goal of the Act is to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water" (33 USC section 1251(a) (2).

5. One set of the North Anna River Users should not benefit at the expense of another set of users. Whatever, the final solution is for not decreasing the inadequate water supply in the small water shed; the solution should not benefit one set of users at the expense of another set of users.

For example, the lake levels should not be raised which could cause property damage to lake owners to quarantine more water so it could be released later to satisfy the downstream users at different times of the year.

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

Likewise the consumptive use of water and increased needs for water caused by population growth by downstream users should not cause the lake levels to be dropped so more water flow could be released to downstream users and then create mud flats throughout the lake.

6. Alternative Cooling Method. One alternative discussed, but not proposed in the SDEIS is to exclusively use dry Air Cooling for the 3rd unit, which would then negate any further water withdrawals from the small watershed and would also alleviate a major safety problem if the dam breaks or was blown-up by a terrorist attack. The dam break would necessitate the dam repair and then also requiring 3 years to refill the lake before you could restart any of the reactors.. *If the dam break occurred, 1/3 of Virginia could be without power for 3 years.* The dry-air cooling appears to be a feasible option, since this is same technology that Dominion has proposed for Unit 4 and is used by many overseas countries that do not have a local water source. In addition, many of the recommendations by VDEQ analysis to the NRC requests that the air cooling mode be used with unit 3 for 7 months of the year to reduce lake water drawdown and reduce the risk of a complete unit 3 shutdown. As defined in section 7.3 of the SDEIS dry cooling would eliminate the consumptive water loss associated with unit 3.

In its response to the DEIS, VDEQ's Division of Water Resources (DWR) expressed its preference for the once-through cooling process proposed for Unit 3 be changed to a dry cooling tower because *the once-through process results in less consumptive use of water than the unit 3 cooling tower proposed.* Also in its comments on the DEIS, DWR stated that it would have no concerns about this project if both the third and fourth reactors at North Anna were dry air cooled. The SDEIS must fully analyze the consumptive water use for this new cooling method.

7. Other related concerns:

To ensure that the proposed construction of a 3rd & 4th reactor will minimize the adverse affect to the quality of life for those that live and use Lake Anna, we also ask that you forward the following concerns to the appropriate Va. State departments for evaluation and comment prior to your making a final decision on the ESP or Federal Consistency Certification.

- a. Water temperatures should be limited to no more then 104 degrees F at the end of the discharge canal
- b. Point of compliance for all U.S. and water permits should be changed from Dike 3 to the end of the discharge canal to provide all Clean Water Act protections for all cooling lagoon users.
- c. Human health problems due to increased water temperatures and increased bacteria from increased water temperatures.
- d. Impact to wildlife, fish and endangered species (*DGIF recently identified two new bald eagle nest at Lake Anna*) as a result of increased water temperatures, reduced water flow, increased drought cycles and possible loss of food supply for endangered species due to fish kills as a result of high water temperatures in the cooling lagoons, reduced water flow.

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

e. Raising of lake level to retain more water for 3rd unit and resulting in destruction of adjoining property and also for retention for downstream users.

f. Lowering lake levels by increased water usage thereby causing increased drought cycles ranging from weeks to months.

g. Need to enforce U.S. Clean Water Act for recreating in and on the water in both the main reservoir and cooling lagoons. Currently the cooling lagoon and main reservoir waters exceed hot tub temperatures on many occasions.

h. Height of dry and wet cooling towers and facility buildings should not exceed tree line to protect the rural esthetic atmosphere of the community as Dominion indicated in Jan 06 stakeholder meeting.

i. Impact of 5,000 – 7,000 new workers (construction, periodic maintenance, professional) employees for 5 years on local roads and schools. This will create the need for new expanded roads before the project begins because of the workers and the three newly approved Louisa County subdivisions for about 1800 new homes in close proximity to the plant. These are possibly in anticipation of the new reactors being built?

New schools and other county infrastructure (police, fire, rescue squads, etc.) will need to be planned and built prior to any new tax dollars coming from Dominion. Louisa is now the 73rd fastest growing county in the U.S. Who is going to pay for all these new requirements? Is the Federal Government (NRC & other departments) going to give grants to Louisa County, similar to the 8 to 10 million dollar grant they gave to Dominion for processing the Early Site Permit?

j. Emergency evacuation on small 2 lane roads. Need for expanded road system to accommodate new workers and subdivisions.

k. Safety - spent nuclear fuel (where stored) & terrorist attack protections for plant, dam, etc)

l. Impact of additional fog and icing from wet cooling towers on local roadways.

m. Noise concerns emitted from 180/230 foot buildings that will travel long distances without having tree barriers to break the sound from giant fans.

8. Summary

a. We believe that the North Anna project as currently proposed is inconsistent with the Va. Coastal Zone Management Program as approved under the U.S. Coastal Zone Management Act. We support the concept of a 3rd and 4th reactors, but the above environmental items must be resolved prior to the issuance of any Federal Consistency Certification. **We request that a federal consistency certification not be issued until the above issues are satisfactorily resolved**

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA

(VDEQ Public Hearing-16Aug06)

b. We request that the U.S. Clean Water Act be enforced so the entire lake is not a hot tub with temperatures throughout the lake periodically in the 90's or greater that we have experienced in recent weeks and the waters at the end of discharge canal be no greater than 104 degrees F. Any previous Clean Water Act variances granted should be immediately revisited to ensure the 500,000 plus annual users/public's health, safety and welfare is protected and all U.S. Clean Water Act and other laws are complied with prior to any new VPDES discharge permit or variances being granted.

c. We also request that the all state and federal agencies stop using the designation, Waste Heat Treatment Facility to describe the cooling lagoons of Lake Anna so it is not viewed and treated similar to a sewage treatment facility by Virginia state departments. This designation affords no public protection for the over 8,000 users of the cooling lagoons on a typical summer weekend day.

d. Further, we request that the VPDES Point of compliance be changed from Dike 3 to the end of the Discharge Canal and the Cooling Lagoons start to be treated by all state agencies as quasi-public waters so the health, welfare and safety of those who use the cooling lagoons is protected.

The quasi-public water designation would recognize that Lake Anna is unique for thermal cooling (unlike other power plants that discharge heated waters into oceans or major free flowing rivers). It would also permit the state to treat the cooling lagoons as public waters and afford them the same protection as other public waters unless there is a nuclear disaster. This would also adhere to the recent Supreme Court Decision (S. D. Warren vs. Maine Board of Environmental Protection) to be adhered to which did not permit the privatization of public waters. If there is a nuclear disaster at the North Anna plant, this designation would be recognized that the cooling lagoons are adjacent to a nuclear power plant and in the event of a nuclear disaster only, nuclear by-products could be discharged into the cooling lagoons and be quarantined

e. We also request that VDEQ provide a cumulative impact analysis of the water withdrawal of the new unit 3 water cooling tower method. The analysis should identify the number of inches that the lake level will be lowered from the current conditions for each month of the year. It should also include the impact to downstream users and fisheries and potential impacts to groundwater users (current & planned) that include landowners, utilities, commercial and farming) surrounding Lake Anna throughout the small watershed. and downstream users.

f. We further request that all items defined above that are not part of the Coastal Zone Program be forwarded to the appropriate state or federal agency for review and comment prior to any Federal Consistency Certification being granted.

Thank you for your time and consideration of the above items,

Sincerely,

FRIENDS OF LAKE ANNA (FOLA), VIRGINIA**(VDEQ Public Hearing-16Aug06)**

Harry Ruth
For the Friends of Lake Anna

CC: U.S. Representative Eric Cantor (7th District) (via email – Lloyd.Lenhart@mail.house.gov)
Senator R. Edward Houck, 17th District of Virginia (via email – ehouck@adelphia.net)
Senator Ryan McDougal, 4th District of Virginia (via email – district04@sov.state.va.us)
Senator Charles Colgan, 29th District of Virginia (via email – cjcolgan@aol.com)
Senator Russell Potts, 27th District of Virginia (via email – district27@sov.stte.va.us)
Delegate Christopher Peace, 97th District of Virginia (via email – delcpeace@house.state.va.us)
Delegate Edward Scott, 30th District of Virginia (via email – delescott@house.state.va.us)
Delegate William Janis, 56th District of Virginia (via email – delbjanis@house.state.va.us)
Delegate Robert Orrock, Sr., 54th District of Virginia (via email – delborrock@house.state.va.us)
Delegate Clifford Athey, 18th District of Virginia (via email – DelCAthey@house.state.va.us)
Tony Banks – Dominion ESP Project Manager (via email – tony_banks@dom.com)
VDEQ – Ellie Irons – Environmental Impact Review - via email – elirons@deq.virginia.gov
VDEQ – Jeff Steers – No. Va. Regional Director – via email – jasteers@deq.virginia.gov
NRC – Jack Cushing – Environmental Project Mgr – via email – JXC9@nrc.gov
NRC – Public comments - North Anna ESP – via email – North_Anna_Comments@nrc.gov
EPA – Kevin Magerr- NEPA Environmental Engineer – via email – majerr.kevin@epa.gov

September 8, 2006

Ms. Ellie Irons, Environmental Impact Review Program Manager
Virginia Department of Environmental Quality (VDEQ)
629 East Main Street, Richmond, Va. 23219
Via email to elirons@deq.virginia.gov

Dear Ms. Irons:

On behalf of the Natural Resources Defense Council (NRDC), a national environmental organization with some one million members and on-line activists, some of who reside in Virginia, I am writing to comment on Dominion Power's request for state concurrence that the terms of its proposed NRC Early Site Permit (ESP) for two new reactors at its North Anna, VA nuclear power plant are consistent with the enforceable policies of Virginia's Coastal Zone Management Program (VCP).

