

Blue Ridge Environmental Defense League

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March 18, 2011

Ellie Irons
DEQ Central Office
Office of Environmental Impact Review
629 East Main Street, Room 633
Richmond, Virginia, 23219;
ellie.iron@deq.virginia.gov

RE: Federal Consistency Certification for a Combined License and US Army Corps of Engineers Permit for North Anna Power Station Unit 3: Supplement to November 21, 2006 VDEQ Conditional Concurrence for and Early Site Permit

Dear Ms. Irons:

On behalf of the Blue Ridge Environmental Defense League and its chapters and members in Virginia, I write to provide our comments and recommendations on the proposed action.

Background

Dominion Virginia Power has submitted an application for a Combined License to the Nuclear Regulatory Commission for the construction and operation of proposed Unit 3 at the North Anna Power Station in Louisa County. The proposed project requires the issuance of a Point Source Water Pollution Control permit administered by the State Water Control Board¹ in conformance with National Pollution Discharge Elimination System (NPDES) program as set forth in the federal Clean Water Act.² Virginia DEQ must review the proposed licensing actions to determine if they are consistent with the Virginia Coastal Zone Management Program established pursuant to the federal Coastal Zone Management Act (CZMA) to protect the quality of natural resources in Virginia's coastal area.

The Coastal Zone Management Act³ gives Virginia the authority to review federal license or permit applications for consistency with the state's Coastal Zone Management Plan. The Act states:

[A]ny applicant for a required Federal license or permit to conduct an activity, in or outside of the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity will be conducted in a manner consistent with the program. [emphasis added]

¹ Pursuant to Va. Code § 62.1-44.15

² 33 U.S.C. § 1342(a)(1) (2007)

³ Coastal Zone Management Act, pursuant to Section 307(c)(3)(A), 16 U.S.C. § 1456(c)(3)(A)

Under federal regulations, 15 C.F.R. § 930.11(g), the effect on any coastal use or resource means *any reasonably foreseeable effect* resulting from a federal license or permit. The CZMA gives the states the power to veto federal permits for inconsistency with enforceable policies of state coastal programs. Regulations stipulate that “Applicants shall demonstrate that the activity will be consistent with the enforceable policies of the management program.”⁴ Enforceable policies are those “which are legally binding through constitutional provisions, laws, regulations, land use plans, ordinances, or judicial or administrative decisions, by which a State exerts control over private and public land and water uses and natural resources in the coastal zone.”⁵

Virginia Coastal Zone Management Program’s enforceable regulations include, *inter alia*, Point Source Water Pollution Control administered by the State Water Control Board pursuant to Va. Code § 62.1-44.15. Further, advisory policies were established within the Virginia Coastal Zone Management Program to serve as a guide during project planning. These advisories apply in Geographic Areas of Particular Concern such as wetlands and public recreation areas. The highest advisory policy priorities of the program are preservation, conservation and recreation and should, therefore, be addressed by permit applicants.

Comments

The principal error we hereby put before Virginia DEQ is that Dominion’s Federal Consistency Certification application asserts that the addition of a third water-cooled nuclear reactor would have no impact on Lake Anna. Their CZMA consistency application states:

A modification to Dominion’s existing VPDES permit (VA0052451) will be required to address surface water discharges from the operation of proposed Unit 3, including cooling tower blowdown discharges. The permit modification, which has been discussed with VDEQ staff, will address effluent guidelines specified in federal regulations (40 CFR Part 423), and compliance with VDEQ’s water quality standards.

Thermal discharges to Lake Anna for Unit 3 are discussed in Section 3.1.6, Point Source Pollution Control. With the proposed cooling system, no added heat from Unit 3 will be detectable in the WHTF or Lake Anna.⁶

Consumptive water use is intrinsic to the operation of North Anna Unit 3 and requires significant additional environmental review before any determination of consistency is rendered. The National Environmental Policy Act requires NRC to evaluate a range of reasonable alternatives and their impacts under 10 CFR § 51.45. Licenses for the construction and operation of nuclear power plants require Federal Consistency reviews

⁴ 15 C.F.R. § 930.58(a)(3)

⁵ 16 U.S.C. § 1453(6a)

⁶ Federal Consistency Certification, 3.2.6 Surface Water Discharge to Lake Anna, page 32, September 2010

if the permitted activity affects land or water uses in the coastal zone. North Anna is within the coastal zone.

Two pollutants in the effluent from Unit 3 would exceed water quality criteria: copper and tributyltin (TBT). TBT is an anti-fungal agent used in, among other things, industrial water systems such as cooling towers. TBT is toxic and causes immunosuppression.

