

Friends of the New River (FONR) Comment on Application for New License,
Claytor Hydro (Appalachian Power), June 26, 2009 (FERC Project 739)

Submitted by Rick Roth, President, FONR, on November 27, 2009

a) Comment on the need for a summarization of study findings to inform license conditions. We proposed to APCO, in our comments of April 30, 2009 on the Preliminary Licensing Proposal, a matrix that would summarize the effects of different project management alternatives on a variety of resources and resource uses, based on the results of the studies. This would have been useful both to stakeholders and to FERC in formulating an optimal project management regimen. It was not used and there does not seem to be any way to easily summarize the effects of different management alternatives, either for the FERC or for stakeholders.

b) Comment on the lack of consideration of a range of alternatives. Related to the comment above, and representing what seems to be a violation of regulations and guidelines for implementing the National Environmental Policy Act (NEPA), there is no consideration of a range of alternatives to the project. In Volume II Exhibit E, there is an environmental analysis that refers to just two alternatives: the proposed project management under the new license, and the "no action" alternative, which is a continuation of the current management.

Where is the discussion of a range of alternatives? We agree with APCO that none of the stakeholders is countenancing dam removal, and so this alternative does not need to be considered. But there are additional operational alternatives: at the stakeholders' meetings, a number of alternative flow management scenarios were discussed, and we are told that the Virginia Department of Game and Inland Fisheries (DGIF) is considering a flow management condition that is significantly different than that proposed by APCO. Given the wealth of information generated by the IFIM studies for different species, it is remarkable how little that information informs the proposed management regime. A "natural flow" or run-of-river mode of operation, which was discussed as a possible option at stakeholders' meetings, was summarily dropped from further discussion. This would be another potential alternative whose costs and benefits, both monetary and environmental, could reasonably be analyzed.

Where is the NEPA-required summary of the effects of the alternatives, including environmental and economic impacts? There is discussion of environmental impacts, but only in the context of discussion of different environmental parameters such as erosion, water quality, etc. There is no cost-benefit comparison or discussion of the economic and energy production impacts of

even the two alternatives presented, much less other technically feasible alternatives such as operating the facility in a run-of-river mode year-round.

c) Comment on incorporating adaptive management into the License Agreement for the Claytor Hydro project.

In FONR's comments on the PLP, submitted to FERC April 30, 2009, we proposed the creation of an Adaptive Management Review Panel (see Appendix below). We note that adaptive management was favored by stakeholders attending the study group meetings on water quality and water management/instream flow. In its license application, Volume VII Revised Management Plans and Application for 401 Certification, APCO proposes both a Freshwater Mussel Technical Review Committee and a Water Quality/Water Management Technical Review Committee. However, the charge to these committees is quite limited in scope. In the former case, it is to review mussel monitoring results and recommend changes in the mussel monitoring study. There is a proposed budget (\$600,000.00) for the mussel studies.

In the case of the Water Quality/Water Management Technical Review Committee, the Committee's function seems to be limited to reviewing the results of the dissolved oxygen (DO) monitoring and mitigation efforts described in the Water Quality Monitoring Plan. But the APCO license proposal also includes significant changes in the flow regime, and the state agencies are likely to recommend additional measures related to flow management, for the benefit of aquatic organisms such as the eastern hellbender, and to protect instream uses downstream of the project. What studies are necessary to evaluate the effects of such operational changes? Who will recommend such studies, prioritize them, design and execute them, and evaluate the results? Who will recommend operational changes and how will such recommendations be evaluated? What mechanism is proposed to respond to unforeseen and unanticipated issues arising from project operations? The license proposal does not address such issues, nor does it propose a budget for the Water Quality/Water Management Technical Review Committee.

For adaptive management to work, these questions need to be addressed substantively. A properly constituted and supported Adaptive Management Technical Review Committee could respond to these concerns. In our comments on the PLP (see Appendix below), FONR proposed the formation of such a standing technical review panel and, critically, an accruing funding source for supporting the panel's activities and studies identified as needed by the panel in consultation with APCO. An analogous arrangement now occurs in APCO's agreement for the Smith Mountain/Leesville project. The agreement provides for \$50,000 per year for 10 years. Studies and mitigation projects will be selected by VDGIF, USFWS, and APCO (William Hester, USFWS; personal communication).

Friends of the New River opposes FERC approval of another multi-decade license for the Claytor Project without a workable adaptive management process.

Appendix: FONR Proposal for Adaptive Management, April 30, 2009.

Adaptive Management Defined

Adaptive management is a distinctive approach to managing ecosystems (Lee 1993, Berkes and Folke 1998). Adaptive management explicitly recognizes that ecosystems are so complex that managing them always involves many unknowns and uncertainties regarding how ecosystems actually work. Moreover, most management actions interact with the vagaries of Nature to produce unintended and/or unexpected outcomes (surprises). Rather than ignore the importance (and inevitability) of management surprises, adaptive management aims to reduce them by treating management actions as carefully monitored scientific experiments that enable managers to continuously learn more about crucial aspects of ecosystem operation. This learning, in turn, enables managers to "adapt", thereby fostering more effective, science-based tactics to meet management objectives. This iterative, long-term approach requires close cooperation among stakeholders, carefully designed management actions (experiments), and a commitment to monitoring management outcomes so they provide instructive feedback (learning).

In the case of Claytor Dam, the licensee proposes to expand the period of levelized flow and to raise the winter minimum flow below the dam. Such changes are expected to benefit the biota of the New River but no one really knows if this will happen. Adaptive management dictates that such actions be treated as experiments and monitored in a way that biotic responses can likely be detected. Monitoring results could inform stakeholders about the efficacy of the management actions and help them decide if additional changes (in either direction) in the period of levelized flow or minimum flow were warranted. Overall, we believe adaptive management can play a key role in ensuring that the many valued resources of Claytor Lake and New River are managed in ways that balance the many conflicting demands of the stakeholders.

