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August 13, 2013

VIA ELECTRONIC FILING

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

Re: Alabama Power Company's Comments on Draft Environmental Impact Statement for Martin Dam Hydroelectric Project – FERC Project No. 349-173

Dear Secretary Bose:

Alabama Power Company (“Alabama Power”) appreciates the opportunity to provide comments to the Federal Energy Regulatory Commission (“FERC” or “Commission”) on the Draft Environmental Impact Statement (“DEIS”) prepared for the Martin Dam Hydroelectric Project relicensing (“Martin Project”). While Alabama Power agrees with much of the analysis in the DEIS and believes that this DEIS fully supports the issuance of a new license for the Martin Project, some issues have not yet been fully and adequately analyzed and some preliminary recommendations are either not supported by the record in this proceeding or are inconsistent with the public interest.

Most importantly, Alabama Power is disappointed with the DEIS’ initial rejection of Alabama Power’s 3-foot winter pool increase and conditional fall extension proposals. As discussed more fully below, Alabama Power’s proposals were the result of years of studies, cooperation, consultation and extensive stakeholder participation. These proposed changes in Martin Project operations were by far the single most important issue to the majority of stakeholders throughout the license application development process. Although we believe our license application provided ample support to justify Commission acceptance of these proposed operational changes, we understand that staff wants additional information regarding benefits and potential impacts from our proposals. We hope that the information included in these comments will supply the additional information staff needs to accept Alabama Power’s 3-foot winter pool increase and conditional fall extension proposals. Alabama Power asks that staff evaluate this information in the final environmental impact statement (“FEIS”) and recommend acceptance of Alabama Power’s proposals. Alabama Power also points out several issues that need further analysis and reconsideration prior to issuance of the FEIS and, ultimately, a new license for the Martin Project.

Background of Martin Relicensing Process

Alabama Power filed an application for a new license for the Martin Project on June 8, 2011, utilizing the Commission's Integrated Licensing Process ("ILP"). As FERC has explained, the ILP was designed to, among other things, "increase public participation in pre-filing consultation," 104 FERC ¶ 61,109, and to "encourage citizens, governmental entities, tribes, and other interested parties to identify and resolve issues prior to an application being formally filed with the Commission." DEIS at xvi.

Thus, long before Alabama Power filed its application, Alabama Power began the process of educating and involving potential stakeholders of the Martin Project. In December 2006, Alabama Power issued a "Preliminary Information Document" to "educate interested persons on the current operation of the Project and to prepare stakeholders for the Issue Identification Workshops" PID at 1-2. Because downstream property owners did not initially participate in the process, Alabama Power specifically reached out to these stakeholders to make certain they were included, involved and represented. Over the course of several years, Alabama Power held hundreds of meetings ensuring that all stakeholders' interests were considered and balanced. The 2011 license application and Alabama Power's proposals represent a fair balance of all the stakeholders' interests and meet all Federal Power Act ("FPA") standards that would enable the Commission to issue a new license for the Martin Project consistent with Alabama Power's license application.

Alabama Power's Comments on Martin Project DEIS

Given the voluminous nature of the DEIS and the complexity of issues involved, Alabama Power's comments will address the following topics:

- I. Staff's rejection of Alabama Power's proposed winter pool increase and conditional fall extension
- II. Description and analysis of operational requirements
- III. Description and analysis of environmental impacts
- IV. Description and analysis of shoreline impacts
- V. Description and analysis of recreation resources and land use

In addition, Attachment A includes proposed editorial suggestions or factual corrections not addressed in any of the above-identified sections.

I. Staff Should Reconsider Alabama Power's Proposed Winter Pool Increase and Conditional Fall Extension and Recommend Acceptance

As explained above, Alabama Power's June 8, 2011 license application was the result of years of input from, negotiations with, and participation of many interested stakeholders. The most significant product of this application development process – Alabama Power's proposals to increase the winter pool elevation by 3 feet and to allow for an extension of higher lake levels in the fall if certain conditions are met – took into account all of the various interests, resulting in proposals that balanced the associated benefits and potential impacts. As was evidenced by the

turnout at FERC's public meeting regarding the DEIS in Alexander City, Alabama, on July 17, 2013, these proposed lake level changes are extremely important to Lake Martin property owners, businesses who depend on revenue from lake residents and visitors, and the public who utilize the lake and the recreational opportunities it provides. Alabama Power evaluated the stakeholder recommendations to have higher pool elevations at certain times of the year and included the proposals in the application not because these changes would result in significant operational or generation benefits to Alabama Power, but because they addressed an overwhelming stakeholder interest. Following FERC's ILP process that encourages all stakeholders, including the licensee, to work together to identify and resolve the issues, Alabama Power and the stakeholders developed this plan to address this single most important relicensing issue. Staff's recommendation to reject Alabama Power's proposals is therefore very disappointing not only to Alabama Power, but also to the many other stakeholders who supported the winter pool increase and the conditional fall extension because it, in effect, nullifies all of the study, cooperation and issue resolution that is fundamental to FERC's process.

At the July 17th meeting, FERC indicated that Alabama Power had not provided enough information regarding the benefits and potential impacts associated with the winter pool increase and conditional fall extension to support staff's acceptance of these proposals. Alabama Power appreciates this opportunity to provide additional information for staff to consider and include in the FEIS – information we believe further supports our proposals. We respectfully request staff consider this information and recommend acceptance of Alabama Power's proposals.

A. 3-Foot Winter Pool Increase

Staff's rejection of Alabama Power's proposed 3-foot winter pool increase was based on its finding that "the higher winter pool levels would increase flooding on residential and commercial structures and roads." DEIS at xv. Staff considered the many benefits of the proposal "against the flood effects to downstream landowners," and concluded that "[t]he benefits of increasing the winter pool elevation by 3, 4, or 5 feet, including increased electricity generation and increased access to private boat docks during the winter where there are useable public boat ramps, are difficult to justify considering the additional risk of flooding at least 23 residential and commercial structures, and public roads downstream of Martin dam." *Id.* at 169-170. Below we provide additional information that demonstrates that the recreational benefit and economic impact associated with Alabama Power's proposal were undervalued by staff. We also provide additional context for the modeling presented by Alabama Power regarding the potential for additional downstream flooding. Taken together, this information supports a finding that the balance of interests overwhelmingly favors accepting Alabama Power's proposal to increase the winter pool by 3 feet.

1. Recreational and Economic Benefits

While Alabama Power appreciates staff recognizing that "[h]igher fall and winter lake levels could enhance recreation resources and associated economic activity in the project area by extending the season in which access for boats is available," DEIS at 107, the conclusions in Section 3.3.5.2 of the DEIS undervalue the recreational and economic benefits that would result from the winter pool increase. The DEIS' conclusions seem to discount, without explanation, and mischaracterize the results of two specific studies that demonstrate the recreational and

economic benefits associated with the winter pool increase. As discussed below, when properly analyzed, the recreational and economic benefits are much greater than accounted for by staff.

On p. 108 of the DEIS, staff states that “[a]pproximately 28.6 percent of annual recreational use at Lake Martin is shoreline landowners,” and that “[a]pproximately 71.4 percent of the annual recreational use at Lake Martin is visitors and seasonal landowners,” citing Study 12g. Study 12g stated that 28.6 percent of annual recreation use was permanent residents (those who reside year round in one of three counties surrounding Lake Martin). In order to classify “shoreline landowners,” however, both permanent residents and seasonal residents (those who own a home in one of the three counties but do not reside there year round) should be included. Indeed, the character and culture of Lake Martin is influenced in very large part by these seasonal residents who live in Montgomery, Birmingham, Atlanta and other cities, but who come to the lake for the weekend or extended vacation time at their lake homes. These seasonal residents have full time interest in Lake Martin as evidenced by the significant number of shoreline property owners who drove to Alexander City to attend the July 17th meeting. Therefore, “shoreline landowners” make up much more of the annual recreational use at Lake Martin than the 28.6 percent analyzed by staff in the DEIS. When the data collected for Study 12g are re-analyzed for the purpose of classifying “shoreline landowners” (permanent and seasonal residents), 62.7 percent of recreation use at Lake Martin is attributable to “shoreline landowners.” (Table 1).

Table 1. Total recreation use of Lake Martin, by residency of users

	Visitors ¹	Seasonal Residents ²	Permanent Residents ³	TOTAL
Reservoir	137,445	125,615	105,114	368,174
Tailwater*	883	883	675	2,365
Total	138,328	126,498	105,789	370,539
% of Total	37.3%	34.1%	28.6%	100.0%

¹ Visitors include people that visit Lake Martin but do not own a home in Coosa, Elmore, or Tallapoosa counties.

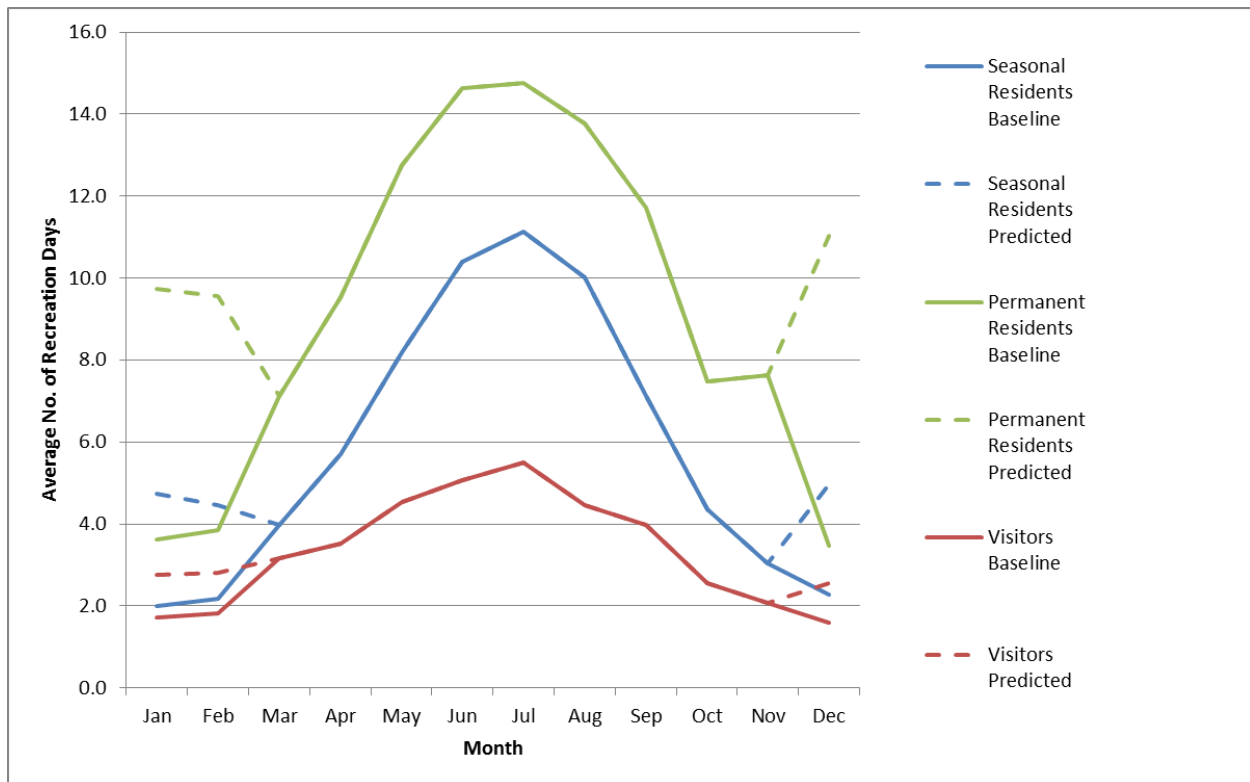
² Seasonal residents include people that own a home in Coosa, Elmore, or Tallapoosa counties, but do not reside there year round.