Unit 3 would withdraw up to 22,000 gallons of water per minute from Lake Anna to replace water lost from the operation of the cooling tower. This means that North Anna 3 would withdraw over 11 billion gallons of water from Lake Anna annually.⁷ According to Dominion Environmental Report, Unit 3 would release 5,500 gallons per minute of cooling tower blowdown water into Lake Anna. Annually, 3 billion gallons of water would be returned to Lake Anna heated, with additional chemical contaminants—biocides and algacides used in cooling towers to prevent them from becoming clogged with mold and mildew—and with approximately four times higher concentrations of pollutants and minerals which were in the water withdrawn from Lake Anna. The difference between water withdrawal and discharge to the lake, the consumptive use, would be approximately 8 billion gallons per year. Further, blowdown water would be approximately 20 degrees hotter than the lake to which it is being returned. The proposed North Anna 3 nuclear power plant would use as its heat sink the process of evaporation with water withdrawn from Lake Anna.⁸

We would point out that Dominion Power is conducting a complete redesign of proposed North Anna Unit 3, substituting a pressurized water reactor for a boiling water reactor. The PWR allows the corresponding substitution of the planned mechanical draft system with an air-cooled condenser in which the steam that leaves the turbine passes directly to a dry cooling tower. There is no consumptive use of lake water and, without blowdown being sent back into the lake, contamination is reduced and water quality increased. The air-cooled condenser design offers substantial environmental benefits. Therefore, further environmental review is necessary to meet the requirements of the law and to protect public health and environmental quality.

Dominion's existing permit violates the law. In 2007 the Virginia State Water Control Board approved a permit for Dominion Virginia Power to discharge hot water from its North Anna nuclear power plant into Lake Anna.⁹ The permit was illegal for several reasons. First, under the U.S. Clean Water Act (CWA), Virginia must protect water quality of the lake, but the state failed to limit hot water discharges flowing from the North Anna nuclear reactors directly into Lake Anna. Second, heat is a pollutant and the maximum water temperature in cooling lakes is set by federal law: 89.6 degrees-F. Lakeside residents report that water temperatures reach dangerous levels in the summer,

⁷ North Anna Unit 3 Environmental Report Table 3.0-2

⁸ See Attachment: Blue Ridge Environmental Defense League Exhibit One, Affidavit of Arnold Gundersen, in the matter of Dominion-Virginia Power North Anna Unit 3 Combined License Application, Nuclear Regulatory Commission Atomic Safety and Licensing Board, Docket No. 52-017, filed October 2, 2010

⁹ Permit No. VA0052451

as high as 104 degrees-F. The Blue Ridge Environmental Defense League and others have documented the serious harm to Lake Anna caused by excessive heat levels. Third, the state water board applied the wrong law and analysis in concluding that part of Lake Anna was entitled to an exemption for waste treatment facilities. Dominion should no longer rely upon this error to exceed water quality standards at Lake Anna. Finally, the state water board violated federal law when it applied a less protective Virginia law. The granting of federal authority to any state to enforce the Clean Water Act and issue permits comes with a floor below which no state may go.

The State Water Control Board is charged with administering Virginia's state Point Source Water Pollution Control program under the federal NPDES program.¹⁰ Essentially, the Commonwealth of Virginia is running a Federal program – the NPDES – locally, and is not creating its own program. Accordingly, the state must follow the CWA to ensure that all permits measure up to the standards articulated by Congress. **The permit issued in this case represents an abject failure to uphold federal water quality standards.** By not limiting heat discharge into the “hot side” of Lake Anna, Virginia failed to regulate 3,400 acres of “waters of the United States” protected under the CWA. In 2009, the Circuit Court of Virginia ruled that the Board's rejection of regulatory jurisdiction over the “hot side” of Lake Anna violated state law, which had to be consistent with federal Clean Water Act jurisdiction over all “waters of the United States.”¹¹ Accordingly, because the “hot side” was a “water of the United States” and the Board misapplied a categorical exemption to exclude the “hot side” from regulatory protection, the court set aside the permit and remanded it to the Board for regulation. Although reversed on appeal, the case has now been accepted for review by the Supreme Court of Virginia and opening briefs have been filed. The opening brief states:

To ensure that 3,400 acres of Virginia's—and the nation's—waters are finally properly regulated, this Court should reverse the Court of Appeals and reinstate the circuit court's ruling remanding this permit to the Board for it to exercise its proper regulatory jurisdiction over this admitted “cooling lake.” In the alternative, and at a minimum, this Court should reverse the Court of Appeals and remand this permit to the Board for it to undertake a proper case-specific analysis as to whether the “hot side” requires regulation under the Board's state- and federal-law jurisdictional mandate.¹²

Lake Anna is part of the York River Basin and is designated a Class III water under Virginia's water quality standards regulations. Under this classification, the upper limit on temperature is 32 degrees Celsius, or 89.6 degrees Fahrenheit.¹³ The data demonstrate that both hourly and mean temperatures in the “hot side” of Lake Anna routinely exceed this 32-degree Celsius threshold from May through October. These temperature violations are due to the discharge of heat from the North Anna Power Station into the

¹⁰ See Va. Code Ann. § 62.1-44.15 (2008)

