

COMMENTS

Appalachian Power Company

Project No. 739-022

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Dear Ms. Bose,

I once again appreciate the opportunity to comment on Appalachian Power Company's application for license of the Claytor Hydropower Project No. 739-022. In their submission of June 2009, I feel Appalachian has inadequately and, at times inaccurately described environmental conditions, and the impacts on resources and the human environment of their proposed operation under a new license. In my opinion, they have also not provided sufficient alternatives and mitigations for these impacts.

My specific comments about Exhibit E, Environmental Report, and Volume VII, Management Plans, of June 2009 are as follows:

EXHIBIT E, ENVIRONMENTAL REPORT

4.3 Proposed Action and Action Alternatives

Despite the section heading, no alternatives to proposals are given, only "no action alternatives."

4.3.1.1 Affected Environment, Erosion

Page 4-10: The potential for erosion and land slippage is not limited to those areas with slope greater than eight percent (see Photo 1). Erosion, including severe erosion, is occurring on level to sloped land throughout the lake, not just along shorelines adjacent to boat launches and docks, and along Claytor Lake State Park (see Photos 1, 2 and 4).

Page 4-14: While Claytor Lake's small size might limit wind waves, the erosional impact of boat wakes is exacerbated by their concentration in a smaller area.

4.3.1.2 Environmental Effects: Effects of Project Operations on Erosion of the Claytor Lake Shoreline and Downstream New River

Page 4-26: In my opinion, Appalachian's discussion of the impact of water levels on erosion minimizes and misrepresents the association between project operations and erosion. Appalachian describes its water fluctuations as "limited" and yet also asserts that this distributes "wake-caused erosion over a longer vertical range." While fluctuations of two feet in peaking operations (1844-46) provide a wider area over which erosion occurs, the majority of water fluctuations under Appalachian's proposed operation (eight months) will be within the levelized flow range of one foot of full pond (1845-46). This results in the concentration of erosion-causing wakes over a shorter and higher range, leading to faster erosion of vulnerable areas (pages 4-16, 4-28). Since boats have been shown to be the primary producers of erosion-causing wakes and add up to .5 feet in overall wave height (page 4-14), the potential exists for boat wakes to exceed full pond levels. This is likely happening, as it appears by observation and recordation that pond levels are typically maintained at 1845.5 and above during peak recreational times. (The average of random water levels I recorded from Appalachian's website—www.claytorhydro.com—for 21 days from Memorial Day, May 26, 2008 through July 31, 2008 was 1845.76, with no levels below 1845.5.)

In addition to boat wakes being higher, the number of erosion-causing boat wakes is increased during busy recreational months when levelized flow is maintained. Boat wake-caused erosion will be further exacerbated by Appalachian's proposals in its Recreation Management Plan to improve and increase boat access to Claytor Lake. The combined result of Appalachian's water level management and plans to increase boating activity will be more erosion-causing boat wakes being expended at higher levels along the shoreline. This has been shown to "lead to relatively immediate bank face retreat" of shorelines characteristic of many of Claytor Lake's vulnerable areas (page 4-16). Other than making a loose association between increased boating activity, boat wave action and accelerated erosion at vulnerable banks (page 4-31), Appalachian does not directly attribute this effect on erosion to its proposed operations, or provide alternatives or mitigations.

I recommend, as a way to mitigate for higher and increased boat wake energy, that lake levels be lowered to between 1845.0 and 1845.5 during periods of heavy boating activity. While slight, this fluctuation would adjust the energy and height of boat wakes to full pond level and below, and attenuate wave impacts over broader, nearshore areas. In this way, wake-caused erosion would be distributed over a longer vertical range. Concerns over the impact to boaters of shallower watered areas being created by this fluctuation would already be addressed in the Aids to Navigation Management Plan since it is still within range of levelized flow levels. (Parenthetically, I wonder if water levels have increased over time to accommodate recreators as erosion has expanded the lake and sedimentation has created low water areas. R. Lloyd Mathews reports that a normal pond level of 1845 was presented at Claytor Dam's dedication in 1939 ([Pulaski County, Virginia: An Historic and Description Sketch 1907-2007](#), page 292.)

Proposed Action

Page 4-27: Appalachian is proposing to discontinue drawdown. The only effect on erosion of this proposal that Appalachian reports on is the effect on erosion of discontinuing the annual five foot water

level fluctuation. Yet the effects of this proposal on erosion and other resources and the human environment go far beyond what they report.

The initial Erosion Study draft plans included an objective to assess landowners' need for drawdown to perform property maintenance and shoreline stabilization. Though never addressed by the Erosion Study, the Recreation Study's survey of landowners showed that 75% of respondents reported using drawdown for shoreline maintenance activities such as debris removal, dock repair and shoreline stabilization. Only 5% of respondents considered drawdown unnecessary or inconvenient. The Recreation Study recommended that drawdown be continued in consultation with appropriate agencies.

