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3 September 2010

Jim Crew
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Subject: Follow-up to Water Quality Panel Discussion of July 27, 2010

Jim:

World Wildlife Fund (WWF) greatly appreciates the time and effort Alabama Power Company (APC) and the panelists devoted to the *Water Quality Expert Panel (The Panel)* discussion. The information was presented clearly with each panelist given an opportunity to discuss and explain the issues that he felt were most important. In turn, the stakeholders attending the panel discussion had time to ask questions or request clarification from the panel members. This type of discussion was unique to this relicensing and was productive.¹

WWF understands the time constraints of pulling together the July discussion; however, there were two drawbacks in this regard. First, we and the other stakeholders had limited time to examine the responses developed by the panelists to questions posed by APC.² APC sent the report to the stakeholders around noon (central time) on Friday, July 23rd and the panel discussion began Tuesday, the 27th at 9 AM (central time). At a minimum, it would be nice to have 10 working days to facilitate a review of such documents prior to a meeting. Second, several of the panelists' responses provided in the **Water Quality Expert Panel Discussion Summary Report**, dated July 2010, suggested they too had insufficient time to fully or thoroughly analyze a question. At several points in some of the presentations, experts admitted that they had to quickly analyze data to meet

¹ In the final report, APC should clarify how panelists were chosen from among the recommendations by stakeholders and why others were excluded.

² We note that APC did ask input of the stakeholders, but did not present all the questions from the stakeholders to the panelists. APC should describe why they chose the questions panelists answered and why they excluded other questions.

timelines. As a result, some experts did not have a complete understanding of those data or failed to catch inconsistencies between their presentations and data they used. The lack of sufficient time was most exemplified by one panelist who was not able to examine the data thoroughly enough to discern the appropriate statistical analysis for developing correlations between dissolved oxygen and retention time. Unfortunately, that issue was at the core of his discussion.

During the discussion, the panelists identified two issues related to the proposed alternate summer and winter target elevations that are of concern. The first centers on the risk that the hypolimnion may become more deoxygenated under proposed alternate operations, as compared to the current operations, because of a longer growing season for phytoplankton. In turn, the increased deoxygenation of the hypolimnion may lead to an increased incidence of sub-4.0 mg/l dissolved oxygen concentrations during generation in the tailwater. Degraded dissolved oxygen concentrations may also increase stress to Striped Bass. This fish species tends to use a lens of water that is cool in the late summer months. In typical situations, this layer of water tends to have pretty low dissolved oxygen concentrations. The likelihood that dissolved oxygen might be even lower could introduce more stress to this popular recreational fishery. The second concern is the high risk that the inflow to the reservoir and all of the embayments will become shallower over time under the proposed alternate operations because higher winter pool levels will reduce the erosion of sediment deposits within areas impounded during the summer period. Embayments and main reservoir areas with considerably larger expanses of shallow sediments are likely to encourage substantially more aquatic macrophyte (including nuisance aquatic plants) growth. WWF is concerned about the spread of aquatic nuisance plants like the spiny leaf naiad (*Najas minor*) and parrotfeather (*Myriophyllum aquaticum*) and the ramifications of expanding vascular plants on dissolved oxygen dynamics in the reservoir.

We suggest APC describe what actual reservoir levels are likely to be under each proposed alternate operation. One of the panelists repeatedly pointed out that actual reservoir elevations during the late summer months and early fall months are not likely to be much different from the status quo despite the operational shift to try to keep the reservoir higher for an extra 45 days. The actual reservoir levels (and their corresponding affect on generation / flow levels downstream) are the driving factor in all of the analyses related to the proposed alternate operational scenarios in other studies. However, the stakeholders still do not have a firm understanding of **how** lake levels and flows will change under the proposed alternatives. WWF understands that water management of this, and other reservoirs, is a dynamic process with a nearly infinite set of possibilities; however, we feel it is APC's obligation to better describe the likely effects of the proposed rule curve alternatives. This description can be done quite sufficiently by developing exceedence curves for lake level by month for very dry, dry, average, wet, and very wet years. This information is critical to each stakeholder's ability to assess the panelists' responses as well as many of the remaining study reports.

If one of the alternate operations alternatives is included in a new license application, sufficient monitoring and clear adaptation measures linked to monitoring results should be included as a

license term. Monitoring should include, at a minimum, embayment sediment deposition, macrophyte and aquatic nuisance plant colonization, continuous dissolved oxygen in the tailwater, dissolved oxygen profiles at several locations and at several times each summer within the forebay, major embayments, and main body of the reservoir and hydrogen sulfide concentrations. These monitoring actions are supported by the discussion of the panelists and stakeholders during *The Panel* discussion.

We appreciate the continued efforts by the many parties working on this process and look forward to continued dialogue with APC staff, other stakeholders, and the Federal Energy Regulatory Commission in this relicensing process.

Sincerely,

Judy Takats
Senior Program Officer

CC: Federal Energy Regulatory Commission