



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

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April 21, 2009

Ms. Teresa Rogers  
Appalachian Power Company  
Hydro Generation Department  
P.O. Box 2021  
Roanoke, VA 24012

RE: Comments on AEP-Appalachian Power Company Application for New License Preliminary Licensing Proposal (PLP) and Draft Management Plans (DMP) Claytor Hydroelectric Project, Pulaski County, Virginia

Dear Ms. Rogers:

The Virginia Department of Environmental Quality (DEQ) has reviewed the January 2009 PLP and DMP for the above-referenced facility and has participated in task-specific work groups over the last year. DEQ appreciates the opportunity to participate in the development of the licensing proposal and offers the attached comments regarding the Draft Management Plans in Appendix A of the PLP document and the relicensing/study reports.

If you have any questions regarding DEQ's comments, please contact Scott Kudlas, Office of Surface and Groundwater Supply Planning at 804.698.4456 or [swkudlas@deq.virginia.gov](mailto:swkudlas@deq.virginia.gov).

Sincerely,

A handwritten signature in cursive script that reads "Brenda Winn".

Brenda Winn  
Senior Environmental Specialist / Permit Writer

Attachment

cc via electronic mail:

Liz Parcell, APCO  
Mike McLeod, DEQ-BRROR  
Tammy Stephenson, DEQ-BRROR  
Jay Roberts, DEQ-BRROR  
George Devlin, DEQ-BRROR  
John Copeland, DGIF  
Bill Kittrell, DGIF  
Mike Pinder, DGIF  
Brian Watson, DGIF  
John Kauffman, DGIF  
Bob Munson, DCR

## DEQ Comments on Claytor Hydroelectric Project Preliminary Licensing Proposal (PLP) and Draft Management Plans (DMP)

### 1. Draft Water Management Plan

#### a. Section 1:

Third paragraph: There appears to be an overlap in time frames when describing the constant downstream flow mode of operation, and an apparent conflict between pool elevations during this mode of operation.

Sixth paragraph: When describing the *peaking* mode of operation, please indicate whether the minimum flow requirement of 750 cfs is an average daily flow. DEQ suggests inserting the average daily flow during *non-peaking* hours each day.

#### b. Section 2A:

Regarding the minimum flow by requirement of an average of 750 cfs or the inflow, whichever is less, DEQ supports a change from a *daily* average of 750 cfs to an *hourly* average of 750 cfs.

For the winter period of December 1 through March 31, DEQ supports a higher minimum flow of 1,200 cfs to benefit biota and recreation, based on the instream flow studies conducted as part of the PLP process.

#### c. Section 2B:

DEQ is supportive of an extension of the period when the Levelized Flow mode of operation would occur (April 1 through November 30). DEQ suggests a modification to the proposed Levelized Flow mode of operations during weekends when inflows reach or drop below approximately 1,000 cfs. This suggested modification would enhance recreational opportunities without jeopardizing the minimum flow requirement. DEQ recommends that a demonstration study be conducted by AEP in order to determine the effects of this suggested modification on flows and to identify any adjustments that may need to be implemented. This would also provide recreationists with an opportunity to experience the resulting conditions and make comments. DEQ suggests an August-through-October time frame for two years, beginning in 2009, and conducting surveys to determine recreational user's responses to these flows.

Please include the time required to lower the pool elevation to 1841.0 feet when anticipating a high inflow event.

DEQ supports changing the "down-ramping" time period after peaking has ended to a minimum of 30 minutes.

- d. Section 2D: Drawdown times should be noticed to the public as far in advance as possible. These periods may create opportunities for the residents to conduct maintenance on shoreline protection, docks, etc., and may present an opportunity for vegetation management tasks to be implemented.
- e. Section 2E: Please be aware that the VWP Permit Program has its own variance process regarding relief or deviation from issued permit conditions, where applicable. Any permit holder may be required to follow additional procedures than those identified in this section of the plan.
- f. Section 4: DEQ supports the request and comments made by the Virginia Department of Game and Inland Fisheries in March 2009 regarding the inclusion of a freshwater mussel management plan in the license application.
- g. Section 4B: Please explain how total inflows to the reservoir are interpolated or estimated, including the use of data from the Allisonia and Galax gaging stations.
- h. Section 5: DEQ suggests adding the following report items: 1) Summary of any variances issued, including the circumstances under which each was requested and the actions taken during each variance period; 2) Discussion of any known or reported safety concerns that occurred during the reporting period; 3) Discussion of any declared drought events and the steps taken to adjust operations, if applicable.