³ Permanent residents include people that own a home in Coosa, Elmore, or Tallapoosa counties, and reside there year round.

* Residency of tailwater users is unknown. Assumes that the residency distribution of tailwater users is the same as reservoir users.

On pages 108 and 109, staff states that the proposed increase in winter pool will primarily benefit shoreline owners and their private docks. While these owners may receive a direct benefit from the winter pool increase, the local economy will also benefit from the increase in recreational use, as evidenced by study results. For example, Alabama Power re-analyzed the data from Study 12g so that “all shoreline landowners” were separated into unique categories, resulting in a predicted increase of 8 percent for seasonal residents due to an increase in the winter pool of 3 feet (in addition to the 6 percent increase in trips for permanent residents already reported). Viewing the predicted increases in average recreation use by month demonstrates that projected increased use is directly correlated to the proposed 3-foot increase in winter pool. (Figure 1).

Figure 1.



Also, Alabama Power believes that the DEIS depreciates the increase in access from private boat docks. According to Table 11 in Study 12g, at the current winter water level, only 8 percent of private docks are usable (able to moor a boat). At Alabama Power’s proposed winter water level, 29 percent of private docks would be usable, resulting in a 21 percent increase in the number of private docks that would be usable year round. Given that there are approximately 4,000 boat docks around Lake Martin, approximately 840 additional docks would have boat access to the water at the proposed higher winter elevation. This is not insignificant – both as a direct benefit to the private boat dock owners and as a benefit to the local economy from increased recreational use.

On page 109, staff concludes, without explanation, that, due to winter season being cold, “an increase in recreational use and associated expenditures would likely be modest” as a result of a winter pool increase. While ambient air temperature may affect recreational use during the winter months, staff has mischaracterized the expected increase in recreation use and associated economic impact as “modest.” As previously reported, a winter pool increase will result in a 6 percent increase in use from permanent residents, an 8 percent increase in use from seasonal residents, and a 6 percent increase from visitors. Further, business activity in the region is expected to increase by 5 percent. Also, based on Study 12h, an estimated increase of \$800,000 will be spent on trip-related expenses, generating additional economic impact in the Lake Martin region. It is important to note too that the responses that generated the estimated percent increase in recreational use accounted for weather – respondents were asked how many more days they would use Lake Martin during the winter months (all other factors being equal), and therefore would have accounted for weather in their responses.

On page 110, staff seems to rely on a study (Sammons, 2011) filed during the relicensing process that examined striped bass habitat in the reservoir and possible changes in habitat and the associated responses of striped bass due to operations of the Martin Project in its analysis of economic impacts of the winter pool proposal. FERC should have instead relied on Study 12h, which was prepared specifically to assess the changes in economic activity associated with changes in winter pool level and the duration of summer pool, including economic impacts on shoreline property owners. Study 12h showed that, on average, 22 percent of visitors and seasonal landowners reported they would increase their expenditures for recreation equipment (boat, boat accessory, and fishing equipment expenditures) and 14 percent reported they would increase their expenditures for real estate related items (real estate, construction, dock and boathouse, and other expenditures) under Alabama Power's proposal of a 3-foot winter pool increase. In addition, 30 percent of permanent residents reported they would increase their expenditures for recreation equipment (boat, boat accessory, and fishing equipment expenditures) and 11 percent reported they would increase their expenditures for real estate related items (real estate, construction, dock and boathouse, and other expenditures). As reported, privately owned property (including improved and unimproved parcels) on the Lake Martin shoreline had a total market value of \$2.87 billion. Based on the expected changes in property value under Alabama Power's proposal, total property value would be approximately \$3.15 billion, or an increase of \$280 million over current reported property values.

As demonstrated by the information previously provided by Alabama Power, and by the clarifying explanations above, the recreational and economic benefits that would result from FERC's acceptance of Alabama Power's 3-foot winter pool increase proposal are great. Staff's conclusions in the DEIS significantly understate the recreational and economic benefits expected from Alabama Power's proposal. Alabama Power asks staff to re-analyze the data presented and give appropriate value to these resources when balancing the various interests.

2. Potential Downstream Impacts

In addition to undervaluing the recreational and economic benefits that would result from implementation of a 3-foot winter pool increase, the DEIS concludes, without much discussion, that the benefits "are difficult to justify considering the risk of flooding at least 23 residential and commercial structures, and public roads downstream of Martin dam." DEIS at 170. As noted above, Alabama Power disagrees that the recreational and economic benefits are "moderate." However, even taking staff's characterization as accurate, the DEIS does not explain why staff concluded that the potential downstream flooding impacts are greater than "moderate," so as to favor rejection of Alabama Power's proposals. Rather, staff's characterization of the potential downstream impacts associated with the winter pool increase proposal misinterprets the data presented by Alabama Power.

The potential increased flooding that staff refers to came out of Study 12a – Flood Control Guideline Change, Modeling Analysis. In that study, Alabama Power analyzed a very specific synthetic flood event that would show worst case impacts to downstream areas assuming a higher winter pool at Martin. This was achieved by choosing a historical flood event that was closest to the unimpaired 100 yr inflow (1% frequency event) into the Martin pool. Alabama Power selected the March 1990 storm as the representative storm to create this synthetic event

because the daily average peak flow into Martin was estimated to be within 4 percent of the 100 year unimpaired inflow and the volume closely approximated the 5-day volume for the unimpaired 100 year event. Alabama Power then scaled this March 1990 storm up by the scale factors in study 12a to reflect a 100 year unimpaired inflow into Martin reservoir. This event was then regulated by current flood control procedures at Martin to produce dam releases for each of the proposed starting pool elevations. These regulated releases along with the historical 1990 intervening flows were then routed downstream all the way to the Montgomery Water Works. This analysis, which we refer to as the “Alabama Power modeled flood,” more accurately reflects the real influence a change in the winter pool at Lake Martin could have at downstream locations. Had the 100 yr intervening flows downstream of Martin also been modeled, it would have masked the potential influence of changes at Martin to downstream locations. Thus, Study 12a was designed to help understand to what extent the winter pool increase may influence downstream flood elevations and not to establish what those elevations may be.

On page 56 of the DEIS, staff implies the flood that was analyzed is a 100 yr flood over the lower Tallapoosa River but, as described above, this clearly is not the case. The official FEMA-defined 100 yr flood event in the lower Tallapoosa River is different from the Alabama Power modeled flood. To be clear, Alabama Power’s analysis did not attempt to determine either the 100 yr flood in the lower Tallapoosa River or the frequency of the Alabama Power modeled flood at downstream locations such as Milstead and Montgomery Water Works. This analysis was not done for two reasons: (1) determination of the official 1 percent flood events is the responsibility of FEMA, thus Alabama Power does not have the authority to make that decision, and (2) determination of the 100 yr event in a regulated stream is much more complex and FEMA has not established a standardized method for such.

While the Alabama Power modeled flood centered over Martin and routed downstream does show some minor potential impacts to flooding, it is important not to lose sight of the fact that all of the structures identified in the study are well within the current FEMA floodplain, which is defined by FEMA as a flood that has a 1 percent chance of occurring in any given year or the “100 yr” flood. There is inherent risk associated with living in a floodplain. According to FEMA, the 1 percent chance of flood in any year is mapped as a “Special Flood Hazard Area,” which is defined as a high risk area. While a 1 in a 100 chance may not seem that high, when lenders are looking at a 30 year mortgage there is a 26 percent chance there will be flood damages during the life of the loan according to FEMA. FEMA has determined that the high risk area constitutes a reasonable compromise between the need for building restrictions to minimize potential loss of life and property and the economic benefits to be derived from floodplain development. All home and business owners in the high risk areas with mortgages from federally regulated lenders are required to buy flood insurance. *Talking Points: Flood Maps*, FLOODSMART.GOV, <http://www.floodsmart.gov/toolkits/flood/downloads/TPsFloodMaps-OT2007.doc> (last updated March 2007).

In 1968, Congress created the National Flood Insurance Program (“NFIP”) to help provide a means for property owners to financially protect themselves from flooding since standard home owners insurance does not cover flooding. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP.

Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. *About the National Flood Insurance Program: Overview*, FLOODSMART.GOV, http://www.floodsmart.gov/floodsmart/pages/about/nfip_overview.jsp. In Alabama, the Office of Water Resources administers the NFIP program, which is a voluntary program, offered to each county. The areas downstream of Martin include Elmore, Tallapoosa, and Montgomery counties, all of which participate in the NFIP and manage development in their floodplains in accordance with FEMA requirements.

As the following maps and table demonstrate, Alabama Power is not changing the risk already assumed by the structures downstream that are already well within the current FEMA “100 yr” floodplain and already subject to the floodplain development requirements for Elmore, Montgomery and Tallapoosa counties.

Figure 2.