After studying the matter, we find that we have a number of serious objections to the state providing its concurrence at this time. These concerns are summarized in the numbered sections below.

(1) Concurrence Now Would be Premature and Not in the Interests of Ensuring Protection of Virginia's Coastal Zone Management Area.

We draw your attention, first of all, to the fact that an ESP is not a required step in NRC's licensing process, but merely affords the applicant the opportunity and convenience of resolving and permanently disposing of site-specific environmental issues years—and possibly decades—ahead of the actual inception of reactor construction. While Dominion is seeking an ESP, other companies, such as Progress Energy, South Carolina Electric & Gas, Duke Power, and Constellation Energy, are electing to resolve environmental siting issues at the subsequent Construction and Operating License (COL) stage, and many of these companies have announced nominal target dates for submitting COL license applications that are in the same time frame as Dominion's (Fall 2007).

Moreover, environmental concerns that the NRC deems to have been "resolved" during an ESP proceeding cannot be raised again at a subsequent stage of NRC's "streamlined" licensing process. Faced with a project whose design is continually evolving, this foreclosing aspect of the ESP process is not in the state's favor. And finally, as you well know, once a state concurs, even with conditions, once having done so it "retains no further consistency authority over the project..." and cannot, through the CZMA, enforce its conditions after it has concurred (Federal Register, Vol., 65, No. 237, page 77127). But by objecting, VDEQ preserves its option either to continue its objection or to revisit the issue if Dominion agrees to conditions that are fully protective of the environmental equities at stake.

Since the ESP is an optional early stage process devised primarily for the convenience of the applicant, and the environmental impacts of Dominion's continually evolving proposal are at this point still defined by a general "plant parameter envelope," comprised

of nominal operating values rather than those pertaining to a site-specific detailed plant design, we see no advantage, and significant disadvantages, to VDEQ offering its concurrence (or conditional concurrence) at this time.

(2) Understanding of the Long-Term and Cumulative Environmental Impacts from Operating Dominion's Proposed Unit 3 "Wet-Dry" Hybrid Cooling System is Currently Insufficient to Support a Federal Consistency Determination..

A major issue confronting the VDEQ is whether the newly proposed "wet-dry" cooling system will reduce environmental impacts sufficiently to warrant concurring in Dominion's federal consistency determination for the pending ESP. VDEQ's "Consistency Status Report" to Dominion, dated August 3, 2006, states: "That new method involves a new, closed cycle wet and dry cooling method that would reduce the water demands associated with the once through cooling proposed in the original certification. During periods of relative surplus (when lake levels are at or above 250 feet above mean sea level), wet towers would be used. During dry periods (lake levels under 250 feet for 7 consecutive days or more, a dry cooling tower would be used, unless weather conditions dictate otherwise (the "maximum water conservation mode") [see Draft EIS Supplement, pages 3-8 and 3-9]

From our reading of the NRC's July 2006 Supplemental Draft Environmental Impact Statement (SDEIS), the preceding represents an incomplete and possibly mistaken view of how the proposed system would actually operate. During full power operation and "a hot and humid atmosphere at tower level" – fairly typical conditions for a peak power summer day in Central Virginia – the applicant is committing only that "*a minimum of one-third* of the rejected heat from Unit 3 would actually be removed by the dry tower system. The remaining excess heat would be dissipated by the wet tower system." [NUREG-1811, SDEIS, at 3-11 and K-4]

However, "During periods of favorable [but unspecified] atmospheric conditions, *more than one-third* (and *possibly* as much as 100 percent) of the rejected heat may be dissipated through the dry towers." [SDEIS, at K-4, emphasis added] "Therefore, although the MWC [Maximum Water Conservation Mode] mode uses less water than the EC mode, it is possible that *up to two-thirds of the total heat load* would be dissipated by wet cooling." [SDEIS at 3-11] Not only possible, but probable. It's clear to us that this is the only binding commitment the applicant is making. After all, operating the dry cooling tower increases the parasitic load and would cost Dominion money, so one would expect that like any profit-seeking entity, Dominion will at all times and in all places seek to minimize its costs while complying with its minimum commitment to dissipate "at least one-third" of the Unit 3 reject heat through dry cooling.

3. The SDEIS prepared by the NRC Staff Fails to Analyze a Reasonable Range of Reasonably Foreseeable Impacts from Operating Unit 3.

Here are some of the nominal critical parameters listed by the NRC for the originally

proposed once-through cooling system that VDEQ found unacceptable:

Rate of Lake water Withdrawal: 1,140,000 gallons per minute (gpm);

Induced Evaporation Rate: 28 cubic feet per second (cfs)

Additional Lake Level Drawdown under Drought Conditions: 3.4 feet

Here are the Supplemental DEIS estimates for the same parameters as above, for the wet-dry semi-closed loop system:

Maximum Rate of Lake water Withdrawal: 22, 269 gpm in (normal) "Energy Conservation Mode"

Induced Evaporation Rate: 20 cfs

Additional Lake Level Drawdown under Drought Conditions: 1.6 ft

These estimated impacts are still quite significant. In particular, the induced evaporation rate from operation of the wet-dry cooling system *is still 71 percent of the environmentally unacceptable once-through system*. The additional lake level drawdown under simulated drought conditions is still *almost half that of the once-through system*, and there are major uncertainties associated with this calculation that the NRC and Dominion have not bounded with a sensitivity analysis. (This analysis should be based on plausible excursions from and negative feedback interactions between their model's input parameters over the projected period in which the three reactors will be withdrawing water from Lake Anna.)

4. The Projected Lake Levels Pose Environmental and Energy Security Risks That Require Further Detailed Analysis Before Concurrence Can be Granted.

Under the Lake Level Contingency Plan (a condition of the North Anna plant's VPDES permit), releases from the dam are designed to maintain the lake level as close to 250 ft. above Mean Sea Level (MSL) as possible. When the lake level elevation drops below 250 MSL, releases from the North Anna Dam are reduced to 40 cfs. If the lake level drops below 248 MSL, releases are cut to 20 cfs. Releases are increased to 40 cfs when the lake level rises again to 248 ft MSL, and increased further when the lake level rises above 250 ft MSL.

According to the NRC's analysis, from 1978 to 2003, Lake Anna has been under the 250 ft MSL target level 62.7 percent of the time due to the combined effects of reduced inflows and the evaporative effects of operating Units 1 and 2. According to the NRC staff's historical simulation, the addition of the Unit 3 wet-dry cooling system would have increased that overall figure slightly, to 66.4 percent of the period spent under the target lake level, while also reducing the total time the lake level was at or above the target level by 3.7%.

So, *looking backward*, the addition of the Unit 3 wet-dry cooling system would clearly have reduced flows to the lower North Anna-Pamunkey river system. The biggest impact would have been registered in the increased number of days in which the lake level would have been at or below 248 feet, causing releases into the lower reaches of the North Anna river to be cut in half from 40 to 20 cfs. According to the NRC staff, these significantly reduced flow days would have increased by 6.2% over the 25 year period had the Unit 3 wet-dry cooling system been in operation.

As might be expected, there are numerous and severely debilitating problems with the NRC-Dominion water budget analysis for Lake Anna. As the NRC staff itself notes, "inherent in this analysis is the assumption that the 23-year period of record simulated would be representative of future conditions (e.g. inflows, precipitation, etc.) at the site." (NUREG-1811, SDEIS, Appendix K-13, emphasis added).