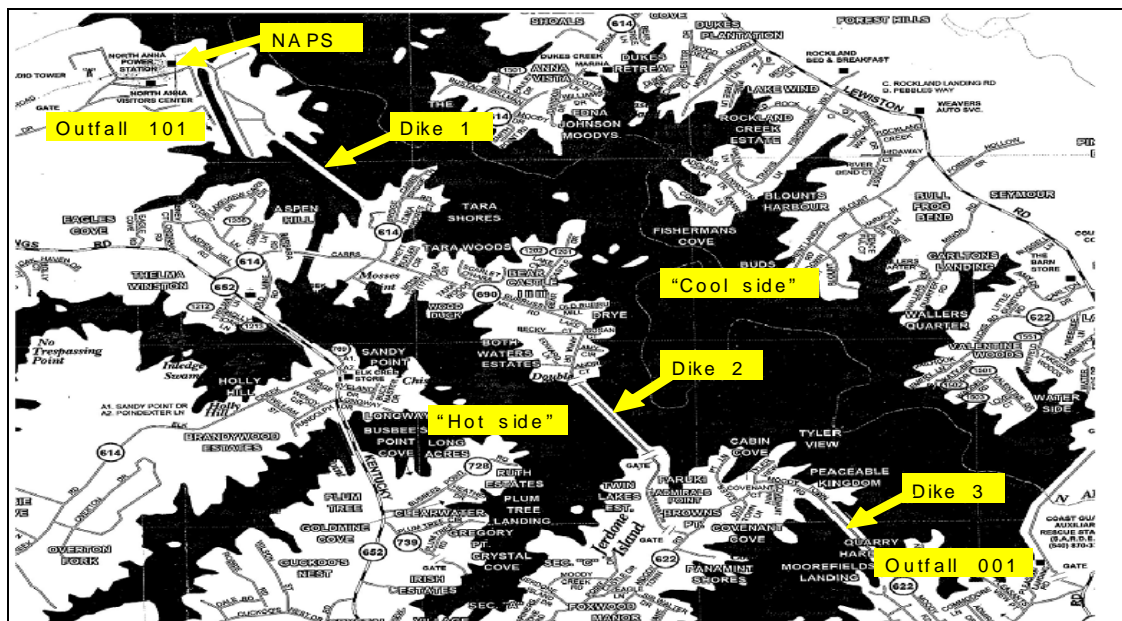
¹¹ *Blue Ridge Environmental Defense League v. the Commonwealth of Virginia*, In the Circuit Court for the City of Richmond, Case No. 07-6083

¹² Opening brief of appellant in *Blue Ridge Environmental Defense League v Commonwealth of Virginia*, filed in the Supreme Court of Virginia, January 19, 2011, Record No. 101476

¹³ 9 VAC 25-260-50 (2007).

“hot side.”¹⁴ Therefore, the “hot side” is in continued violation of the water quality standards and the CWA. Since it has not applied for the variance required by the CWA at the Outfall 101 discharge point (see map below), the Board committed an error by issuing a permit that allows for continued degradation of state and federal water quality standards.

In fact, the so-called hot side and cold side are but one single lake. Dockside Lines, No. 6, published by Dockside Realty, states: “Second largest lake in Virginia, 13,000 acres, 272 miles of shoreline.” Advertisements offered for sale include references to “the Private Side of Lake Anna near Dike 3 with... waterfront deck, sandy beach, covered boathouse...” Another ad states, “Deeded boat slip with access to private side of Lake Anna.” And a third, “There are two sides to Lake Anna: the ‘Private’ and the ‘Public,’ also referred to as the ‘warm’ and ‘cold’ sides to many.” Plainly, real estate agencies promote boating and other recreational use of all of Lake Anna.



Conclusion

Consumptive water use is intrinsic to the operation of North Anna Unit 3 and requires significant additional environmental review before any determination of consistency is rendered. Dominion’s present thermal discharge permit for North Anna Units 1 and 2 has been ruled out of compliance in circuit court, and the case is now under appeal. The addition of a third nuclear power reactor at North Anna would certainly increase the discharge of thermal pollution to and the concentration of toxics in Lake Anna, causing further degradation of water quality. A dry-cooling system should be evaluated by DEQ in order to eliminate these impacts. A consistency determination by DEQ must ensure enforcement of the approved coastal zone management plan including point source water pollution control regulations. Certification must show that the proposed activity will

¹⁴ See R. at 2929 (stating that the North Anna Power Station routinely heats water by 14 degrees Celsius).

comply with the enforceable policies of the state's approved program. Also, advisory policies established within the Virginia Coastal Zone Management Program serve as a guide in Geographic Areas of Particular Concern such as wetlands and public recreation areas at Lake Anna. The highest advisory policy priorities of the program are preservation, conservation and recreation and should, therefore, be addressed by the permit applicant.

Thank you for the opportunity to present our views. Please contact me about any decisions or further proceedings in this matter.

Respectfully,

A handwritten signature in black ink that reads "Louis A. Zeller". The signature is written in a cursive style and is followed by a horizontal line.

Louis A. Zeller

Attachment