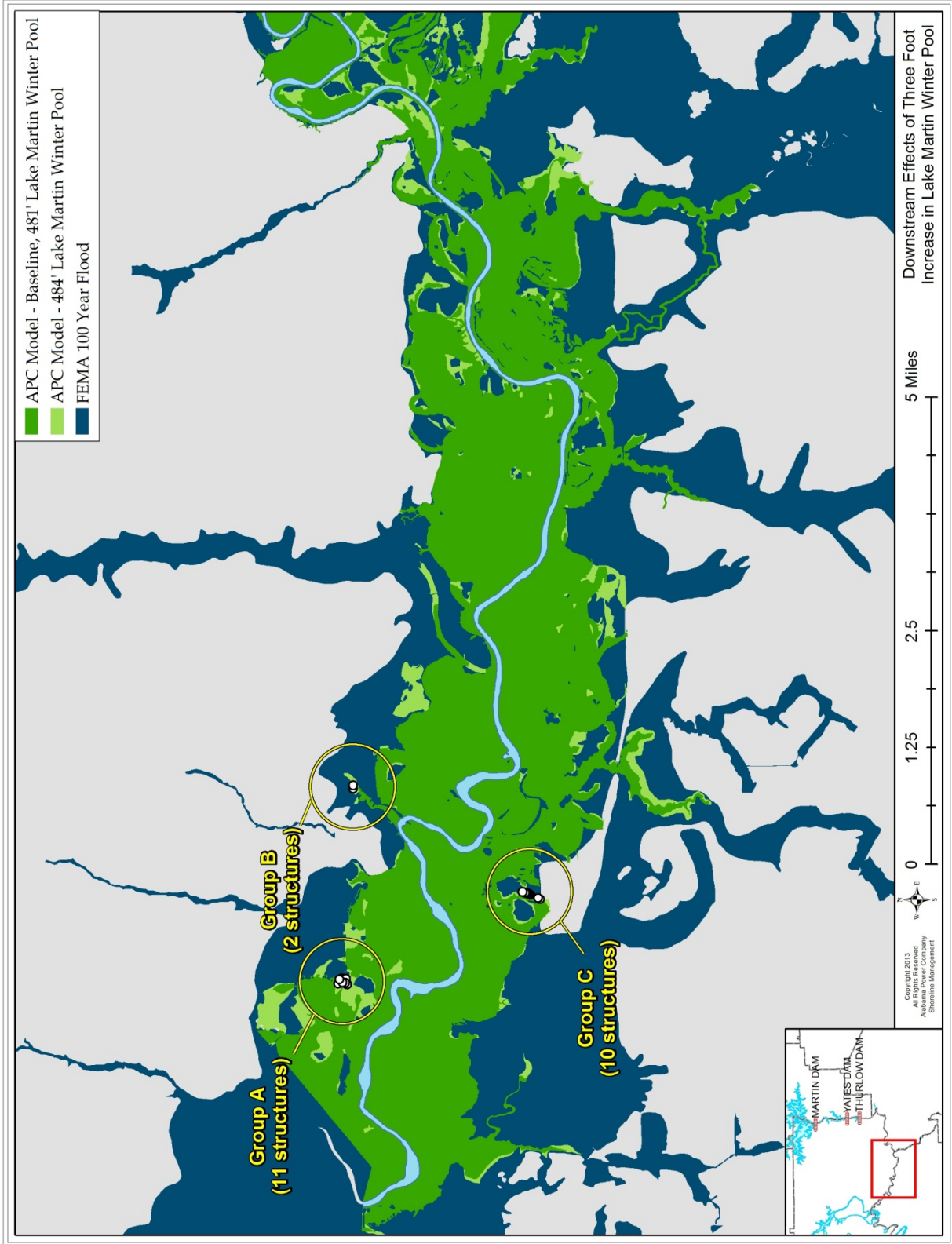
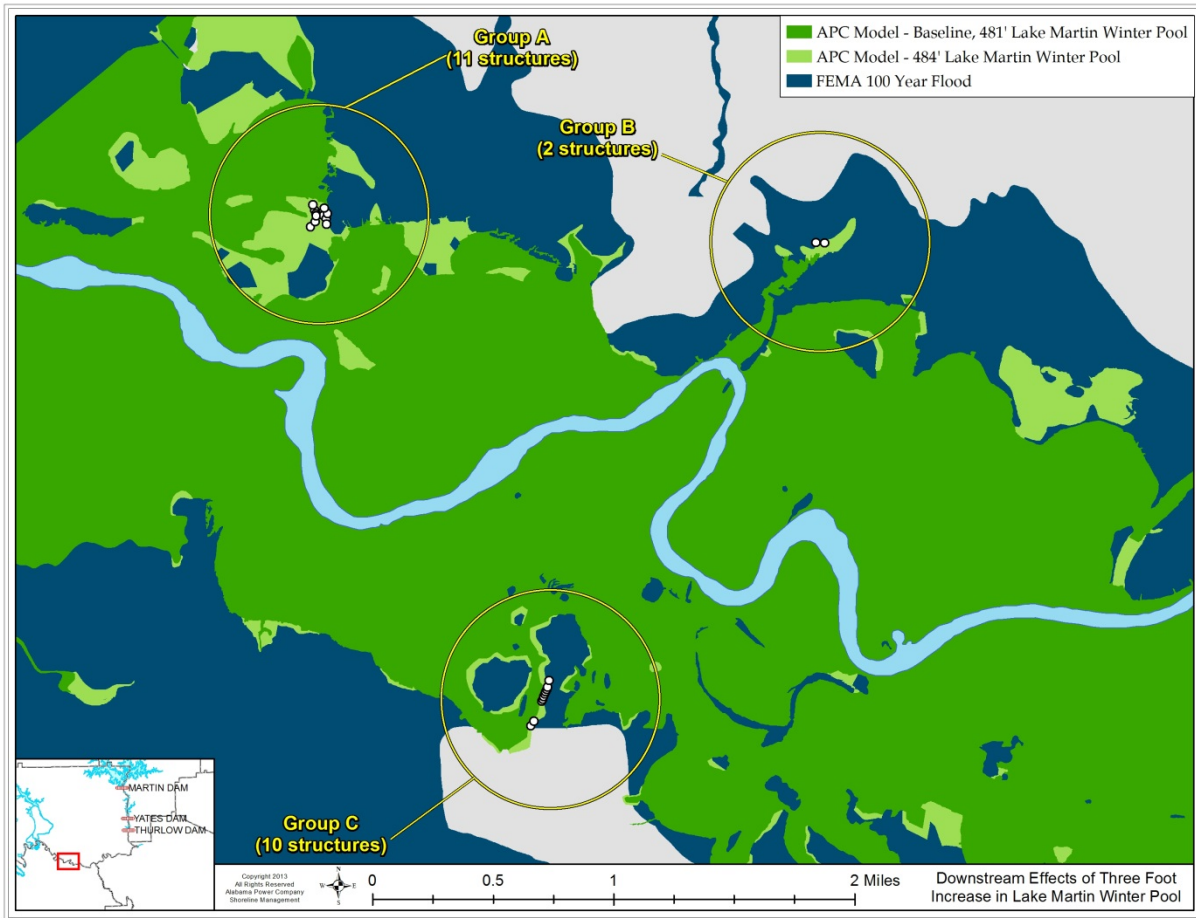


Figure 3.



The table below shows the FEMA flood range for the three areas shown on the maps where potential additional flooding may occur, as well as Alabama Power’s modeled flood elevation range for those same areas. In each instance, Alabama Power’s modeled flood elevation range is well below the FEMA flood elevation range.

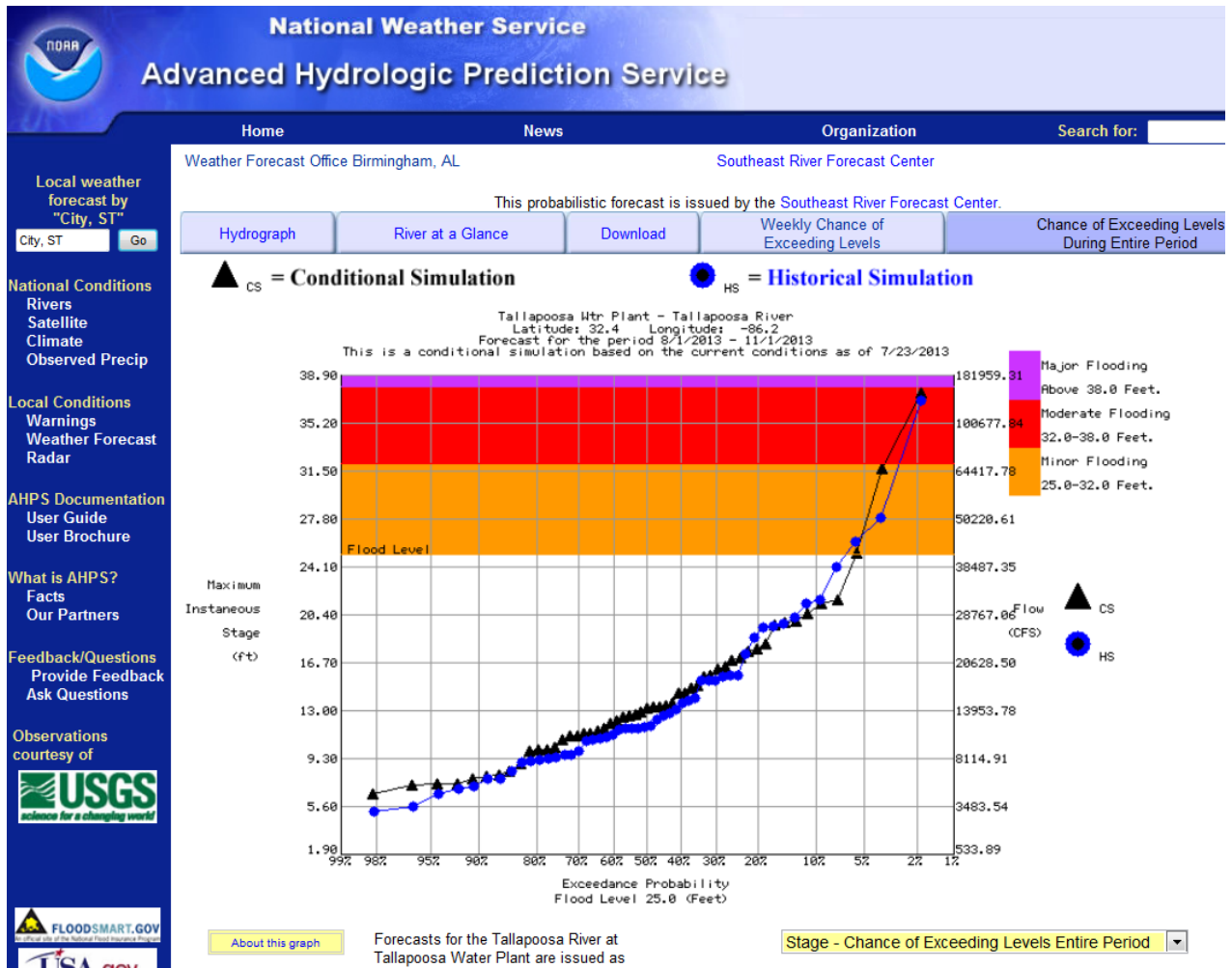
Table 2.