In light of the National Environmental Policy Act (NEPA) requirement that an EIS analyze all "*reasonably foreseeable*" impacts, the NRC analysis clearly falls short, because its water budget model is not predicated on any credible, forward-looking scientific estimates of what hydrological conditions within the North Anna-Pamunkey drainage could be like for the next 40 – 60 years, including population increases, water-table levels and recharge rates, competing uses for surface waters that could limit inflows to the lake, projected climate trends and attendant effects on evaporation rates, population increases, and so forth.

Moreover, the NRC staff estimate of historical inflows to the lake is not based on actual measurement of flows in the North Anna River drainage area, but estimated from flows in a smaller nearby (Little River) drainage for which there was historical data, and then scaling the results to estimate inflows to Lake Anna. Local precipitation is estimated based on rain gauges at the Richmond Airport, some 40 miles away. This methodology, and its historical bias, suggests that the model results are at best a gross approximation, and heightens the importance of a sensitivity analysis of the results

But there is no evidence that the NRC performed an analysis to test the sensitivity of its historical model results to plausible variances in the input data. For example, what is the effect on lake temperatures, on natural and induced evaporation rates, and coolant intake requirements if one assumes a small but steady increase in average surface temperatures over the next 60 years, punctuated by periods of that combine reduced precipitation with above-average summer temperatures?

One can envision the formation of a damaging negative feedback loop, in which increased natural heating of cooling intake water increases the evaporation rate of both the wet-dry and existing once-through cooling systems, leading to higher discharge temperatures and/or increased net withdrawals from the lake, leading to reduced lake volume via increased lake-surface and/or coolant tower evaporation (the heat has to be dissipated somewhere), leading to further heating of the reduced volume of intake water, and the

cycle repeats itself. At this point, no one knows how vulnerable the proposed setup is to such a negative feedback loop scenario, but under stressful conditions of increased climate warming, falling water tables, and reduced rainfall, regulators might well be faced under the current ESP proposal with choosing between shutting down or reducing power at one or more North Anna units, or incurring serious ecological damage to the North Anna-Pamunkey river system and the recreational uses of Lake Anna, which are now extensive. This is not a hypothetical danger, as water-cooled reactors in Europe and the United States, all located on water bodies or rivers more substantial than Lake Anna, were forced in the summer of 2006 to temporarily shut down or reduce power due to excessive coolant intake temperatures and/or excessive thermal discharges.

To bound the possible effects of Unit 3 cooling on Lake Anna water levels and downstream releases, the NRC analysis purports to examine the simulated impacts of operating Unit 3 wet-dry cooling during what was a critical drought period between April 2001 and February 2003. This simulation is hardly encouraging. Operation of Unit 3 with wet-dry cooling would have dropped the minimum lake level experienced during this period by an additional 1.7 feet, to 243.5 MSL. That is only 1.5 feet above the minimum operational plant intake level of 242 ft MSL, where the North Anna reactors would be forced to shut down. Given possible errors and plausible variances in the model's input data, we do not believe this provides a sufficient or safe operating margin.

Aside from miles of mudflats surrounding the residences, docks, marinas and State Park lining the shores of Lake Anna, this scenario suggests a disturbing vulnerability in Virginia's electrical supply. Units 1 and 2 already account for about 15% of the state's electric power generation, and adding Unit Three's 1560 MWe would probably boost the NAPS contribution to 25% or more of the state's total. Putting the state's public safety and economy at the mercy of a prolonged heat wave, or possible sabotage of the North Anna dam, does not suggest to us a responsible energy policy for the State.

5. The Status Quo is Not an Acceptable Baseline for NEPA Analysis.

The NRC analysis is implicitly predicated on the assumption that the current environmental impacts of Units 1 and 2 are themselves an acceptable environmental baseline, when such operations have already resulted in excessive temperatures in the main body of Lake Anna (i.e. well outside of the cooling lagoons), and produced many days of reduced flows into the lower reaches of the North Anna River.

A more credible baseline for analysis, and for estimating cumulative environmental impacts, would be the temperatures, flows and fauna in the North Anna river system before the river was impounded to form Lake Anna. For example, prior to dam construction, flows of 25 cfs or lower would occur for about 10 weeks once every 10 years. From NRC's modeling data, one can calculate that operation of Units 1 and 2 has increased that frequency to 30 weeks every ten years, tripling the number of low flow days that prevailed before impoundment of the North Anna River. Such an analysis would appear to be required under NEPA's requirement to consider cumulative impacts.¹

6. The NRC's DEIS Unreasonably Discards Dry-Cooling for Unit 3 as an Alternative Worthy of Detailed Analysis, but VDEQ Should Not.

In its prior review of NRC's original DEIS for the North Anna ESP, VDEQ's Division of Water Resources expressed its concern for the adequacy of Lake Anna as a source of cooling water, based on the fact that a once-through design transfers all the reject heat to the aquatic environment. According to the SDEIS, this increased heat load would have pushed warmer water out of the cooling lagoons further into Lake Anna, extending lagoon-like conditions into about 19% of the total volume of the lake, and reducing the productivity of fish populations that are sensitive to temperature. The Division looked at other nuclear reactors along the East Coast to compare the water resources available to them with the water resources at North Anna. This review demonstrated:

- Most of the intake locations are tidal and have an essentially unlimited water supply;
- Of the remaining locations, the North Anna location has the least abundant water supply, based on the average flow of a small watershed (342 square miles) and a medium-sized reservoir;
- A limited number of nuclear power stations are located on non-tidal rivers, but in these cases, the power plants are on large rivers such as the Connecticut and the Susquehanna; and
- The only location remotely similar to North Anna's situation is the Oconee plants on Lake Keowee in South Carolina, but immediately below Lake Keowee is Hartwell Lake, so the section of non-tidal stream affected by consumptive loss is very short.

Dominion itself has recognized that Lake Anna would not support once-through, wet-cooling, or even a combination wet and dry cooling system for a fourth unit, and is therefore proposing an exclusively dry cooling system for this unit, construction of which is purely speculative at this point. Of course, this fact begs the question of why dry-cooling could not also be employed for the proposed Unit 3. This alternative is briefly mentioned as a "System Design Alternative" in the Supplemental DEIS issued July 2006, but it is dismissed in three paragraphs (out of a several hundred page document). Its benefits are briefly summarized as follows:

"The use of a dry cooling system design versus the proposed combination wet and dry

¹ From SDEIS Table K-3: Data is from 1978-2003 inclusive, so 26 years x 52 weeks = 1352 weeks x 0.057 time fraction at 20 cfs reduced flow = 77 weeks over 26 years or 77/2.6 = 29.64 weeks over ten years.

cooling system design for Unit 3 would largely eliminate the [unit's] impacts on aquatic biota in Lake Anna and the North Anna River downstream. The Lake would not be heated by rejected heat from Unit 3, and there would be no additional consumptive water use." (SDEIS at 8-5, emphasis added)

Despite these very sizable environmental benefits, the SDEIS fails to identify the dry-cooling option as an "environmentally preferable" alternative deserving of further analysis. As justification, it merely states that "dry cooling systems are more expensive to build and are not as efficient as wet cooling systems." In support of this contention the SDEIS cites recent Dominion estimates that "the power needed to operate dry cooling towers would be 8.5 to 11 percent of the plant power output," or about 150 MW(e), reducing the net power output of the plant, versus a predicted parasitic load of "1.7 - 4 percent" to operate the wet-dry cooling system.

Relying on this scant body of evidence and analysis, the NRC staff concludes that, "based on its analysis that Lake Anna could support Unit 3 using a combination wet and dry cooling system, and given the environmental impact of increased use of resources [i.e. more land area and electricity] needed by using a less efficient dry cooling system, a combination wet and dry cooling system is [environmentally] preferable to a dry cooling system for Unit 3. (SDEIS at 8-5). But coincident with its judgment that a parasitic load of 150 MW(e)—if indeed it is that large—would be too burdensome on the Unit 3 project, Dominion and the NRC staff revised the ESP permit to increase the thermal output of Unit 3 by 200 MW(t), thereby allowing them to recover almost half of the electric output that would be "lost" to operation of the dry-cooling system.

According to GE, the ESBWR has a rated generating capacity of 1560 MW(e) and thermal power of 4500 MW(t). If the parasitic load to operate the dry tower cooling is 8.5-11 percent of plant output, then the load would be in the range of 133-172 MW(e), or "about 150 MW(e)" in the words of the NRC staff analysis. So the recent increase in the "plant parameter envelope" from 4300 to 4500 MW(t) implies that until very recently the "plant envelope" was 1490 MW(e), and that the recent power increase would allow recovery of some 70 MW(e) or about half of the estimated parasitic load for dry cooling..