Discontinuing drawdown will negatively impact the ability of many landowners to conduct shoreline maintenance activities by making them physically more difficult or impossible, and/or financially more costly or prohibitive to accomplish. By limiting landowners' ability to install shoreline stabilization measures, Appalachian will allow erosion to continue unabated in many areas. The result will be continued erosion and sedimentation, degraded water quality and aquatic habitat, damage to adjacent property and archaeological, cultural and historical sites, and impaired scenic views. Likewise, restricted debris removal and dock maintenance and repair will impair recreational access, enjoyment and safety, and negatively impact property values and the scenic quality of the lake.

Despite VDGIF's encouragement, Appalachian declines in its Environmental Report to consider alternative measures to drawdown to accomplish the goals of landowners. Instead, Appalachian states a willingness "to work with landowners through the [Shoreline Management Plan] to identify and facilitate appropriate shoreline maintenance activities" (page 3-16). My experience to date with the shoreline management planning process has been that protection of all other resources (such as fish habitat and recreation) is being given priority over protecting against erosion, that regulations and restrictions are being proposed that will impede erosion control, and "appropriate shoreline maintenance activities" are being rigidly and unilaterally defined.

Within the Shoreline Management Plan (SMP) (Vol VII), shoreline classifications have been created "for the protection of the shoreline" (page 4-207). Yet, as currently proposed, these classifications and their associated regulations give priority to other resources to the detriment of the protecting shorelines against erosion. For example, much of the highly erodible shoreline is included under the proposed classification of Impact Minimization Zone (IMZ) which covers 47% of the shoreline. Regulations for this zone limit development, including shoreline stabilization, increase permitting and review requirements, and require mitigation for any impacts to resources. The result will be that the installation of erosion protection measures will become too complicated or prohibited by regulation, process and/or cost. The impact on erosion will be to severely impede or prevent the installation of erosion control measures.

Shoreline stabilization requirements as currently proposed in the SMP may also impede or prevent erosion control installation by being too restrictive. For example, despite the statement that "no material is to be placed in excess of the minimum needed for erosion control" (Vol VII, page 49), the proposed riprap specifications can be excessive in areas where a smaller toe of rock, without grading,

fabric or trenching, can sufficiently break wave energy (see Photo 3). (Also, areas where in years past rock has simply been dumped over the bank have effectively protected property from erosion for years, demonstrating the long-term efficacy of methods other than what the full-blown riprap specifications require.)

The requirement for construction of riprap on a 2:1 slope or flatter may also require excessive cutting of trees and grading of banks, especially where eroded banks are vertical (1:1), tall and flanked by woods (see Photos 2 and 4). An alternative option could be to place riprap against the 1:1 bank in such a way that the rock achieves a 2:1 slope without grading the bank. While requiring more rock, this could maintain a more natural look to the shoreline and effectively protect against erosion.

In order to facilitate shoreline protection, flexibility in design and construction of erosion control methods needs to be allowed within the SMP, especially if traditional ways of accomplishing shoreline stabilization, such as drawdown, are curtailed or discontinued. Flexibility in vegetative cover and fallen tree regulations, and habitat mitigation requirements such as bundling and sinking woody debris is also needed to prevent them from being insurmountable deterrents, physically and financially, to shoreline stabilization (see Photo 4).

An alternative to the SMP which would facilitate identification and application of erosion control measures would be to add an Erosion Protection Zone (EPZ) classification which would be applied to areas highly vulnerable to erosion. This zone would give priority to shoreline stabilization, facilitate review and permitting, and would allow for flexibility in construction design and materials, and waiving or modifying of vegetative cover, fallen tree and resource mitigation requirements. The goal of the classification would be to facilitate the timely installation of effective, long-lasting and cost-effective shoreline stabilization methods that would be most suitable and compatible to specific locations and conditions. By including this zone in the SMP, I believe Appalachian would be more successful in meeting its goals of protecting and enhancing resources, and minimizing impacts among contrasting uses (Vol VII, SMP, page 1-2).

Effects of Project Operations on Sedimentation of Claytor Lake and Sediment Transport Downstream New River

Page 4-28: Contrary to Appalachian's statement that project operations do not influence Claytor Lake's sedimentation process, I contend that by its proposals for water level management, increasing boating access, and further restricting and regulating shoreline stabilization by the SMP and discontinuing drawdown, Appalachian will cause increased erosion and, therefore, increased sedimentation in the lake. The consequence of this will be degradation of water quality and aquatic habitat, and negative impacts to recreational access, enjoyment and safety.

4.3.1.3 Cumulative effects

Appalachian attributes increased erosion and sedimentation to increased development outside the project area. No mention is made of the negative impacts to resources and the human environment due to proposed operations. These impacts include damage to and loss of adjacent private and project property and archaeological, cultural, and historical sites, degradation of water quality and aquatic habitat, infilling of the lake and inputs of debris, decreased property maintenance and property values, and impairments to recreation and scenic qualities.