## 2. **Draft Shoreline Management Plan**

- a. In general, the VWP Permit Program perceives that the message to the public in this plan is that AEP is the main permitting/authorizing body. Therefore, if AEP approves a proposed activity, the applicant/resident may proceed. We believe that more emphasis is needed regarding the involvement of local/state/federal resource agencies and activities in surface waters (wetlands, streams, open water) that may be regulated by each agency's permit programs. The statement made in Section 2.5.1, No. 3 under the "Regulations include:" subsection may be an example of language that should be reiterated elsewhere in the plan. DEQ suggests revising the plan where appropriate.
- b. Section 1.1:
  - i. Please confirm whether livestock access to the reservoir is currently allowed and if this activity will continue to be allowed by AEP.
  - ii. Approval for some activities may be required from local, state, and/or federal agencies as well. It is important to emphasize this potential throughout the plan so that the public does not perceive AEP to be the "one-stop-shopping" source of permits.

C. Section 2.1.3:

- i. Please clarify whether palustrine emergent wetlands would be described as persistent or nonpersistent.
- ii. Please note that wetlands that establish on debris or island areas may still be jurisdictional to local/state/federal permit programs.

d. Section 2.1.7: Please identify which state and federal regulations were reviewed and taken into consideration in the development of regulations contained in the plan.

e. Section 2.3:

- i. When referring to regulations in this section, DEQ believes that confusion may occur as to which regulations are being referenced. See DEQ comment 2.a above. Please clarify this section where applicable.
- ii. From the VWP Permit Program perspective, areas described as Impact Minimization Zones are of equal consideration for permitting purposes as Conservation/Environmental areas. Activities in surface waters in either type of area may require permits from the local/state/federal governments. Please clarify this section to note the potential need for agency coordination for activities in surface waters.

f. Section 2.4: Streams should be considered as part of the same area types as wetlands. Please add streams to the parameter list for Conservation/Environmental.

g. Section 2.5: Please clarify that special rulings may involve coordination with local/state/federal resource protection agencies.

h. Section 2.5.1:

- i. Second paragraph: Please clarify that authorizations may also be required from local/state/federal resource protection agencies.
  - ii. Fourth paragraph: Prohibited uses should be expanded or clarified to ensure that the public understands that other prohibitions may exist for activities in surface waters per local ordinances, or state or federal law and regulations. These may be too numerous to list out in the plan, but a clarification is warranted here.
- i. Sections 2.5.2; 2.5.3; 2.5.5.: Please clarify these sections to include language regarding the potential need for local/state/federal permits for activities in surface waters, where applicable.

- j. Section 2.5.4: Paragraph No. 3 under the subsection “Low Density Multi-Use” regarding local/state/federal permits would be better placed at the beginning of Section 2.5.4 because it applies to all four types of Low Density Use.
- k. Section 2.5.6: The procedures in the introductory paragraph do not negate or override the application requirements for the public to apply for local/state/federal permits for activities in surface waters, with or without the prior review of APCO. This paragraph needs to clarify that APCO is not the final decision agency for authorization of work in surface waters. DEQ encourages pre-construction coordination; however, there is no regulatory time period requirement for completing such coordination, and 30 days may not be sufficient. Should APCO contact DEQ for comment on a particular proposal in surface waters, DEQ may require formal submittal of a Joint Permit Application in order to make a permit need determination (referred to as a case decision) on the proposed activity in surface waters. By regulation, DEQ has 15 days to determine if the application is complete. Once an application is complete, processing a case decision incurs other regulatory timeframes, depending on the outcome.

Also, should a DEQ permit be required for a proposed activity in surface waters, the need for compensatory mitigation is determined by DEQ, and DEQ must approve any mitigation proposals by the applicant. Mitigation may be required by DEQ for permanent wetland, stream, or open water impacts.

- l. Section 2.5.7:
  - i. As a point of information, DEQ has currently provided unconditional Section 401 Certification of the U.S. Army Corps of Engineers Nationwide Permit NWP-13, meaning that a separate Virginia Water Protection permit is not required for activities that qualify for the NWP-13. However, DEQ certification of the Corps’ regional and nationwide permits is subject to change. Please refer to DEQ’s web site <http://www.deq.virginia.gov/wetlands/permitfees.html> for current certification information.
  - ii. In number 6 under Section 2.5.7, please explain that is meant by the joint ACOE/AEP application. If this is referring to the Standard Joint Permit Application, please clarify the item. DEQ is a participating agency in the Joint Application Process and will not accept another form of application other than those specifically stated in the Virginia Water Protection Permit Program regulation.
- m. Section 2.5.7.1 and 2.5.7.2: Please reference the source from which these standards were adopted.

n. Section 2.5.8:

- i. Please revise the introductory paragraph to clarify that VDEQ has jurisdiction over all activities in surface waters of the Commonwealth, and that DEQ has authority to act separately from the ACOE. Following is the suggested revision to the opening paragraphs:

...[strike third sentence and replace with: "The Virginia Department of Environmental Quality (DEQ) is the state department responsible for overseeing these activities."]