Assuming that the project was deemed economically viable at the previous power level with the proposed wet-dry cooling system consuming up to 4% of output, or 60 MW(e): then the net output of Unit 3 with *wet-dry cooling before the power increase* would have been 1430 MW(e); and the net electrical output of Unit 3 with *dry-air cooling after the power increase* would be 1410 MW(e). It's difficult to understand why the difference of a mere 20 MW(e) would make or break the economics of a project of this magnitude, or lead NRC staff to summarily dismiss the dry-cooling option as being environmentally inferior to Dominion's preferred wet-dry system. One suspects that the real calculus here is not environmental benefits or lack thereof but the forecast profitability of the project, which may be marginal even with the eight-year 1.8 cent/kWh production tax credit. Whatever the real motives at work, the SDEIS analysis of the dry-cooling alternative for Unit 3 is clearly inadequate, and the VDEQ should demand more information on this

option before offering its concurrence.

7. Before Concurring that the Environmental Impacts of Activities Described in Dominion's Early Site Permit Are Consistent with the Enforceable Policies of the Virginia's Coastal Zone Management Program, VDEQ Has a Duty to Resolve Outstanding Issues Surrounding the Existing VPDES Permit for the North Anna Power Station,.

According to the testimony of citizen groups ("Friends of Lake Anna," and the "Lake Anna Civic Association") at the August 16, 2006 public hearing held in Mineral, VA., their water studies indicate that the North Anna River (3 miles before it enters Lake Anna) is 13 degrees cooler than the central part of the lake (above the Rt. 208 Bridge). These groups contend that several areas in the main body of the lake have recently experienced temperatures in the low to high nineties, which clearly exceed the 89.6 degree F temperature limitation in the Clean Water Act as defined in the NPDES.

We understand that Lake Anna is primarily an impoundment where the vast preponderance of the lake volume is re-circulated, which in turn causes the entire Lake to heat up. If water temperatures frequently exceed 90 degrees F at many locations around the lake, as alleged, we would concur in the assessment that Dominion appears to be in violation of the U.S. Clean Water Act and the terms of their current 316 variance, which cannot plausibly be interpreted to sanction thermal discharges sufficient to produce overheating of the entire lake. "The purpose of the variance is because the water temperatures in Lake Anna, *in the vicinity of Outfall 001* (i.e. the Dike 3 cooling water discharge point into the main body of the lake) *and in the shallow reaches near its tributaries*, occasionally exceeds the maximum criteria of 32C. Without the variance, Dominion would be subject to enforcement actions" [VA0052451 at 15, emphasis added]. This language does not appear to permit the kind of extensive heating that has occurred throughout the Lake, and suggests to us that Dominion might be subject to an enforcement action even under the terms of its existing variance. What does seem clear, however, is that excessive and heating of Lake Anna is occurring in violation of national standards.

In our view, the North Anna Power Station VPDES permit is one of the "enforceable policies" of Virginia's Coastal Zone Management Program. If the current 316A variance granted by the VPDES has led to overheating of Lake Anna in violation of the Clean Water Act, it follows that any future VPDES permit will probably also be in violation if immediate changes to protect the lake and downstream resources are not made a part of the state's concurrence process for federal consistency certification under the Coastal Zone Management Program.

We note that there are serious unresolved discrepancies between the Lake Anna water

temperature data and monitoring conclusions contained in the draft VPDES Permit of 12/22/05 [Fact Sheet for VPDES Permit VA0052451] and the data and conclusions reached by LACA and FOLA. According to the draft permit, "Except for [the summer of] 2002, the temperatures in Lake Anna did not exceed the 32 deg. C water quality criteria value. By letter dated July 5, 2005, the permittee formally stated that conditions have not changed substantially and thereby requested continuation of the 316 (a) variance." [VA0052451 Attachment 10, at 2.]

These conclusions are disputed by citizens groups that monitor water temperatures in Lake Anna, and we see no reason at this point to discount their independent findings in favor of the applicant's obviously self-interested assertions. The state must resolve this matter before any serious consideration can be given to concurring in a program that seems likely to produce *even further heating* of the lake (through evaporative loss reductions is average lake volume) in violation of CWA standards. If there is considerable uncertainty as to what the true current environmental baseline is, we do not see how anyone can claim to possess an adequate understanding of the incremental impacts on Virginia's CZMA from the addition of Unit 3 cooling to the mix, and therefore we urge that the state continue its objection to federal certification on that basis alone.

We also note that there appears to be a significant and consequential historical error in the permit as currently drafted. Specifically, the draft permit asserts, "The value of 13.54E9 BTU/hr is the limit *originally assigned to the facility in the 401 certification in 1973*, and is what was used in part to design (size) the WHTF. The limit is carried forward since *the design and operating parameters for Units 1 and 2 have not changed* and there have been no water quality problems with the heat leaving Outfall 001."

We believe this statement is most likely incorrect and must be further investigated. In fact, the thermal power of each existing NAPS was "uprated" (increased) by 4.2 percent in August 1986, for a total station increase of 236 MW(t). So the statement that the operating parameters for Units 1 and 2 have not changed since 1973 is incorrect. We note that a recent nuclear industry document cites an analysis performed for the Department of Energy regarding a further 5% uprating of these existing units with once-through cooling.² VDEQ should query Dominion regarding the thermal discharge effects of this potential upgrade before renewing the NAPS VPDES permit and variance or offering its concurrence in the granting of the Early Site Permit for Units 3 and 4.

We further note that the existing 316(a) variance is expressed as permission to discharge an unlimited condenser coolant outflow containing a certain *calculated* amount of reject heat, rather than as permission to discharge a *maximum* flow of x gallons per day that shall not exceed a specific (and continuously *measured*) outfall temperature. Such a loose compliance scheme obviously misses the combined effect on the cooling lagoons from both above-nominal discharges of reject heat and weather-induced heating, and therefore seems prone to chronically underestimating the heat transferred to the main

² Nuclear Energy Institute, "Nuclear Energy in Virginia" Factsheet, May 2006, p. 2

body of the lake at the Dike 3 discharge point. In support of this point, we note that the waters of the Lake Anna cooling lagoons reached 106 degrees on August 3, 2006 as recorded by local residents. The Lake Anna Civic Association (LACA) Water Quality Team recorded 104.6 degrees F at the end of the discharge canal on the same day at a different time.

We are aware of legal arguments advanced by some citizens groups that the Clean Water Act applies both to the main body of the Lake Anna reservoir *and* the diked cooling lagoons, since under the CWA cooling lagoons are considered “navigable waters” of the U.S. In addition, they point to the fact that the U.S. Army Corps of Engineers (USACE) which administers CWA Section 404—Dredge and Fill of Navigable Waters of the U.S.—requires the issuance of 404 permits for dredge and fill activities in the NAPS cooling lagoons. This is necessarily predicated on the determination by USACE that the cooling lagoons are jurisdictional waters of the United States. The “Friends of Lake Anna” (FOLA) assert that the definition for Waters of the United States under the Sec. 404 implementing regulations at 33 USC Section 328.3 is identical in all necessary respects to that of the NPDES regulations implementing 402 (40 CFR Section 122.2)

Thus, FOLA asserts that there is “no question” that the cooling lagoons are waters of the U.S. and as such are subject to three federal regulations:

- (1) 404 (Dredge and Fill of Navigable Waters of the U.S.. administered by the U.S. Army Corp of Engineers)
- (2) 402 (National Pollution Discharge Elimination System – NPDES)
- (3) 401 (Water Quality Certifications as administered by VDEQ).

FOLA asserts, “VDEQ and the Virginia State Water Control Board do not have the authority to de-nationalize national waters and designate the Lake Anna cooling lagoons as a waste heat treatment facility....Federally delegated programs such as VPDES can be more stringent then the national program, but cannot be less. The Virginia State Water Control Board cannot arbitrarily exclude U.S. surface waters from the regulatory purview of its delegated national program.”

FOLA wants monitoring of the VPDES permit compliance to begin at the end of the North Anna power plant discharge canal, since the cooling ponds are national waters. FOLA also wants VDEQ to correct the existing VPDES regulations that exempt cooling lagoons from the definition of surface waters. They allege that VDEQ is in conflict with the national program (NPDES – 40 CFR Section 122.2) providing that cooling lagoons/cooling ponds which meet the definition of waters of the U.S. are not waste treatment systems.