Structures	FEMA Flood Elevation Range	Alabama Power Modeled Flood Elevation Range
Group A	174 to 175	168.18 to 169.83
Group B	177 to 178	169.83 to 171.93
Group C	175 to 176	169.83 to 171.93

All of the additional structures that may be affected under the Alabama Power modeled flood with a 3-foot higher winter pool are located in the lower portion of the Tallapoosa River basin near the Montgomery Water Works (which is the downstream extent of the FERC approved geographic scope). There are approximately 1000 plus square miles of unregulated drainage area between Martin Dam and the area with potentially affected structures. There are many factors that affect when these structures and roads get wet such as where a storm event is centered, runoff conditions for the time of year, whether the upstream dams are in a drawdown state, etc. The above analysis provides a worst-case scenario with respect to the operation of the dam where a higher winter pool at Martin could have some adverse impact downstream. However, for the vast majority of time, there is likely to be no difference or increased risk downstream as compared to current operation based on the negligible increase (0.1 percent) in the frequency of a spill event if the winter pool is raised 3 feet. Even then, spill does not necessarily mean increased flooding. The timing and magnitude of the spill combined with intervening inflows downstream determine if there are any real measurable impacts.

Staff indicated concern for public safety with some roads listed as flooding on the Southeast River Forecast Center's ("SERFC") flood impacts page for the Montgomery Water Works. As much of this area is in a floodplain, minor flooding impacts, including flooding to some roads, start appearing as low as a gage height of 25 ft (154 ft NGVD). Then moderate flooding occurs between gage height 32 and 38 (161 to 168 ft NGVD), with major flooding above a gage height of 38 feet. As was shown in Study 12a, the proposed 3 foot higher winter pool for Martin only results in a 1.5 foot higher peak at Montgomery Water Works with the conditions of the Alabama Power modeled flood. Also Figure 2.8.7.1-6 of Study 12a shows that the 1.5 foot rise still keeps the flood peak within the moderate flooding zone. Much higher intervening flows in the unregulated reach would be needed to push the peak at Montgomery Water Works above the moderate flood zone. In addition, as shown in Figure 4. below, SERFC has determined that the 50 year exceedance level is near the 38 ft stage separating the moderate and major flood zones. Since the roads and structures listed on the SERFC webpage for the Tallapoosa Water Plant (Montgomery Water Works) are well within the 100 year FEMA flood zone, and apparently below the 50 year flood level, they qualify for the NFIP and are already subject to fairly frequent flooding. The risk, as defined by FEMA, and the owners' ability to purchase insurance would not change. FEMA has employed this simple method to mitigate risk because of the almost infinite scenarios that can generate flooding at a particular location within the floodplain. It would be impossible to test every possible scenario; therefore, Alabama Power chose a situation that would show the maximum difference between the baseline and the proposed change to winter pool.

Figure 4.



B. Conditional Fall Extension

Staff’s reason for rejecting Alabama Power’s proposal to implement a conditional fall extension was because it “would not be an operational measure that recreational users could rely on consistently.” DEIS at 174. Additionally, staff found that “[i]ts benefits are limited,” and that “it could be decided against or suspended at Alabama Power’s discretion.” *Id.* These conclusions are based on a misunderstanding of Alabama Power’s proposal and the stakeholders’ expectations related to the conditional fall extension proposal. As was clear at the July 17th meeting, the stakeholders are well aware that the conditional fall extension would only be available when certain conditions are met; however, the benefits realized when those conditions are met justify Alabama Power’s proposal.

The DEIS assumes that even if the four criteria for the fall extension are met, Alabama Power can use its discretion and choose not to hold Lake Martin higher in the fall. However, under Alabama Power’s proposal, when the four criteria are met, Alabama Power would initiate the fall extension. When the water is available to meet downstream flow requirements and hold

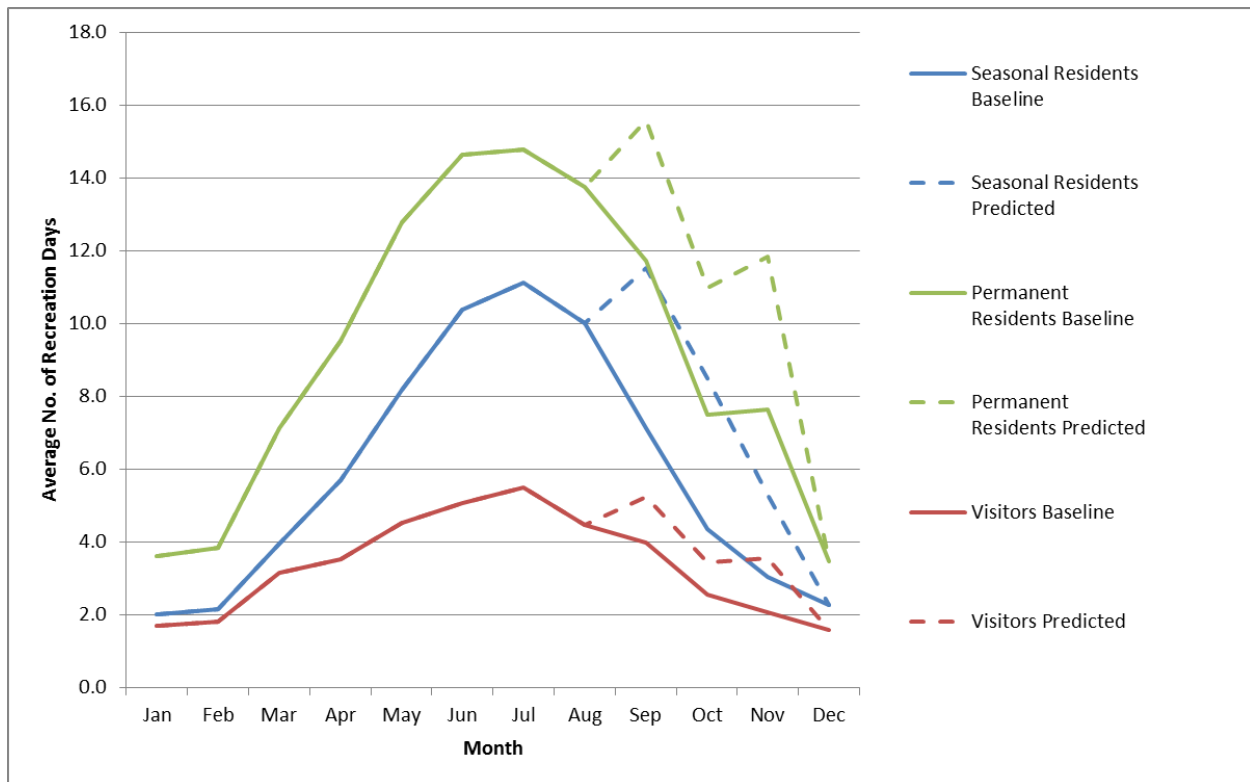
Martin above the flood control guide curve, Alabama Power would operate in that fashion unless emergency conditions dictate otherwise. Staff is correct that the measure will not be implemented every year; however, it will be consistently implemented in those years when conditions allow, and it would not be discontinued at Alabama Power's discretion, as the DEIS concludes. Once the fall extension is initiated in a particular year, it will stay in effect throughout the rest of the fall extension period. Moreover, though Alabama Power would be allowed to operate above the flood control guide curve when the four triggers are met, there is no need to make a permanent change to the flood control guide curve or the operating curve because this is not expected to be an annual mode of operations.

1. Recreational and Economic Benefits

As with Alabama Power's proposal to increase the winter pool by 3 feet, staff undervalues the recreational and economic benefits associated with the conditional fall extension in the DEIS. It is disconcerting that staff did not depend more heavily on the results of Study 12g and Study 12h when analyzing the effects of the conditional fall extension on recreation use. Rather, staff seems to have relied on previously published papers in an attempt to justify the decision of not recommending Alabama Power's proposal. While Alabama Power does not question the validity of the results in these other studies, some data collected as part of the FERC approved study on the effect of the proposed conditional fall extension were not included in the DEIS.

On pages 108 and 109, staff states that the proposed conditional fall extension will primarily benefit shoreline owners and their private docks. While these owners may receive a direct benefit from the conditional fall extension, the local economy will also benefit from the increase in recreational use, as evidenced by study results. For example, Alabama Power re-analyzed the data from Study 12g so that "shoreline landowners" were separated into unique categories, resulting in a predicted increase of 14 percent for seasonal residents when the fall extension is in place (in addition to the 5 percent increase in trips for permanent residents already reported). A review of the monthly predicted increases in recreation use confirms that such use is directly correlated with water levels (Figure 5).

Figure 5.



Also, Alabama Power believes that staff downplays the increase in access from private boat docks. According to Table 11 in Study 12g, during current operations, 76 percent of private docks are usable (able to moor a boat) at the end of October (corresponding to a water level of 485 ft msl). During those years when the conditional fall extension is implemented, up to 100 percent of private docks would be usable even if the lake is within 2 feet of full summer pool elevation. This 24 percent increase represents approximately 960 boat docks which is a very significant increase.

Although staff did not analyze socioeconomics in the DEIS, Alabama Power would like to reiterate some of the results from Study 12h that show the economic benefits of the conditional fall extension. As previously reported, the conditional fall extension will result in a 5 percent increase in use from permanent residents, a 14 percent increase in use from seasonal residents, and a 7 percent increase from visitors. Further, business activity in the region is expected to increase by 14.5 percent. Also, an estimated increase of over one million dollars will be spent on trip-related expenses, generating additional economic impact in the Lake Martin region. The study also showed that, on average, 30 percent of visitors and seasonal landowners reported they would increase their expenditures for recreation equipment (boat, boat accessory, and fishing equipment expenditures) and 23 percent reported they would increase their expenditures for real estate related items (real estate, construction, dock and boathouse, and other expenditures) during the fall extension. In addition, 19 percent of permanent residents reported they would increase their expenditures for recreation equipment (boat, boat accessory, and fishing equipment expenditures) and 9 percent reported they would increase their expenditures for real estate related items (real estate, construction, dock and boathouse, and other