4.3.3.2 Effects of Impoundment Level Fluctuations on Near-shore Aquatic Habitats

Page 4-85: Appalachian describes near shore habitat in which J. Anderson found few mussels during his 2007/2008 Claytor Lake mussel surveys as “those areas less than two feet below full pond” (4-85). In fact, the final Aquatic Resources Assessment Report states that in his 2007 survey with normal (nondrawdown) water levels, Anderson found only 22 live mussels in the 0-5 foot area, and much greater numbers at 5-10 feet deep (1,313) and 10-30 feet deep (469) (DTA, 2008, page 68). The report also states that all pistolgrips were in areas deeper than seven feet consisting of mud or sand substrate (page 72). These findings suggest that the number of mussels impacted by five foot drawdowns, including the pistolgrip, might be comparatively slight in comparison to the total number of mussels in the lake. In addition, Table 4.3.3.2-1 (Estimated freshwater mussel mortality resulting from fall 2008 drawdown, page 4-85) may erroneously estimate mussel mortality by basing its calculations on 500.2 acres of exposed littoral zone, while the Littoral Habitat Study (Normandeau, 2009) determined that only 360 acres of mud, sand and clay habitat associated with mussels would be exposed by drawdown. The assertion that mussels do not typically inhabit the first two feet below full pond may further reduce the actual amount of mussel habitat exposed during a five foot drawdown to three vertical feet.

In his report to the Aquatic Resources Assessment work group in November 2007, Mr. Anderson made the statement that the water coming into the lake is what is negatively affecting the survivability of mussels, not lake levels. Both the aquatic study (pages 106-7) and license Environmental Report (page 4-90) discuss other factors negatively impacting mussel survivability and distribution, including excess sedimentation, nutrients and contaminants, which result from erosion.

Including the lake in the Mussel Monitoring Plan, which now encompasses only the river, would improve understanding of the factors impacting mussels and their distribution in the New River system. Because of the detrimental effects of erosion and sedimentation on mussels, continuing drawdown to accomplish erosion control would be beneficial to mussels. Propagating mussels in local facilities would support repopulation and mitigate for mussel mortality. The frequency, timing and depth of drawdown could also be altered to help reduce negative impacts on mussels.

In response to Appalachian’s comments on these alternatives on page 4-203, conducting drawdown in early to mid October would avoid temperature extremes and minimize impacts to fish spawning and recreators. In my opinion, Appalachian’s statements regarding the timing of drawdown relative to recreational activity on the lake demonstrates their prioritization of recreation over shoreline protection. Recreational boaters can comfortably be on the water for five to six months of the year; fisherman are on the water twelve months of the year. Taking two to three weeks to allow for shoreline maintenance

and stabilization is a reasonable way to balance protection of resources and mitigate for boat wake-caused erosion. Reducing drawdown depth to, say, four feet would disadvantage shoreline maintenance and stabilization in some areas, but would be preferred to no drawdown at all. In reference to reducing the frequency of drawdowns, Appalachian states that it might enable the mussel population to increase and “be better able to withstand any losses due to an occasional drawdown” (page 4-88), as well as “result in higher losses due to mussels having become more established and abundant in the drawdown zone (page 4-203). Taking into considerations both these statements and the need for shoreline maintenance and stabilization, I feel the best alternative would be drawdowns every two to three years.

VOLUME VII, MANAGEMENT PLANS

Erosion Monitoring Plan

Monitoring is an important part of an erosion management plan, and should be continued during the next license term. Erosion is already known to be occurring, however, and I feel Appalachian should immediately take action to address this erosion. In consideration of what I believe to be project-related effects on erosion, Appalachian should be required to take responsibility for preventing and protecting against erosion. In addition to the alternatives and mitigations I have suggested above, I request that Appalachian install erosion control measures or provide funding for landowners to do so in areas experiencing high rates of erosion. Regular, on-going monitoring and remediation for erosion should continue into the term of the new license, and include sites in addition to those currently identified in the proposed Erosion Monitoring Plan.

Sedimentation Monitoring Plan

Flexibility in monitoring areas throughout the lake in addition to those areas above Lowman’s Ferry Bridge and within Peak Creek should be included in the Sedimentation Monitoring Plan.

Recreation Management Plan

In addition to being concerned about the impact on erosion of the Recreation Management Plan’s proposal to improve and increase boat access, I am also concerned about the specific proposal to create a public boat ramp at Appalachian’s picnic area adjacent to the dam on Rt 799 (Claytor Dam Road). This site is accessed by narrow two land roads which, in my opinion, cannot safely accommodate the increased vehicle and boat trailer traffic that would result.

Water Management Plan

I appreciate Appalachian’s inclusion of the possibility of nonemergency drawdowns. As stated above, however, I feel the value of continuing a regular drawdown practice is such that it should be clearly and specifically provided for in the new license.

Thank you, again, for this opportunity to comment on Appalachian’s license application.

Respectfully submitted,

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Photo 1



Photo 2



Photo 3



Photo 4

Document Content(s)

LB FERC Comments 11-27-09.DOC.....1-10