We have not yet had the opportunity to conduct the legal research necessary to form an independent opinion as to the strength of these legal claims, but we have noted some pertinent facts. The lagoons are navigable, not otherwise polluted except thermally,³ and

³ Except that elevated levels of PCB's have recently been found in fish that inhabit the lake, and the source of this pollution has not yet been identified.

are fed by the waters of some eight creeks and streams, in addition to the coolant water pumped from Lake Anna, and these waters ARE presumably exempt from appropriation as "private waters" not subject to regulation under the CWA. So irrespective of the legal merits to the claim that the State has erred in continuing to designate the lagoons as a private "Waste Heat Treatment Facility," Dominion cannot plausibly have it both ways, claiming these waters are indeed private, but then evading strict monitoring of CWA compliance at the Dike 3 point where these waters discharge into the regulated surface waters of the United States.

If VDEQ is unwilling to revise its longstanding regulatory approach to treating the lagoons as an unregulated "Waste Heat Treatment Facility," then at a minimum a strict CWA-complaint regime for detecting and preventing excessive heat loads and temperatures must be established at the Dike 3 discharge point to ensure that Lake Anna and the North Anna-Pamunkey river system are adequately protected. Such a regime must be in place and operating reliably before any concurrence is given to the ESP for Units 3 and 4. The existing poorly monitored variance appears to be nothing more than a license for Dominion to save money by spreading the burden of dissipating its thermal discharges where it doesn't belong, on the protected surface waters of the United States.

8. The NRC's Early Site Permit Review Process is Defective and Hinders Meaningful Participation by the Public.

The NRC has either deliberately devised or negligently allowed the ESP process to evolve in a way that overtaxes and bamboozles the public and even state regulators with a continuing and chaotic blizzard of ever-changing project documentation.

We note that the *Friends of Lake Anna* (FOLA) and others attempting to participate meaningfully in the process have definite objections to the way the NRC has chosen to conduct its review. As longstanding participants in the NRC's proceedings, we can only concur in the objections raised by FOLA to the current process:

"The NRC does not provide for any public scrutiny of a draft Safety Evaluation Report prior to its issuance. The public's safety should be the primary focus of any government agency. The public's review of any safety projects is essential. It appears the NRC is basing decisions on 5 year old data and has not considered recent property development around the lake or world events in any of their decision making. The NRC's staff projected population increase for the North Anna site through 2065 is not anywhere in the ballpark, Louisa County is currently the 73rd fastest growing county in the U.S.

"The NRC continues to accept many changes to the ESP, without automatically extending the public comment period each time a change is issued. Currently we are reviewing Revision 6 to the North Anna ESP, which is over 1,000 pages of technical data. In addition, just last month (July 2006) you issued a supplemental Draft Environmental Impact Statement relating to Revision 6 only, that was about 500 pages, which related to your first draft Environmental Impact Statement which was another 600 or 700 pages. You have also just within the

past few weeks, issued Revision 7 and a Revision 8 with no automatic extension of the public comment.

“While the Draft Environmental Impact Statement (DEIS) is still under review, Dominion continues to make revisions to issues that are analyzed [in the DEIS]. Hence our review of the DEIS is a moving target, without the NRC automatically extending the public comment period and giving the public sufficient time to review the changes. (emphasis added)

“It seems like everyone is spinning wheels in trying to keep up with all the Dominion and NRC revisions, Requests for Information, Responses for Request for Information, additional revisions, draft environmental impact statements that pertain to the earlier revision only, and [this] is making a mockery of an extremely important governmental process....”⁴

We would hazard a guess that the logistical, analytical, and sheer time demands of keeping up with the NRC’s chaotic permit review process have deterred many citizens from participating in it at all, and discouraged others as soon as they became aware of its daunting demands and perverse complexity. The process effectively excludes anyone from meaningful participation who does not have the patience, time, and particular skill set to wade through the documentary swamp the NRC has generated. While our review stops at Revision 6 of the ESP, we understand that Dominion has recently submitted Revisions 7 and 8. As we have other things to do in our professional lives besides track the NRC’s paper trail, we are unable at present to comment on those revisions. But given the NRC’s conduct in this matter, we obviously feel that VDEQ is entitled to treat the date of the last revision as constituting a new Dominion certification of federal consistency under the CZMA, and to extend the concurrence response date accordingly.

9. The NRC’s Site Comparison Methodology is Flawed and Obscures Important Environmental Advantages of Alternative Sites. We are far from persuaded by the NRC staff determination that another site is not “obviously superior” on environmental grounds to the North Anna site, and note that this criterion begs the question of whether one or more alternative sites may be merely “superior” on environmental grounds to the North Anna site. The NRC criterion employed in assessing whether a proposed ESP site should be rejected in favor of an alternative site is whether the alternative site is “clearly and substantially” superior to the proposed site. Under prior NRC rulings, a proposed ESP site may not be rejected in favor of an alternative site when the alternative is “marginally better” than the proposed site, but only when it is “obviously superior.”

According to the NRC, an “environmentally preferred” alternative site is “a site for which the environmental impacts are sufficiently less than the proposed site so that the environmental preference for the alternative site can be established” (NUREG-1811 SDEIS, p. 9-1, citing NRC proceedings from 1978). If the Early Site Permit EIS process

⁴ Presentation of Harry Ruth on behalf of the *Friends of Lake Anna* to the U.S. Nuclear Regulatory Commission public hearing on August 15, 2006 at Louisa Middle School, Louisa, Va., p. 2.

identifies one or more such “environmentally preferred” sites, then to uncover an “obviously superior alternative site,” the NRC staff then believes it must further determine that “(1) one or more important aspects, either singly or in combination, of a reasonably available alternative site are obviously superior to the corresponding aspects of the applicant’s proposed site” and (2) the alternative site does not have “offsetting deficiencies” in other important areas. A staff conclusion that an alternative site is “obviously superior” would normally lead to a recommendation that the application for the ESP at North Anna be denied.

Since the NRC staff employs inherently fuzzy qualitative – “SMALL,” “MODERATE,” and “LARGE” – rather than quantitative criteria to compare environmental impacts at the alternative sites, this allows important differences between sites to be obscured by choosing “MODERATE” to describe harmful impacts at the Proposed Site that are actually environmentally significant, while “offsetting deficiencies” at alternative sites – such as visual impairment of an historical view shed, can subjectively be described as “LARGE” (without considering design or mitigation alternatives) thereby eliminating any prospect of ever making an “obviously superior” determination for an alternative site.

Aside from this sloppy methodology, which seemingly allows the NRC staff to recommend any site Dominion prefers short of causing an obvious environmental catastrophe, the NRC’s NEPA process raises three sets of legal issues:

(1) Has the NRC’s shoddy ESP process violated citizen’s due process rights under the Administrative Procedures Act, the National Environmental Policy Act, and NEPA’s implementing regulations;

(2) Has the NRC’s tailored alternatives analysis unreasonably failed to identify one of Dominion’s alternative sites – such as the existing Surrey Plant on the lower James River – as “obviously superior” to the proposed North Anna site, when both the impacts of heat dissipation and water withdrawal at the Surrey site, and possibly other sites, are clearly less than they are at North Anna; and

(3) has NRC correctly analyzed – or indeed performed ANY analysis – of the vulnerability of the North Anna site to both climate change and terrorist threats – i.e. what are the impacts if the lake steadily dries up in a future local climate of reduced rainfall and higher than average temperatures, and what are the impacts if terrorists manage to blow a hole in the dam, suddenly draining the lake and disabling the three units that depend wholly or in part on cooling water withdrawals from the lake, or attack the spent fuel storage pools.

Analysis of the climate change scenario seems indicated given the projected 60 year life span of a reactor and the recent spate of reactor cooling problems triggered by heat and drought conditions in Europe and the Midwestern U.S. And a recent 9th Circuit Court decision directing the NRC to analyze the reasonably foreseeable environmental impacts of a terrorist attack on a California reactor’s spent fuel storage facility suggests that such analysis should be part of the NEPA coverage for the North Anna ESP. The lack of these analyses in the present DEIS and SDEIS is yet another substantive reason for the State to object to Dominion’s certification of federal consistency for the ESP.

14

Please do not hesitate to contact me if you have any questions regarding these comments.

Sincerely,

Christopher E. Paine
Senior Analyst, Nuclear Program
Natural Resources Defense Council

1200 New York Ave., N.W.
Washington, D.C. 20005

1535 Dairy Road
Charlottesville, VA 22903
434-244-5013

cc: Mr. Jack Cushing, Environmental Project Manager
for North Anna ESP Site Application,
U.S. Nuclear Regulatory Commission,
Washington D.C. 20555
Via email to JXC9@NRC.GOV

14

FRIENDS OF LAKE ANNA, VIRGINIA

14 June 2006

Ms. Ellie Irons, Environmental Impact Review Program Manager
Virginia Department of Environmental Quality (VDEQ)
629 East Main Street, Richmond, Va. 23219
Via email to elirons@deq.virginia.gov

Mr. Jack Cushing, Environmental Project Manager for North Anna ESP Site Application,
U.S. Nuclear Regulatory Commission (NRC), Washington D.C. 20555
Via email to JXC9@NRC.GOV

- Reference:**
- (1) Friends of Lake Anna letter dated 12 Jun 06, Subject Request for extension of Public Comment period re the Federal Consistency Certification of the Dominion Nuclear North Anna Application for the Early Site Permit (ESP) Review and other related items
 - (2) Lake Anna Observer newspaper – June 1, 2006 Public Notice for the Environmental Project Comment Period re the Federal Consistency Certification of the North Anna ESP re the Federal Coastal Zone Management Act.