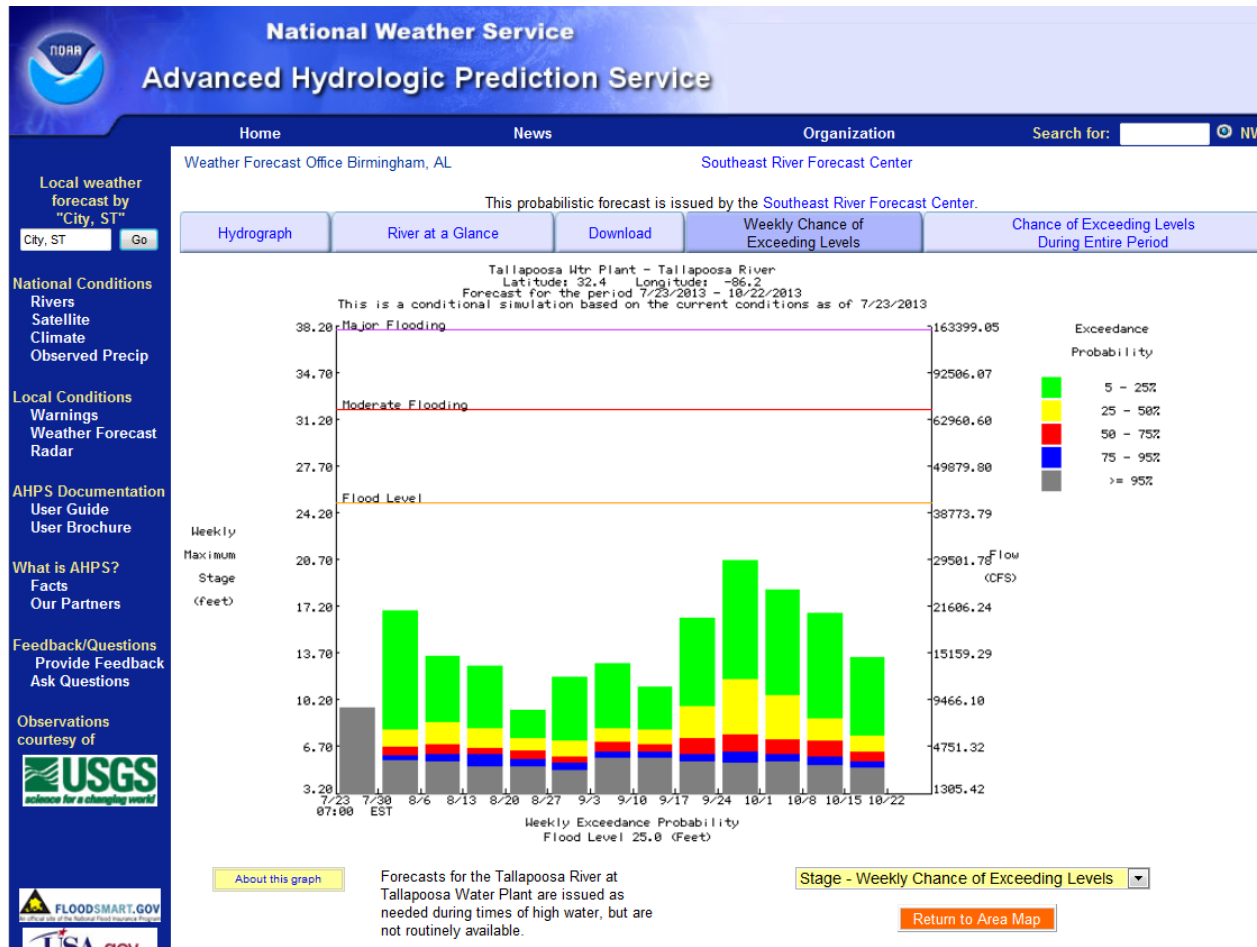
expenditures). As reported, privately owned property (including improved and unimproved parcels) on the Lake Martin shoreline had a total market value of \$2.87 billion. Based on the expected changes in property value under Alabama Power's proposal, total property value would be approximately \$3.17 billion, or an increase of \$300 million over current reported property values. Clearly the fall extension would provide increased recreational and economic benefit to permanent residents, seasonal residents, visitors and businesses.

2. Potential Downstream Impacts

In Study 12a, Alabama Power evaluated the increased number of days with spill associated with the original proposed fall extension and found it to be 6 additional days of spill over the entire 67 year period of record; that is 6 days out of 24,445 days or an increase of 0.02 percent. It is important to note that spill at Martin does not necessarily equate to any additional flooding downstream because not all spill events result in the river getting out of its bank.

Another way to look at the potential for flooding during the conditional fall extension would be to look at the SERFC page for the Tallapoosa Water Plant, which is also known as the Montgomery Water Works, and is the most downstream point in the geographic scope related to flooding associated with changes at Martin. There is a page for the weekly chance of exceeding levels which is shown in Figure 6. below. Currently, for the September through October 15th timeframe, the chart shows that the chance of exceeding the initial flood level of 25 feet is less than 5 percent. This is based on 50 years of precipitation data and current soil moisture conditions that take into account the very wet summer that central Alabama has experienced in 2013.

Figure 6.



Additionally, in the DEIS, staff evaluated data provided by Alabama Power for the flooding potential from the conditional fall extension which was found to be a low probability (<0.2 percent) of having a 100 yr flood in the September/October timeframe. This once again reiterates just how unlikely it is that a conditional fall extension at Martin would impact flooding of roads or structures downstream. Nonetheless, in Figure 5-11 of Study 12a, Alabama Power evaluated if the same Alabama Power modeled flood were to occur at full pool (elevation 491 msl) and concluded that the resulting elevations downstream would all fall well within the FEMA flood zone.¹ Therefore, as highly improbable as this event is to occur during the six weeks of the fall extension, the Alabama Power modeled flood would stay within the FEMA 100 year flood elevation.

Finally, Alabama Power investigated the two specific years that staff identified between 1990 and 2011 that had a potential for increased downstream flooding due to sudden rises in the water level. Alabama Power found that hurricanes occurred in both October 1995 and

¹ Figure 5-11 was prepared in the context of evaluating the early spring fill option, but the results for the Alabama Power modeled flood at full pool elevation can be applied to the fall extension.

September 2004 that caused a 2 to 3.5 ft rise in the elevation of Martin pool. The 1995 event was one of the events that was identified as causing an additional day of spill over the baseline in the 6 additional days over 67 years discussed above. The spill was not greater than historical but did last one additional day. Further, the September 2004 event was identified as an additional day of spill in the analysis as well. For baseline there was no spill that occurred for this event and for the fall extension there was spill of approximately 3,000 cfs. It is also important to note that, looking specifically at these two years, in 1995 the fall enhancement would not have been triggered at Martin due to the elevation at Harris, and in 2004, the fall enhancement would not have been triggered until after the actual hurricane event due to the elevation at Harris.

As this analysis demonstrates, the potential downstream flood impacts of the conditional fall extension are highly unlikely. The associated benefits justify staff's acceptance of Alabama Power's conditional fall extension.

C. Alternative Interim Proposal

As explained above, Alabama Power is confident that its studies, stakeholder input and balance of interests support approval of the 3-foot winter pool increase and conditional fall extension proposals. We believe that once staff re-evaluates the information previously provided by Alabama Power and clarified in these comments, staff will conclude that acceptance of Alabama Power's proposals is completely justified. Nevertheless, because staff's conclusions in the DEIS seem to indicate some uncertainty as to what degree recreational, economic, environmental and operational benefits and impacts will be realized by implementation of Alabama Power's proposed lake level changes, to the extent staff still has those concerns after analyzing these comments, Alabama Power suggests an adaptive management approach to addressing these concerns. Specifically, we suggest an alternative interim implementation proposal.

As an interim measure, Alabama Power would implement and evaluate its proposed higher winter pool elevation of 484 ft msl and conditional fall extension for a period of 10 years following issuance of the new Martin license. This 10-year period of study should provide samples of varied hydrologic conditions (drought, flood, etc.) to further evaluate impacts to both upstream and downstream resources. A 10-year period would also likely include several instances where the criteria for the conditional fall extension would be met so that the study could include analysis of impacts associated with this proposal. Also, our current winter pool increase and conditional fall extension proposals already include a provision for developing monitoring plans to study impacts on water quality and nuisance aquatic vegetation, which could be completed during this 10-year interim period. Analyzing a rule curve change through an interim study period is not a new approach for FERC and Alabama Power. From 1999 through the issuance of the FERC license for the Coosa River Project (P-2146) on June 20, 2013, FERC and Alabama Power successfully utilized this adaptive management approach for the H. Neely Henry development rule curve change. This alternative approach would be an appropriate way to implement and evaluate Alabama Power's operational proposals on an interim basis if FERC decides that it cannot adopt these measures as permanent additions to the new Martin license.

II. Staff Should Re-evaluate and Clarify Several Operational Requirements

A. ADROP² and Minimum Flow at Thurlow

The DEIS at p.22 says that “Alabama Power clearly states that Alabama DROP [(“ADROP”)] is not part of its current proposal for the Martin Dam Project.” This is not entirely accurate, and is likely the result of an unintentionally misleading statement made by Alabama Power in response to an Additional Information Request. These comments provide clarification for staff’s review and inclusion in the FEIS. ADROP (Attachment B) is integral to drought management at all of Alabama Power’s Tallapoosa River projects, including the Martin Project. On page H-3 of our license application, we state that “ADROP will ultimately evolve into a long term drought plan for the benefit of the Project as well as the Alabama portion of the ACT basin.” At the time the license application was filed, Alabama Power was continuing work with various state and federal resource agencies to refine the ADROP. Additionally, ADROP was in the initial stage of review for the U.S. Army Corps of Engineers (“Corps”) ACT Water Control Manuals Update (“WCM”). Since then there have been two substantial developments associated with drought management and ADROP. First, with the release of the draft WCM and associated DEIS in March 2013, the Corps incorporated the ADROP in its Drought Contingency Plan. Second, FERC adopted ADROP and incorporated it into the new Coosa license, FERC Project P-2146, issued on June 20, 2013. The requirement in the Coosa license related to drought management was to implement the Coosa portion of ADROP. Further, as explained on page 63 of the Martin DEIS, the Department of Interior recommended that the Tallapoosa River portion of the ADROP be used when assessing drought operations for Martin. Consistent with these measures, we recommend that the Martin license require implementation of the Tallapoosa portion of ADROP as the Martin drought plan in Draft Article 404. Alabama Power further suggests the draft Article 404 be replaced with the following Article in the new license:

Article 404. Drought Management. Upon issuance of this license the licensee shall implement the Tallapoosa River portion of Alabama-ACT Drought Response Operations Proposal (ADROP). The Tallapoosa River portion of ADROP provides a plan for managing the Tallapoosa River operations during drought conditions of varying intensity. The licensee shall notify the Commission as soon as possible, but no later than 10 days after modifying operations in response to drought conditions.