Unresolved Resource Issues

Despite several short-term studies being conducted to support the relicensing process, many questions regarding the potential impact of Claytor Dam operation on important natural resources of New River and Claytor Lake remain unanswered. Examples include "How do dam-induced variation in water temperature and river flow affect a) mussel population dynamics, b) status and population viability of hellbender, c) fish population dynamics, and d) status and viability of crayfishes, downstream of the dam? Such questions are much too complex to be answered confidently with the short timelines and limited funds

available for relicensing studies. Thus, several pressing long-term management issues were scarcely addressed in relicensing studies despite repeated statements of concern by stakeholders.

Remaining knowledge gaps impair resolution of existing long-term management issues and additional unforeseeable issues are almost certain to emerge over the course of the renewed license. It is reasonable to expect unforeseeable problems to emerge during the course of the new license agreement, perhaps in association with climate change, newly invading species, or newly declining species. A process and administrative mechanism are needed to enable managers to learn more about how Claytor Lake and New River operate, then incorporate this new knowledge into appropriate management actions. Adaptive management is a process to address the remaining management concerns as well as unforeseen future concerns. Below, we outline a flexible, collaborative AM approach for providing scientific knowledge to meet a wide range of management needs following relicensing of Claytor Dam. We also outline two specific examples of adaptive management studies now needed to address potential impacts of Claytor Dam operation on downstream biota.

Adaptive Management Review Panel

A standing technical panel should be established to review and prioritize issues related to management of natural resources potentially affected by operation of Claytor Dam. The Panel would primarily address issues related to biotic and recreational resources but other resource issues might also be considered. The Panel would include representatives of the licensee, VDGIF, VDCR, and VDEQ; additional members representing stakeholders (eg, FOCL, FONR) might also be invited to participate. The Panel would meet once per year to review ongoing issues and present or consider adaptive management proposals related to ongoing or newly emerging issues. Their review would be based on any available information, including that from existing management plans, technical committees, other experts, or stakeholders. Each year the Panel would prioritize current issues and decide which proposals to recommend to FERC for implementation.

Proposals presented by or submitted to the Panel would include a detailed study plan, including project goal and objectives, management actions (if any), methodology, monitoring needs, specific timeline, and related costs. Management actions might include a wide range of manipulations, including changes in water-release schedules, but should be presented as experiments to be monitored for their effects on resources of interest. The Panel might seek input from other experts regarding the suitability of proposals. After the Panel recommends implementation, the licensee would submit the proposal for FERC approval. FERC would have final approval/disapproval of recommended projects and would reserve the right to require changes to a proposal. Within three

months of FERC approval of the proposal, the licensee would file with FERC a monitoring plan appropriate to the proposed project and designed to assess effectiveness of any management actions. The monitoring plan would be developed in consultation with the Panel. Within six months of FERC approval of the proposal, the licensee would implement the proposed management actions (if any) and monitoring plan. Project monitoring would be conducted by Panel member agencies or contractors selected by them, and would be funded by the New River Management and Enhancement Fund (see below). Project results would be provided to the Panel and FERC at least once per year.

This review process would facilitate two crucial functions for management agencies. First, it would provide an opportunity to regularly and explicitly prioritize additional studies needed to inform a wide range of resource issues related to Claytor Lake and New River. Second, it would provide flexibility to act quickly on unforeseen but pressing issues. Furthermore, this process would be cost-effective because it allows issues described in the several draft management plans to be considered and weighed collectively by a single technical Panel (instead of one committee per plan).

Adaptive Management Project Funding

Adaptive management projects would be funded, as deemed necessary by the Panel, by a standing fund that accrues from annual additions by the licensee. Beginning in 2010, the licensee will establish a New River Management and Enhancement Fund. The licensee will contribute \$100,000 to the fund in the first year and \$50,000 annually, thereafter. The fund will be managed by Panel agencies and disbursed as needed to support qualifying projects.

Example Study Outlines and Estimated Costs

The purpose of this subsection is to show there are important, immediate study needs with costs commensurate with the funding requests described above. The study outlines below are not meant to represent proposals but to generally illustrate the scope and cost of studies already needed to inform resource management issues.

1. Title: Effects of dam-induced variation in water temperature and river flow on mussel population dynamics
[this study has been satisfactorily addressed, subject to DGIF concurrence, in the license application]
2. Title: Effects of dam-induced variation in water temperature and river flow on distribution, habitat use, and population viability of the eastern hellbender
Objectives:

- a) Conduct field surveys of potential hellbender habitat in New River and major tributaries (between Claytor Dam and McCoy) to describe their abundance and distribution;
- b) Document preferred microhabitat (flow conditions, water chemistry and temperature, and proximity to tributaries) for hellbenders in New River downstream of Claytor Dam.
- c) Assess viability of hellbender population in New River downstream of Claytor Dam.
- d) Assess effects of dam-induced variation in water temperature and river flow on hellbender growth, survival, and reproduction in New River downstream of Claytor Dam.

Estimated cost: \$240K (over 4 years)

Potential investigator: Dr. Bill Hopkins (Virginia Tech)

References

Berkes, F. and C. Folke, editors. 1998. Linking social and ecological systems: management practices and social mechanisms for building resilience. Cambridge Univ Press.

Lee, K. 1993. Compass and gyroscope. Island Press.

Document Content(s)

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