Subject: Lake Anna Cooling Lagoon concerns with the North Anna ESP

Dear Ms. Irons and Mr. Cushing,

On behalf of the 2,650 persons represented by the Friends of Lake Anna, it is requested that following three items be addressed in the U.S. Coastal Zone Management Act Federal Consistency Review and also it is requested that the re-designation of terms, limitations of water temperatures and changes in the point of compliance should be reflected in all NRC documents that are created. See below for details of each item together with the two attached references.

- (1). **The Waste Heat Treatment Facility (WHTF) is an erroneous designation (not supported by state law) that is used throughout the ESP to describe the cooling lagoon portion of Lake Anna and its usage should be stopped. The cooling lagoons should simply be referred to as the "Cooling Lagoons".**
- (2). **Limiting the Water Temperatures at the end of the Discharge Canal to no more then 104 degrees F.**
- (3). **Changing the "Point of Compliance" from Dike 3 to the End of the Discharge Canal and re-designating the cooling lagoons as "quasi public waters".**

Our group, "The Friends of Lake Anna" is a citizen group whose mission is to protect Lake Anna (both main reservoir and cooling lagoons) and its surrounding landscape, together with any related concerns, within Louisa, Spotsylvania, and Orange Counties for the health, safety and welfare of current residents/users and for future generations. We are not anti-nuclear, nor do we have "not in my backyard" sentiments, but do support a wise and safe use of nuclear energy. Our goal is simply to protect Lake Anna for the 500,000 annual users and insure compliance with the law.

FRIENDS OF LAKE ANNA, VIRGINIA

(1). The Waste Heat Treatment Facility (WHTF) is an erroneous designation (not supported by state law) that is used throughout the ESP to describe the cooling lagoon portion of Lake Anna and its usage should be stopped. The cooling lagoons should simply be referred to as the "Cooling Lagoons". This WHTF designation has caused the cooling lagoons to be viewed and treated similar to a sewage treatment facility by many state agencies and as a result are viewed as private waters and not afforded the protections or other amenities afforded public waters. Please see below for details supporting this request.

a. Attachment 1 – "The North Anna Power Station – Lake Anna, Va. produced by Virginia Electric Power Company (VEPCO) in approximately 1970 denotes in part "The cooling lagoons and reservoir will be able to accommodate up to four million kilowatts of generating capability. Early in 1972, construction crews will put the finishing touches on a dam across the North Anna River in Louisa County. Slowly, over a period of many months, the water level will begin to rise higher and higher until a 13,000 acre lake is formed. When VEPCO's 17 mile long lake with more than 200 miles of shoreline is complete, experts believe the lake can be developed into a major recreational attraction. VEPCO is cooperating with the Virginia Commission on Outdoor Recreation in the preparation of a detailed development plan for the recreational use of the lake. The report which was later produced by the Theodore J. Wirth and Associates indicates the potential use of the lake could be in excess of two million visitors annually by the year 2000. The report also defines some potential commercial locations and the remainder would be private development of all lakeshore property, including the cooling lagoons.

Note: This 1970 VEPCO (which is the predecessor to Dominion Power) publication does not mention a WHTF, nor does it imply that the cooling lagoons will be treated any differently than the reservoir

b. Attachment 2 is a map showing Lake Anna as it exists today that was produced by Lake Anna Realty, a local real estate firm. The map has been enhanced by highlighting (1) the 3 dikes separating the reservoir from the cooling lagoons, (2) the ½ mile long Dominion Discharge Canal (3) The thermally heated discharge water circulation pattern going from the power plant through the discharge canal into the cooling lagoons;(4) then through Dike 3 and (5) then traveling back upstream to the power plant and (6) then repeating the cycle. Apparently with units 1 & 2 operating, 1.9 million gallons per minute are returned to the reservoir through Dike 3 when the lake is at a full water level of 250 Mean Sea Level (MSL) and only 18,000 gallons per minute are released over the dam. This is less than 1 % of the water flowing out of the reservoir from this small watershed and 99% going back upstream in the North Anna River.

The map also shows the 8 public streams that feed the cooling lagoons, where the public water flows through the cooling lagoons; then through Dike 3 into the North Anna River, which then eventually flows into the Atlantic Ocean by way of the Pamunkey River and the Chesapeake Bay.

Approximately 25% of the water cooling occurs in the North Anna Power Station Discharge Canal on Dominion property, about 50% of the water cooling occurs in the cooling lagoons waters and about 25% of the water cooling occurs in the North Anna River as a major portion of the water is circulated back upstream to the North Anna Power station. ***There is no "Treatment Facility" that processes the water in any fashion in the cooling lagoons.*** The water simply circulates at a rate of approximately 2 million gallons a minute as result of the North Anna Power station (unit 1 & 2) pumps, with only approximately 50% of the cooling actually occurring in the cooling lagoons.

c. The recent Supreme Court decision (No 04-1527 S.D. Warren Company, Petitioner, v. Maine Board of Environmental Protection et al) defines that ***state/public waters should not be privatized and used for private purposes.*** This decision also defines that there are two purposes of the clean water act (1) The protection and propagation of fish, shellfish, and wildlife and (2) providing for recreation in and on the water.

Note that our research indicates the cooling lagoons currently have approximately 2,000 landowners and 8,000 persons using the waters on a typical summer weekend day. The lagoons also have a minimum of 8 public streams feeding them. The lagoons are currently being treated as private by various state agencies (The fisheries part of Fish & Game does not investigate fish kills, but the law enforcement part does enforce boating and buoy placement laws; the Dept of Health does not monitor the cooling lagoons for any health risks; Va. Dept of Environmental Quality (VDEQ) water monitoring does not enforce the Clean Water Act within the cooling lagoons and also does not enforce the Clean Water Act at Dike 3 because of discharge permit waivers that have been previously granted to Dominion. Likewise there does not appear to be any state agency providing public protection for recreation in and on the cooling lagoon waters (as required by the Clean Water Act). Lake Anna has over 500,000 annual users.

FRIENDS OF LAKE ANNA, VIRGINIA

d. Over the past 8 months, the Friends of Lake Anna has requested from various state personnel that they provide the Virginia state law that defines that the cooling lagoons should be designated a WHTF and treated similar to a sewage treatment facility (with no protections to the general public as afforded by the Clean Water Act and clearly defined in the recent Supreme Court decision). We have never received it, because apparently it does not exist.

(2). Limiting the Water Temperatures at the end of the Dominion Discharge Canal to no more than 104 degrees F. The U.S. Consumer Product Safety Commission and the Virginia State Health Commission (Dr. Robert Stroube), and Hot Tub Manufacturers have identified that water in excess of 104 degrees F is dangerous to human health. Dominion has stated that they have never exceeded 103.6 degrees F at the end of the discharge canal for the past 35 years. There are many options (spray in the discharge canal, design of cooling towers, location of cooling towers, design of 3rd reactor complex, reducing thermal heat discharge with current reactors) that Dominion can use to maintain the 104 degrees F limit (if and when it would become necessary, which it has not for past 35 years, even in extreme drought conditions). Since Dominion has designated in the ESP that they are running their current reactors (units 1 & 2) at 93% capacity, maintaining the less than 104 degrees F temperature at the end of the discharge canal in the future should not be a problem. As described in the Supreme Court decision, Congress passed the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters, with the national goal being to achieve "water quality which provides for (1) the protection and propagation of fish, shellfish, and wildlife and (2) provides for recreation in and on the water"

In order to comply with the U.S. Clean Water Act of providing for recreation in and on the water and the recent Supreme Court decision, it is requested that any federal or state permits issued to Dominion limits the water at the end of the ½ mile discharge canal (before it enters the cooling lagoons) to no more than 104 degrees Fahrenheit.

(3). Changing the "Point of compliance" from Dike 3 to the End of the Discharge Canal and re-designating the cooling lagoons as "quasi public waters". Dominion currently has a discharge permit waiver from the Clean Water Act so they do not have to comply with water temperature limitations at Dike 3 of 89.6 degrees F. Changing the point of compliance to the end of the ½ mile long discharge canal and providing Dominion with a variance that they cannot exceed 104 degrees F with real time monitoring available to the public, together with Dominion providing a real-time corrective action if they approached 104 degrees F, would achieve the same result.