[strike fourth sentence and replace with: "DEQ often works in conjunction with the ACOE but may act separately from the federal agency when determining the need for a permit."]

[strike fifth sentence in entirety]

- ii. Please revise the bullet paragraphs to clarify permitting requirements. Following is the suggested revision to the opening paragraphs:

[First bullet: DEQ has currently provided conditional Section 401 Certification of the U.S. Army Corps of Engineers Nationwide Permit NWP-19, meaning that a separate Virginia Water Protection permit is not required for activities that qualify for the NWP-19, provided that 1) any compensatory mitigation meets the requirements in the Code of Virginia, Section 62.1-44.15:23 A through C, and 2) dredging is not used to create a deep space for water withdrawal. Therefore, DEQ suggest revising the last sentence of the first bullet to "An individual permit is required from AEP and the ACOE for any dredging that does not fall into this category, and a permit may be required by DEQ."]

[Second bullet: please explain that is meant by the joint ACOE/AEP application. If this is referring to the Standard Joint Permit Application, please clarify the item. DEQ is a participating agency in the Joint Application Process and will not accept another form of application other than those specifically stated in the Virginia Water Protection Permit Program regulation.]

- o. Section 2.5.9: Please clarify that authorizations may also be required from local/state/federal resource protection agencies.

- p. Section 2.5.10: DEQ encourages a strict buffer policy for water quality reasons. As a point of information, any vegetation removal in wetland, stream, or open water areas may

require a Virginia Water Protection permit, especially if disturbance of the ground surface occurs (e.g., grubbing stumps).

- q. Section 3.3: Please consult DEQ-Central Office VWP staff when developing the language for this section.
- r. Section 3.4: Please clarify section to note that AEP may not be the only body enforcing activities at the project, whether in water or on land.

### 3. **Draft Habitat Management Plan**

- a. DEQ believes that more emphasis is needed regarding the involvement of local/state/federal resource agencies and activities in surface waters that may be regulated by each agency's permit programs. The statement made in Section 2.5.1, No. 3 under "Regulations include:" of the Draft Shoreline Management Plan may be an example of language that should be reiterated elsewhere in the habitat management plan. DEQ suggests revising the plan where appropriate.
- b. Section 2.0: Streams should be included as a protected area. Please revise the entire section to include streams where appropriate.
- c. Section 2.2: DEQ suggests clarifying the opening paragraph by including that mitigation will be determined on a case by case basis after coordination with appropriate resource agencies. Also, DEQ and/or the U.S. Army Corps of Engineers determine appropriate mitigation actions for impacts to surface waters under our jurisdictions.
- d. Section 2.3: Encroachment onto surface waters for enhancement activities may require permits from local/state/federal resource agencies.

### 4. **Draft Vegetation Management Plan**

- a. Section 6.0:
  - i. DEQ cautions the use of any method that eliminates submerged aquatic vegetation in whole, as native species may be mixed with non-native or invasive species.
  - ii. The use of herbicides in or near surface waters under the DEQ's jurisdiction may require prior approval from one or more DEQ programs.
  - iii. DEQ does not recommend the use of water level draw down as a weed control method, unless the draw down is conducted for other purposes than weed control, such as dam maintenance. Should such a draw down occur, this may provide a good opportunity for weed removal.

- iv. Any methods that require the disturbance of aquatic bottoms and/or sediments may require permits from the VWP Permit Program. Use of machinery in waters should not be conducted without the proper permit determinations from resource protection agencies.
- b. Section 7.3: DEQ recommends that the Virginia Marine Resources Commission (VMRC) should be consulted due to their potential jurisdiction over activities on subaqueous bottoms in drainage areas greater than five square miles.