In draft Article 402 of the Martin DEIS, Alabama Power has the ability to temporarily modify the lake level for short periods upon mutual agreement among the licensee, the Corps, Alabama Department of Environmental Management (“ADEM”), and Alabama Department of Conservation and Natural Resources (“ADCNR”). Variances, similar to those filed with FERC during the winters of 2007, 2009 and 2011, for the purpose of increasing the likelihood of getting Martin to full summer pool, allow for the temporary modification to the flood curve to operate Lake Martin at a higher winter pool during times of forecasted drought or the initialization of ADROP. With this draft Article 402, we see no additional modification needed to the license

² For purposes of this document, it is noted that Alabama DROP, Alabama-ACT Drought Response Operating Proposal, Alabama Drought Response and Operations Proposal and ADROP all refer to the same drought plan referenced at various places in the DEIS.

other than incorporating Alabama Power's recommended language for Article 404 as outlined above in order to implement the Tallapoosa portion of ADROP.

In Article 401 of the 1994 license for the Yates and Thurlow Project, FERC Project No. P-2407, Alabama Power is required to provide a continuous 1,200 cfs minimum flow release from the Thurlow powerhouse, as measured immediately downstream of the Thurlow Dam. Part I of the Agreement for Continuous Minimum Releases From Thurlow Dam and Associated Environmental Studies allows for reduction of the minimum flow at Thurlow. Under Article 401 of the Yates and Thurlow license, Alabama Power requires no additional modification to the Martin license other than incorporating Alabama Power's recommended language for Article 404 to implement the Tallapoosa portion of ADROP since reductions in flows at Thurlow under ADROP affect all upstream projects, including Martin.

B. Storage Capacity

On pages 11 and 41 of the DEIS, "active storage" is defined as the volume of a 45.5 foot drop of Martin from summer pool elevation (491 ft msl) to one of two locations. Page 11 inaccurately defines active storage volume down to elevation 431 (the actual physical limit of the structure), and page 41 accurately describes active storage down to the operating limit of the turbines, a 45.5 foot drop down to elevation 445.5 ft msl. However, on page 41, the description also says "Active storage in the available 45.5 foot drawdown...." It is important to note that in the normal course of business, Alabama Power will not use all of that storage defined as "active." The volume in the 45.5 foot drawdown represents the volume down to a theoretical safe operational limit, defined by the manufacturer subsequent to the turbine upgrades of units 1, 2, and 3 during the mid 2000s. This limit is theoretical because the reservoir has never approached that elevation either during the current license term or after the turbine upgrades were completed. Therefore, although it is listed as "available," it is only theoretical and would not be available during the course of normal operations.

In previous drought years during the current license period, the project has not been operated down to elevation 445.5 ft msl. Even during the historic 2007 drought of record, the lowest elevation that Martin reached was 475.5 msl. While the Corps' ResSim model has "conservation storage" defined similarly to the "active storage" defined in the Martin DEIS, it is important to note that volume is only a representation used to define limits for the purpose of the ResSim model and should not be represented that Alabama Power is making that entire volume available for release. This is reflected in the comments Alabama Power made on the Corps' draft WCM Manual and associated DEIS. Further, draft Article 402 requires that the licensee "maintain the lake level between the flood control curve and operating curve elevation 477 except as provided in Articles 403 for flood control and 404 for Drought Management. Characterizing the entire 45.5 foot drawdown as "available active storage" is misleading.

C. Changes to Flood Control

Page xiv of the DEIS inaccurately describes the intent of the proposed flood control operations related to reducing flows on the falling limb of a flood event at Martin. The proposed flood control operation that FERC is referencing is accurately described on page 20 of the Martin DEIS as follows:

- 2) When the reservoir is above the flood control curve and between elevations 486 and 489 feet:
- a. With **increasing** inflows, turbines at Martin dam would be operated to provide for an outflow from Thurlow dam of at least equivalent to the hydraulic capacity of the turbines at **Thurlow dam (13,200 cfs)**.
 - b. With **decreasing** inflows, turbines at Martin dam would be operated to provide for an outflow from Thurlow dam of at least equivalent to the hydraulic capacity of the turbines at **Yates dam (12,400 cfs)**.

The intent of this proposed change to flood control operation is not to decrease flooding downstream but to allow for a more efficient operation to minimize spill at Yates. There is only approximately 800 cfs difference in the hydraulic capacity at Yates and Thurlow. By cutting back 800 cfs there would be no appreciable benefits to flooding downstream as suggested in the DEIS. Conversely, since this operation would only occur on the falling limb of a flood event, there would be no adverse impact to flooding upstream in the Martin reservoir as well. The only change to operation occurs when the reservoir is between 486 msl and 489 msl and inflows are decreasing. If there were a second inflow that caused Martin to rise then the rule for increasing inflows would apply which would be to go back to the higher Thurlow hydraulic capacity. Even though the operation is bold in a. above this is only to distinguish between increasing and decreasing inflows. The operation in a. above is the same as in the current flood control operations for Martin.

On page 158 of the Martin DEIS FERC states “Item No. 2 reduces the releases from Martin dam from 13,200 cfs to 12,400 cfs when inflows to Lake Martin are decreasing. This minor reduction in releases from Martin dam has the potential to increasing flooding in Lake Martin, thus we recommend that Alabama Power consult with the Commission’s Atlanta Regional Office and provide a report which analyzes the potential effect on local flooding and the adequacy of the spillway to provide such flows. Appendix A, Article 301 further describes this recommendation.” Alabama Power would like to clarify that these are hydraulic capacities for Yates and Thurlow. Martin dam would be operating at less than its hydraulic capacity for both 12,400 cfs or 13,200 cfs releases. Also this change would be occurring on the falling limb of a flood event and would not result in any further increased elevations at Martin. It would only occur in the range between elevation 486 msl and 489 msl which is still 2 ft below full pool at Martin. Therefore, there is no need for an analysis of potential effect on local flooding or the adequacy of the spillway to provide such flows. Alabama Power further suggests that Article 301 is unnecessary and should be deleted based on the above discussion of the actual change to flood control operations.

D. Navigation Flows

The DEIS references a 1972 letter from Alabama Power to the Corps relating to navigation flow releases from the Tallapoosa and Coosa hydro projects, and it describes this letter (the “1972 Letter Agreement”) as “requiring” Alabama Power to meet a 4,640 cfs navigation flow with combined releases from its Coosa and Tallapoosa hydro projects.

As Alabama Power has explained repeatedly, the 1972 Letter Agreement was a commitment by Alabama Power to meet a target flow of 4,640 cfs for navigation, qualified by the condition that “our upstream storage dams are above minimum rule curve elevations.” This navigation flow commitment is contained in a letter from Alabama Power to the Corps. It is not contained in a letter from the Corps directing Alabama Power to do anything relative to downstream navigation flow support and it cannot be characterized as a “requirement.”

Alabama Power included many historical details of the 1972 Letter Agreement in its October 1, 2010 comment letter on the draft Coosa environmental assessment (Accession # 20101001-5128) and more recently in its July 22, 2013, request for rehearing of the Coosa license order (Accession # 20130722-5114). Alabama Power will not restate all of that discussion again here, but incorporates those documents and the 4,640 cfs explanation herein by reference. However, Alabama Power notes two points from these prior explanations. First, the Corps itself does not characterize this commitment as “requiring” Alabama Power to provide a 4,640 cfs navigation flow. Rather, in a letter dated January 27, 1981, from Colonel Robert Ryan, District Engineer in Mobile, to the Director of the Alabama Water Improvement Commission (the predecessor agency to ADEM), the Corps explained that the 1972 Letter Agreement “can be characterized as a gentlemen’s agreement.” Alabama Power fully agrees with the Corps’ characterization and has in good faith honored that “gentlemen’s agreement” since 1972. On the few occasions since 1972 when conditions in the Coosa and Tallapoosa Rivers have forced Alabama Power to reduce combined flows from its Coosa and Tallapoosa projects below the 4,640 cfs target, Alabama Power has voluntarily and willingly consulted with the Corps regarding the flow reduction.

Second, the Corps did not submit this 1972 Letter Agreement to FERC and it is not included as a license condition in either the original Coosa license or the existing Martin license. Had the Corps intended the 1972 Letter Agreement to be an exercise of its navigation prescription authority under any license and/or had the Corps intended for Alabama Power’s commitment to be a license “requirement,” it most assuredly would have filed that document with FERC.

Despite the documented history of the 4,640 cfs navigation flow, the DEIS describes this commitment as being a “requirement” and includes a recommended license article stating that until a final drought plan can be approved by the Commission, Alabama Power must provide a combined flow of 4,640 cfs from its Coosa and Tallapoosa projects and “file for Commission approval operating measures to maintain adequate minimum flows at Thurlow and navigation flows in the Alabama River.” DEIS Draft Article 404, at page A-5. This proposed Martin requirement to obtain FERC approval for releasing less than 4,640 cfs stands in stark conflict with the provision in the new Coosa license that Alabama Power “is required to release 4,640 cfs at all times, unless otherwise directed by the Corps.”³ It also conflicts with the requirement in Article 403 of the new Coosa license that requires Alabama Power to implement ADROP, which was included in the Coosa River Biological Assessment and which is being adopted by the Corps

³ Alabama Power has requested rehearing of the 4,640 cfs navigation flow provisions in the Commission’s June 20, 2013 Coosa license order.

in its ACT WCM update. In addition, it conflicts with requirements in Alabama Power's license for the downstream Thurlow development (Project No. 2407), which provides for specified minimum flows that can be reduced under certain conditions without FERC pre-approval. Given that ADROP effectively replaces the 1972 Letter Agreement, the Martin DEIS proposal to continue this agreement into the future as a license requirement creates confusion, uncertainty and possibly conflicting regulatory requirements.⁴

Moreover, the DEIS's explanation for how the 4,640 cfs navigation flow became a Martin license requirement cannot be correct. The DEIS states that "article 44 of the current license for the Martin Dam Project required Alabama Power to enter into an agreement with the Corps to protect Federal navigational interests downstream of the dam. As a result, Alabama Power entered into an agreement with the Corps on April 18, 1972." DEIS at page 17. However, the 1972 Letter Agreement, which the DEIS cites to as the basis for Alabama Power's navigation flow "requirement," was formed in 1972. The current Martin license was not issued until May 11, 1978. How can a 1978 license requirement be the basis for Alabama Power entering into a 1972 agreement with the Corps? The existence of the 1972 Letter Agreement (which FERC acknowledged in the 1978 Martin license order) made it unnecessary for Alabama Power and the Corps to enter into an agreement in accordance with Article 44, so there is no license-required navigation flow agreement between Alabama Power and the Corps.