The "quasi public water" designation would recognize that Lake Anna is unique for thermal cooling, unlike other power plants that discharge heated waters into ocean's or major free flowing rivers. It would also permit the state to treat the cooling lagoons as public waters and be afforded all the same protections as other public waters unless there is a nuclear disaster. This would also permit compliance with the recent Supreme Court Decision. If there is a nuclear disaster at the North Anna plant, it would recognize that the cooling lagoons are adjacent to a nuclear power plant and in the event of a nuclear disaster/accident only, nuclear by-products could be discharged into the cooling lagoons and be quarantined.

It is requested that the point of compliance be changed to the end of the discharge canal so that any future discharge permit renewals for the North Anna power plant will be waived from compliance with the U.S. Clean Water Act with a maximum temperature of 104 degrees F, together with Dominion being required to take real-time corrective action if the water temperature approaches 104 degrees F and thereby in agreement with the recent U.S. Supreme Court Decision.

Thank you in advance for your kind consideration of our requests. Our other concerns with the water temperature, water quality, safety aspects with local roads, impact on schools in two of the top 100 fastest growing counties in the U.S., consideration of spent nuclear fuel, etc. are still under review. Each of these items and others will be addressed in separate correspondence after we have had sufficient time to review each. If you have any questions, please do not hesitate to call. I'll look forward to your response.

Sincerely,

Harry Ruth
For the Friends of Lake Anna
C/O 230 Heather Drive, Bumpass, Va. 23024

FRIENDS OF LAKE ANNA, VIRGINIA

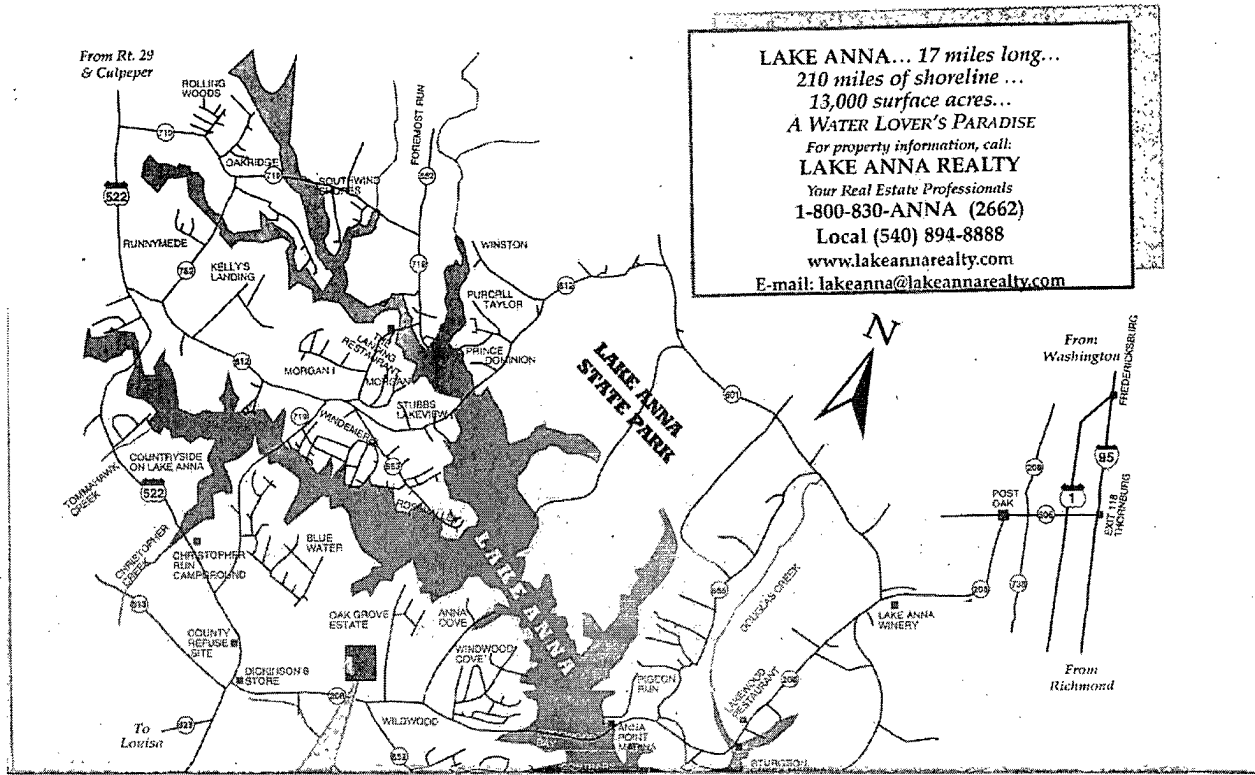
Phone 540-872-3632

Attachments (Use Adobe software to open)

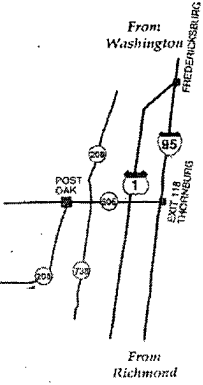
- a. Attachment 1 – “The North Anna Power Station – Lake Anna, Va. produced by Virginia Electric Power Company (VEPCO) in approximately 1970
- b. Attachment 2 is map showing Lake Anna as it exists today as produced by Lake Anna Realty, a local real estate firm

CC: U.S. Representative Eric Cantor (7th District) (via email – Lloyd.Lenhart@mail.house.gov)
Senator R. Edward Houck, 17th District of Virginia (via email – ehouck@adelphia.net)
Senator Ryan McDougal, 4th District of Virginia (via email – district04@sov.state.va.us)
Delegate Christopher Peace, 97th District of Virginia (via email – delcpeace@house.state.va.us)
Delegate Edward Scott, 30th District of Virginia (via email – delescott@house.state.va.us)
Delegate William Janis, 56th District of Virginia (via email – delbjanis@house.state.va.us)
Delegate Robert Orrock, Sr., 54th District of Virginia (via email – delborrock@house.state.va.us)
Tony Banks – Dominion ESP Project Manager (via email – tony_banks@dom.com)

Welcome to Lake Anna!

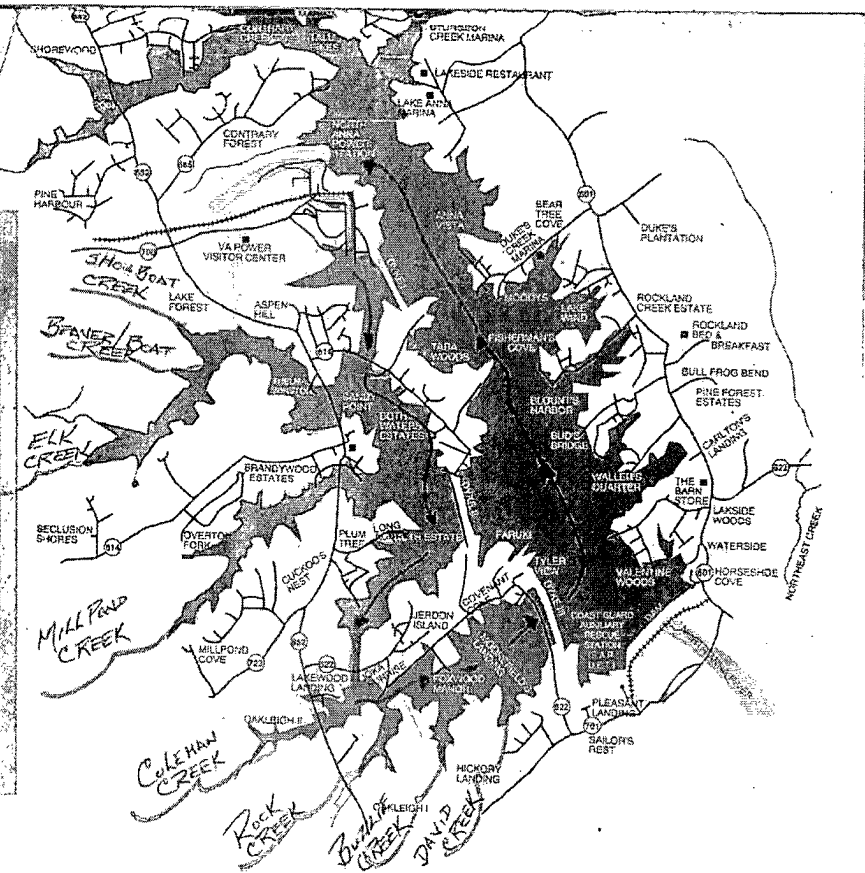


LAKE ANNA... 17 miles long...
 210 miles of shoreline ...
 13,000 surface acres...
 A WATER LOVER'S PARADISE
 For property information, call:
LAKE ANNA REALTY
 Your Real Estate Professionals
 1-800-830-ANNA (2662)
 Local (540) 894-8888
 www.lakeannarealty.com
 E-mail: lakeanna@lakeannarealty.com