## 5. Draft Water Quality Monitoring Plan

- a. Please increase the trigger inflow for evaluation of bubbler system to less than 826 cfs. (Reference Preliminary Licensing Proposal Page 4-50 Figure 4.3.2.1-6). A minor change to the PLP graphic referenced above by addition of reservoir inflows to the graphic would better demonstrate 7Q10 versus both DO and temperature or at a minimum change the color of the X axis values (Dates) where inflow is below 7Q10.
- b. Please change Page 2; Section 3.0 second paragraph; first sentence to: Monitoring of the tailrace will be conducted as described in Section 4.0 to ensure the low dissolved oxygen levels in the tailrace have been successfully mitigated (discharge remains above water quality standards of 5 mg/l (~~allowable~~ average daily) and 4 mg/l (~~allowable~~ minimum instantaneous).)
- c. Section 4.1: DEQ believes that data collection should continue for five years regardless of findings during the first two years.
- d. Please change Page 2; Section 4.0 at 4.1 first paragraph; fifth sentence to: If during the initial five years of data collection, it has been determined that a low flow period hasn't occurred (inflows of less than ~~750~~ 826 cfs) and/or persistent depressed DO concentrations (<5.0 mg/l apart from inflow) are not observed the monitoring period shall ~~may~~ be extended.
- e. Please add an additional separate trigger mechanism to be included in the Water Quality Monitoring Plan through prior examination of continuous DO data results for bubbler system evaluation and apart from inflows only. Where, regardless of inflows DO is persistently less than 5.0 mg/l. This would require more frequent download of data during stratification periods to review data and initiate the bubbler system evaluation based on DO results (Reference Preliminary Licensing Proposal Page 4-50 Figure 4.3.2.1-6) [See Item 5.f below].
- f. Please change Page 3. Section 4.0 at 4.1 first paragraph; fifth sentence to: ~~If there is~~ Should a sustained period of low inflow conditions (~~<750~~ <826 cfs) occur and/or DO observations reveal persistent depressed concentrations (< 5 mg/l apart from inflow) from July to September, additional monitoring in the forebay at four transect sites ~~will~~ shall be ~~considered~~ conducted.

- g. DEQ assumes any physical measurements with regards to the Virginia Department of Game and Inland Fisheries proposal for a Mussel Management Plan shall be incorporated within the proposed Mussel Plan.
- h. Three major observations relating to water temperature were made in the Claytor Lake Water Quality Final Report dated 12/11/2008:
  - 1. An unusual pattern of stratification are observed and attributed to effects of dam operation, or perhaps more specifically, intake location (Claytor Lake Water Quality Final Report, 12/11/2008, pg. 21).
  - 2. Dam operations do not appear to influence diurnal temperature patterns; all variation can be explained by meteorological effects. (Claytor Lake Water Quality Final Report, 12/11/2008, pg. 24-27).
  - 3. Water temperatures below the dam fluctuate in a narrower range than inflow temperatures, resulting in higher temperatures during cold months and lower temperatures during warm months – a more homogeneous temperature profile.

In summary, the authors conclude that the effects of dam operation on mean weekly/monthly/seasonal temperatures are attributed to thermal mass only (Claytor Lake Water Quality Final Report, 12/11/2008, pg. 27-30). However, based on only the 3 observations noted above, this does not seem to be a natural conclusion. It may be reasonable to conclude that the dam's auto-cycling actions did not seem to influence the diurnal variation pattern substantially; however, there was no comparison to upstream diurnal patterns to support this conclusion. This data, too, is absent flow information, so that even if one accepts the conclusion that the data presented show no influence on temperature, the reviewer is unable to determine under what flow regime this holds true. Moreover, since the authors conclude that the operation of the turbines *does affect the temperature stratification* observed in the dam, an argument can be made that it may very well affect the temperature of water leaving the dam, but that the effects did not appear and disappear coincident with the hourly power-cycling regime. It would be important to determine if dam operations are capable of influencing the seasonal patterns that were shown to exist (#3 above). A model that simulated the temperature stratification in the intake zone due to auto-cycling operations would be the most logical way to explore the question of whether or not dam operations could affect the temperature regime downstream.

At a minimum, the existing temperature model results should be analyzed in terms of model performance at different flow levels (minimally, classified according to 3 quantiles: low, medium, and high flows). Ideally, the temperature model should include a component that examines the effects of dam operation on stratification of the water column at the intake location, and the effects of this stratification on the temperature of water leaving the dam.

**6. Draft Erosion Control Plan**

- a. Section 1.d: DEQ suggests including the proposed course of action that will be implemented if downstream erosion is observed. In-stream activities may require permits from DEQ, VMRC, and/or the U.S. Army Corps of Engineers.
- b. Section 2: Please include the VWP Permit Program staff in review of the proposed demonstration project(s). DEQ recommends that AEP invite the Virginia Department of Conservation and Recreation (DCR) to participate in the appropriate capacity, since that department implements the state erosion and sediment control program for non-industrial activities.