III. Staff Should Re-evaluate and Clarify its Analysis of American Eel Sampling, Water Quality Standard Requirements and Environmental Impacts

A. American Eel Sampling

In the DEIS, staff rejected Alabama Power's proposal to implement a study of American eels, in consultation with the U.S. Fish and Wildlife Service ("FWS"), from the project tailrace to the mouth of the Tallapoosa River. Instead, staff concluded that "an annual eel trapping effort immediately below Martin dam would be more informative and relevant to the decision of whether passage is needed at Martin dam because such an effort would determine when eels are present at Martin dam." DEIS at 161. The record does not support an annual eel trapping program because there is no evidence of eels being present below Martin dam. Alabama Power's proposal was prepared in consultation with FWS and was intended to provide a better understanding of American eel densities and distributions in the study area.

FWS requested that Alabama Power perform a field survey of American eels from Martin Dam to the mouth of the Tallapoosa River, and Alabama Power agreed to perform the study but noted that it would be performed after the license application was filed. Alabama

⁴ The requirement that Alabama Power continue to meet the 4,640 cfs navigation flow in the 1972 Letter Agreement is particularly ironic given the Corps' acknowledgment that the 4,640 cfs releases have "never actually been sufficient to fully support navigation channel depths downstream." See United States Army Corps of Engineers, *Draft Environmental Impact Statement: Update of the Water Control Manual for the Alabama-Coosa-Tallapoosa River Basin in Georgia and Alabama*, at 6-67 (March 2013), available at http://www.sam.usace.army.mil/Portals/46/docs/planning_environmental/act/docs/New/ACT%20DEIS%20Volume%201_Mar%202013.pdf.

Power included this study as a PME measure in the Final License Application. Alabama Power developed the study outline and filed it with FERC on February 27, 2012, as additional information for analysis of the issues. Initial portions of the study were started in January 2013, but have been halted since issuance of the Martin DEIS.

Staff does not offer any analysis in the DEIS supporting the need to sample for eels below Martin Dam each year for 30 years. Alabama Power asks staff to reevaluate the information provided and accept our original proposal. Alabama Power also does not agree with staff's cost estimates for eel sampling under either proposal. The levelized annual cost of \$269,750 for our proposal is extremely high. In its license application, Alabama Power included as costs of its American Eel study proposal, \$35,833 annually for 6 years (total \$214,988). Since that time, Alabama Power has worked with FWS and Auburn University to further develop the study plan and currently has a cost of \$210,000 total over 3 years. Staff's estimate for their plan of \$4,660 per year for the license term (\$180,000 total) is likely very low. Capital costs to install an eel trap with some degree of permanence could cost \$180,000 or more, and 30 years of maintenance and monitoring costs must be considered, as the trap must be serviced to collect samples and repairs are likely.

If staff continues to believe Alabama Power and FWS' proposal is not necessary, replacing it instead with sampling below Martin Dam only, Alabama Power proposes to modify the sampling plan from a 30-year annual requirement to a 5-year sampling plan. At the end of 5 years, Alabama Power would consult with FWS and ADCNR as to whether or not the sampling program should be discontinued or modified based on sampling results and would provide the results to FERC. In any event, any eel sampling plan should allow for discontinuation if no eels are found. Below are proposed edits to draft License Article 408 to reflect these requested changes:

Draft Article 408. Regular American Eel Trapping Plan at Martin Dam. Within 180 days of license issuance, the licensee shall file for Commission approval a plan to trap eels at Martin dam ~~annually~~ to identify any need for development of an upstream eel passage. The trapping plan shall include, but not be limited to, the following provisions: (1) an eel trapping design for the waters immediately below Martin dam including a method for determining the appropriate trapping period for detecting upstream migrants; (2) a schedule for implementing the annual eel trapping program at Martin dam within a year of plan approval by the Commission and every year for five years ~~following through the term of the license~~; and (3) preparation of an annual comprehensive report to the Commission following the 5th year of sampling ~~each year of trapping~~. The annual report shall include any recommendations to discontinue or modify the sampling program based on sampling results.

The licensee shall provide the ~~annual~~ report to FWS and Alabama DCNR prior to filing it with the Commission. The licensee shall allow a minimum of 30 days for the entities to comment on the report and to make recommendations before filing the report with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific reasons.

The plan shall be developed after consultation with FWS and Alabama DCNR. The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment on the plan and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific reasons.

The Commission reserves the right to require changes to the plan. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.

B. Water Quality

The DEIS contains several misstatements related to the analysis of water quality at the Martin Project. In its license application, Alabama Power proposed to develop a reservoir water quality monitoring plan, in consultation with ADEM, prior to implementing an increase in the winter pool. Alabama Power would like to note that this additional monitoring would only be required if the winter pool increase is approved by FERC. If a winter pool increase is not approved, the tailrace water quality monitoring plan required by Article 405 will simply be a reiteration of the monitoring plan approved by ADEM in the Clean Water Act Section 401 Water Quality Certification. If an increase in the winter pool is not included in the final license, Alabama Power requests Article 405 be modified to reflect that no additional monitoring in the reservoir will be required. Staff's discussion on page 160 of the DEIS is not clear that no additional monitoring would be required absent the increase in the winter pool.

If an increase in the winter pool is included in the final license as requested by Alabama Power, we propose modifications to draft License Article 405, as noted below:

Draft Article 405. *Tailrace Water Quality Monitoring Plan.* Within one year of license issuance and prior to initiation of a winter flood pool elevation increase, the licensee shall file with the Commission for approval, a reservoir and tailrace water quality monitoring plan. The tailrace portion of the plan must be consistent with Conditions two through six of the 401 Water Quality Certification (Appendix B of this license). The plan must define the water quality parameters that will be monitored, monitoring methods for data collection, and proposed schedules for data collection and reporting.

The plan must be developed after consultation with the U.S. Fish and Wildlife Service, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the

plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific reasons.

The Commission reserves the right to require changes to the plan. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.

Also related to the Water Quality Certification, Appendix B of the DEIS contains the 401 water quality certificate conditions issued by ADEM. However, the paragraphs (starting after paragraph 3) are numbered incorrectly. Because Articles 401 and 405 reference the conditions by number, Alabama Power asks that Appendix B be revised to show the correct numbering. Below are the required changes to Appendix B:

Water Quality Certificate Conditions for the Martin Dam Hydroelectric Project No. 349 Issued By the Alabama Department of Environmental Management, May 9, 2011.

Conditions of Certification:

LIMITATIONS

1. The operation of this project, including the operation of the turbines and existing turbine aeration systems, shall be managed such that dissolved oxygen (D.O.) criteria specified at ADEM Administrative Code Reg. 335-6-1 0-.09(2)4., 335-6-1 0-.09(3)4., and 335-6-10-.09(5)4, shall be maintained at all times at the monitoring point prescribed herein downstream of the project. Management steps required to maintain the D.O. concentration shall be implemented to assure that the 4.0 mg/l minimum D.O. criterion is maintained.

MONITORING AND REPORTING

2. The monitoring point for determining compliance with paragraph 1 above shall be located in an area immediately downstream of Martin Dam at the existing monitoring location indicated in Figure 1. The location is at approximately latitude 32.679350 N and longitude 85.911648 W.
3. The monitor in the Martin Dam tailrace will record D.O. concentrations and water temperature at 30-minute intervals during periods of hydroelectric generation following one continuous hour of generation beginning June 1 and extending through October 31. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal. The monitoring program will begin within 18 months of the effective date of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Martin Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring period, monitoring shall begin

the following June I. The monitoring program shall continue for a period of three years.

4. Alabama Power Company will provide adequate and frequent maintenance and calibration of the D.O. and temperature monitoring equipment to assure its proper operation. The D.O. monitoring equipment will be calibrated at an acceptable frequency using the manufacturer's recommendations, the modified Winkler Method, Method 360.2 of the Environmental Protection Agency's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.
- 4.5. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements. Monitoring reports shall be submitted in an electronic form compatible with the Microsoft TM Excel and Word software.
- 5.6. An assessment of the effects of the operation of the Martin Project on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the 4.0 mg/l D.O. criterion through structural and/or operational modifications at the project as prescribed in paragraph I. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.
- 6.7. The Department also certifies that there are no applicable effluent limitations nor other limitations imposed under Sections 30 I (b) or 302 or other standards imposed under Sections 306 or 307 of the Clean Water Act. This certification does not, however, exempt Alabama Power Company from requirements imposed under the National Pollutant Discharge Elimination System for other discharges at these facilities regulated by the Department.

Alabama Power also notes that in Table 4-3, footnote f, and on page 160 of the DEIS, staff states that Alabama Power estimated the combined cost of monitoring water quality in Lake Martin and the project tailrace at \$1,096,770/year. Alabama Power is unsure where this number originated, as the Environmental Report in Exhibit E of the license application states in Table E-

107 that the projected costs of Martin Dam Project Water Quality Monitoring is \$70,000 annually.

Finally, with regard to draft Article 401, Alabama Power does not agree with the need to file for a license amendment before making *any* structural or operational changes in order to maintain water quality standards, if such changes are needed in the future. The same language in condition 6 of the Martin 401 water quality certification is included in both the Warrior and Coosa 401 certifications and a license amendment is not a specific license requirement in either of those licenses. Of course, if a proposal to meet water quality standards would otherwise require an amendment to the Warrior or Coosa licenses under the Commission's regulations, Alabama Power would request such an amendment. If at some point in the future, the aeration systems at Martin are not sufficient to maintain state water quality standards, Alabama Power would certainly notify ADEM and FERC as to what corrective measures would be taken. However, a license amendment in order to implement those measures should not necessarily be required for every change, but this determination should be made on a case-by-case basis, depending on the nature of the proposed modification. Therefore, we propose changes to draft Article 401 as reflected below:

(a) Requirement to File Reports.

The licensee must file with the Commission the following reports or notifications as required by the Alabama Department of Environmental Management's (Alabama DEM) water quality certification.

Alabama DEM Condition Number	Report Name	Commission Due Date
5	Dissolved Oxygen and Temperature Monitoring Report	Within 90 days following the end of the annual monitoring period

(b) Filing of Amendment Applications.