Lake Anna Realty
"YOUR FIRST STEP TO LAKE LIVING"
OFFICE
1425 New Bridge Rd.
Mineral, VA 23117
1-800-830-ANNA(2662)
Local(540)894-8888
Fax(540)894-8626



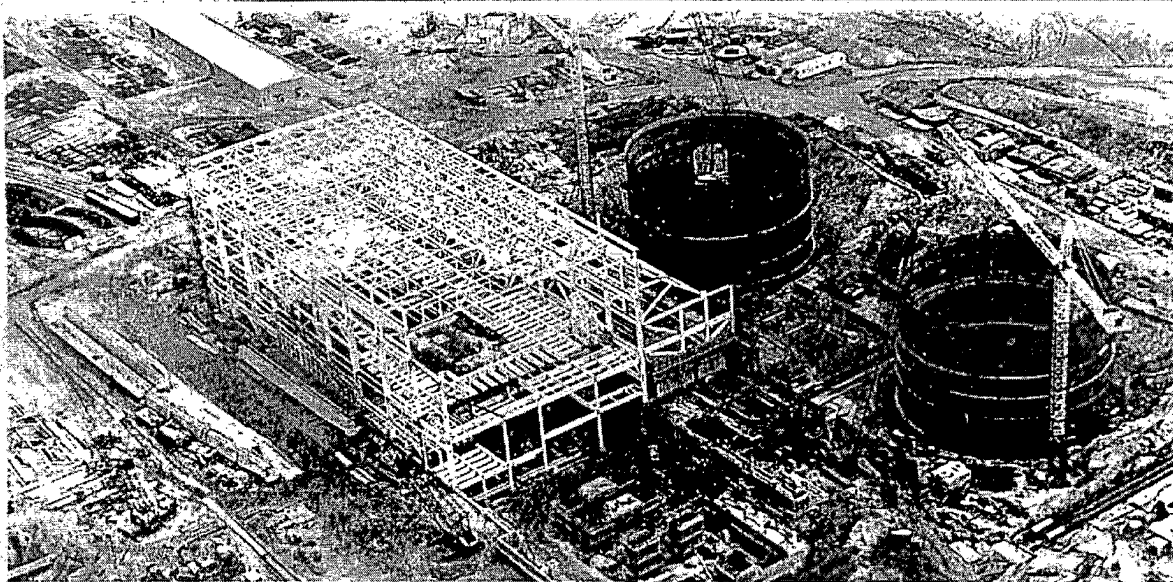


**The
North Anna
Power Station**

YEAR-1970

Lake Anna, Va.

BY: VEPSCO



The Station

The North Anna Power Station now under construction by Virginia Electric and Power Company in Louisa County will sit at the edge of a reservoir which will extend into Spotsylvania and Orange Counties.

Work is now in progress on two nuclear units scheduled for completion in 1974 and 1975. Plans have also been announced for the construction of two additional units, for service in 1977 and 1978.

The cooling lagoons and reservoir will be able to accommodate up to four million kilowatts of generating capability. The net capability of the four units is 3,744,000 kilowatts. Total cost of the power station and reservoir is projected in excess of one billion dollars.

The initial loading of nuclear fuel for the first two units is expected to cost \$49 million.

A peak construction force on the project will be more than 2,000 with a present payroll of \$400 thousand a week. It will take 75 to 100 employees to operate the station, with a payroll projected at about \$750,000 annually.

The reactors for the first two units are being supplied by Westinghouse Electric Corporation. The third and fourth reactors will be supplied by Babcock and Wilcox. Stone and Webster Engineering Corporation is the architect-engineer-constructor for the first two units.

The Lake

Early in 1972, construction crews will put the finishing touches on a dam across the North Anna River in Louisa County. Slowly, over a period of many months, the water level will begin to rise higher and higher until a 13,000 acre lake is formed.

The new, man-made lake is being created primarily to provide cooling water for the four-unit nuclear power station now under construction there. But the lake holds great potential for far more than just that.

When Vepco's 17-mile long lake with more than 200 miles of shoreline is complete, experts believe the lake can be developed into a major recreational attraction.

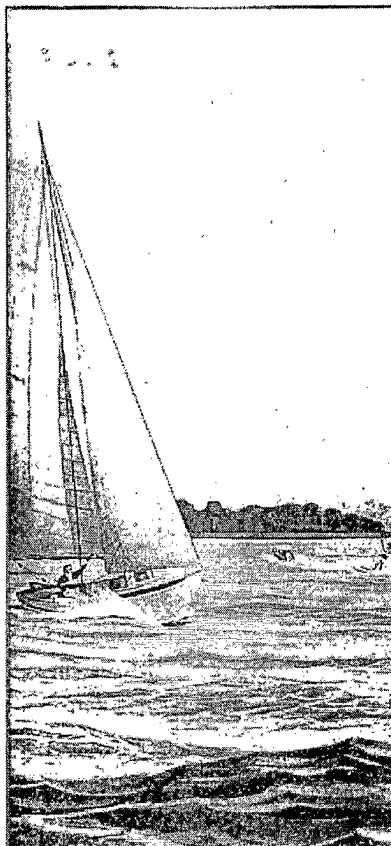
The Virginia Division of Parks is considering plans for the de-

velopment of a 2,000-plus-acre state park on the north shore of the lake in about 1976. Current plans call for both day-use and overnight facilities, including a beach for swimming, a boat launching area and a marina.

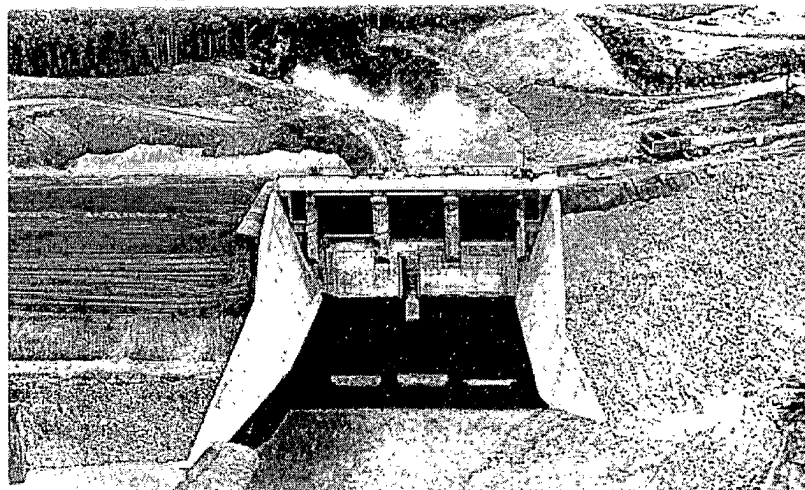
Vepco is cooperating with the Virginia Commission on Outdoor Recreation in the preparation of a detailed development plan for recreational use of the lake. Theodore J. Wirth and Associates, a nationally recognized recreational consultant, has been retained to study the region and recommend a plan for development.

A preliminary report by the firm indicates the potential use of the lake could be in excess of two million visitors annually by the year 2000. The area, according to Wirth, is capable of supporting not only a state park but two regional parks and a half-dozen public access areas. More than 1,500 boats could be accommodated on the main body of the lake, the firm said.

Some of the boats could be handled by the recommended public boat ramps on the lake, according to the report, and the remainder by private development of the lakeshore property.



Beaches capable of accommodating 4,000 swimmers are suggested, along with picknicking facilities for more than 5,000 and about 2,500 campsites.



The Fishing

The reservoir at North Anna has the potential to be one of the finest fishing spots on the East Coast.

A number of species are expected to carry-over from the existing river and stream system into the lake, including pumpkin-seed sunfish, spotted bass, gizzard shad and several types of catfish.

In addition the lake can be stocked with popular gamefish: Largemouth Bass, Muskellunge, Crappie, Bream, Brown Trout, White Bass, Coontail Perch, Coho Salmon and Striped Bass.

Sportsmen can anticipate reasonable catches within two years after the reservoir has filled. As the fish become established, and effective stocking-management programs are worked out, the fishing should become excellent.

Building Today

For Tomorrow's

Generation

Vepco