Alabama DEM's Condition 6 of the water quality certification attached to this order contemplates unspecified long-term structural and/or operational changes for the purpose of ensuring compliance with state water quality criteria for dissolved oxygen. These changes may require Commission approval prior to implementation if such change necessitates an amendment to the license. ~~not be implemented without prior Commission authorization granted after the filing of an application to amend the license.~~

C. Cultural Resources

Staff requests clarification on the National Register evaluations of any of the 22 previously identified sites and the National Register status of the Martin Dam, and any other project features and equipment more than 50 years old. DEIS at pp. 135-138. The State Historic Preservation Office ("SHPO") provided the evaluation of the dam to Alabama Power on March 21, 2012, and the status of the sites via a memo from Greg Rhinehart in February or March 2012

(the memo is not dated). Alabama Power will include this information in the Final Historic Preservation Management Plan (“HPMP”). In addition, staff recommends that the survey time be reduced from 20 years to 5 years. DEIS at p. 136. Alabama Power agrees to this schedule and will survey on average 161 acres per year. Staff also states that any project-related, ground-disturbing activities that might be necessary outside of the Area of Potential Effects (“APE”) as defined would be subject to the requirements of Section 106. *Id.* at 136. Alabama Power requests clarification as to what type of activities this includes. Alabama Power worked with SHPO and other stakeholders over 13 meetings to define the Project APE which includes all the lands within the Martin Project Boundary. Staff states that Alabama Power should evaluate currently inundated sites within the APE for listing on the National Register if and when they become exposed (and any sites that may be inundated in the future), assess the effects of inundation on all eligible resources, and implement appropriate treatment measures *Id.* at 137-138. Alabama Power will evaluate currently inundated sites within the APE that have been determined eligible for the National Register (or are undetermined) and coordinate the treatment with the SHPO. Staff also asks for clarification in the final HPMP of the National Register status of the Martin Dam, and any other Project features and equipment more than 50 years old, including the fourth generating unit. SHPO has stated (March 21, 2012 letter) that the Martin Dam Powerhouse, Martin Dam, and the Stilling Basin are eligible for the listing under Criteria A and C *Id.* at 137-138. Alabama Power will also determine if the structures at the Martin Construction Camp/Project Village are a contributing element with respect to the Martin Dam complex. In addition, Appendix E of the draft HPMP provides a list of activities that Alabama Power believes should be exempt from Section 106 review. These activities have been determined to have little or no potential effect on historic properties, including repair or replacement of turbines, generators, governors, and wicket gates.

IV. Staff Should Clarify Several Issues in its Analysis of Shoreline Impacts

The DEIS contains multiple inconsistencies and points for possible confusion related to the 30-foot buffer/control strip surrounding Lake Martin. As an initial matter, Alabama Power has previously used the term “30 ft buffer strip” in the current Martin Land Use Plan but has since changed the term to “30 ft control strip” to more accurately reflect the nature of these lands. To avoid any confusion in the FEIS or new license, Alabama Power wishes to clarify the nature and location of what it now refers to as the “30 ft control strip.” By way of background, during the relicensing process in the 1970s, agency consultation yielded the request for a buffer zone around Lake Martin. FERC recognized that, except in limited cases, Alabama Power did not have land rights above the 491’ msl (full pool) elevation. Alabama Power submitted, and FERC approved, the Martin Recreation Plan in which Alabama Power retained a 30 ft buffer (control strip) on Project Lands removed from the Project Boundary where Alabama Power had the appropriate land rights to do so. Thus, the 30 ft control strip is only located where Project Lands were removed from the Project Boundary and Alabama Power sold the removed land to private land owners while retaining a 30 ft easement. In Attachment A, Alabama Power provides necessary revisions to several sections of the DEIS to reflect the correct intermittent nature of the 30 ft control strip.

In Draft Article 413, Item 5, staff requests that Alabama Power include in its SMP “a provision to limit construction of new seawalls and criteria that must be applied in approving the installation of any new seawall.” Alabama Power’s current practices limit the construction of

seawalls using the criteria detailed in the Standard Land Use Article and the Programmatic General Permit from the Corps. The Standard Land Use Article provides that “[b]efore granting permission for construction of bulkheads or retaining walls, the licensee must: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline.” The Programmatic General Permit states as follows:

APCO-PGP-5 - Residential Bank Stabilization: (Sections 10 & 404) Structures and discharges of dredge or fill material for the purposes of bank stabilization are authorized under this PGP, provided the following criteria are met:

- a. The proposed bank stabilization activity shall be roughly parallel to the shoreline, and located at the full pool elevation of the reservoir.
- b. No fill material shall be placed in special aquatic sites, including wetlands. Wetlands may be protected as a result of the proposed bank stabilization project, as long as no adverse impacts to wetlands result from the proposed project, including the interruption or disturbance of the wetland’s hydrologic regime (i.e. bulkheads with alternating boards).
- c. The applicant shall submit photos to APCO of the shoreline to be stabilized, documenting the absence of special aquatic sites, including wetlands.
- d. Planting or use of invasive vegetation is not authorized.

Approved Construction Methods / Materials:

- a. Natural Bank Dressing: (1) The placement of less than 1 cubic yard of bedding material below the full pool elevation of the reservoir per linear foot of shoreline for the purpose of planting medium; (2) filter mats (i.e. coconut rolls) and other erosion control devices; (3) other materials or structures designed to establish appropriate native vegetation.
- b. Riprap: The placement of clean material free of exposed rebar, asphalt, plastic, soil, or other inappropriate materials (i.e. trash, debris, car bodies, etc.) along the shoreline. The placement of riprap is also authorized to augment other bank stabilization activities. Bank channels protected by riprap are limited to 1 (one) cubic yard of material placed per linear foot.
- c. Bulkheads and Backfill (including poured concrete walls, interlocking brick systems, sheet piling, and other vertical bank stabilization structures, limited to 1,000 linear feet): New bulkheads shall not extend more than 30 inches waterward from the full pool elevation of the reservoir. Replacement bulkheads shall not extend more than 24 inches waterward from a failed bulkhead. Suitable material must be used for all backfill activities (unsuitable material includes, but is not limited to: trash, debris, car bodies, asphalt, creosote timbers, etc.). Riprap shall be placed at the toe of all new and reconstructed bulkheads two feet above the water bottom and two feet out from the

bottom of the bulkhead. The placement of the bulkhead, backfill, and rip-rap shall not exceed 1 cubic yard of material below the full pool elevation per linear foot of shoreline.

- d. Other materials: Other materials and methods may be authorized under this PGP, but will require individual project review by the Corps.

This permit does not authorize: (1) any discharge or placement of any structure in special aquatic sites, including wetlands; (2) ancillary structures such as wing walls, groins, jetties, or any other similar structures; (3) any activity to replace land lost due to erosion or otherwise accrete land.

These existing practices provide sufficient limitations on the construction of new seawalls and provide criteria by which they are approved and constructed. The Standard Land Use article requires Alabama Power to consider whether vegetation or riprap would be adequate erosion control. The limitations placed on riprap by the Corps effectively limit when riprap is a viable option for residential developments and determine when seawalls would be required. Alabama Power therefore requests that the “Wildlife” portion of section 3.3.3.2 be revised to reflect Alabama Power’s current processes for limiting the construction of seawalls.

Draft License Article 413 requests that Alabama Power explain why the “373.1 acres designated as Natural/Undeveloped are no longer needed for project purposes and identify the acreage on a map or maps in relation to the project boundary.” As Alabama Power stated in our December 9, 2011 Response to FERC Request for Additional Information, the Natural/Undeveloped lands proposed to be removed were part of an overall assessment of the existing Martin land classifications and a review of lands necessary for project purposes and those lands that did not serve a project purpose. The existing Martin license includes a shoreline classification entitled “Potential Residential.” This future residential development and occupancy of project lands is inconsistent with the Commission’s policy of maximizing public recreational use of project lands. Therefore, Alabama Power has proposed in the license application to reclassify these lands as Natural/Undeveloped project lands. Alabama Power has also proposed to reclassify an existing large Public Park site to Natural/Undeveloped project lands due to the lack of demand for park facilities. These reclassifications of existing lands within the project would result in an increase of over 1000 acres of Natural/Undeveloped lands on the reservoir.

One of the objectives of the assessment of existing Martin land classifications was to ensure that the Martin project included the necessary lands for project purposes, but only those lands needed for would have resulted in the addition of a significant amount of Natural/Undeveloped project lands, an project purposes consistent with FERC regulations. Because the above referenced reclassifications attempt was made to remove some amount of existing Natural/Undeveloped lands around the reservoir in order to get closer to the existing balance of this classification of lands in the project. This removal process also involved an effort to more effectively distribute Natural/Undeveloped lands all around the lake so that there would not be too large a percentage of project Natural/Undeveloped lands concentrated in any particular area. The result of this effort to maintain the approximate balance of Natural/Undeveloped lands currently within the project and to better distribute project Natural/Undeveloped lands around the reservoir is the removal of certain acres from the project and the addition of the new tracts of land around the reservoir. Though Alabama Power

attempted to balance these additions and removals of project lands as equally as possible to maintain approximately the same number of acres of Natural/Undeveloped lands in the project, the proposal in the license application will result in an increase of over 700 acres of Natural/Undeveloped lands to the project.

Section 3.3.5.1 of the DEIS, “Project Boundary Modifications” contains an inaccurate statement regarding the acreage being added. The correct number is 991.4 acres. Also, in the “Shoreline Management Plan” portion of Section 5.2.2, staff states that “the existing Shoreline Classification maps do not take into account certain project boundary modifications proposed by Alabama Power, including changes to the land use classification system. The SMP maps do in fact take into account the proposed changes; therefore, Alabama Power asks that the FEIS state that the Shoreline Classification Maps in the SMP are correct with regard to the project boundary modification and proposed land use classification system.

The FEIS should also reflect that Alabama Power does own some lands above the 491’ contour, contrary to staff’s statement in the “Land Use” portion of Section 3.3.5.1 that “Alabama Power does not own lands above the 491-foot contour.” Section 3.3.5.1 should be corrected in the FEIS. Additionally, the last sentence in Section 2.1.1 should be corrected. Attachment A contains these necessary revisions.

Alabama Power also wishes to clarify the difference between “Sensitive Resources” and the Natural/Undeveloped Shoreline Classification as the DEIS incorrectly refers to the Sensitive Resources designation as a land use classification. The SMP defines these terms as follows:

“Sensitive Resources” is a designation that is used in conjunction with the other Project land classifications (e.g., Natural/Undeveloped, etc.). For example, a portion of an area that is classified as “Natural/Undeveloped” may also be designated as sensitive. This designation contains Project lands managed for protection and enhancement of sensitive resources. Sensitive resources include resources protected by state and/or federal law, executive order, and other natural features considered important to the area or natural environment. This includes archaeological resources, sites/structures listed on or eligible for listing on the National Register of Historic Places, wetlands, floodplains, Rare, Threatened and Endangered (RTE) habitat protection areas, significant scenic areas, and other sensitive ecological areas.”

“NATURAL/UNDEVELOPED Lands included in the Natural/Undeveloped classification include Project lands to remain in an undeveloped state for specific project purposes including: to protect environmentally sensitive areas...”

The use of “sensitive” in the definition of Natural/Undeveloped may have inadvertently led staff to conclude that any sensitive resources would be classified as Natural/Undeveloped. However, this is not the case, as sensitive resources may occur in any classification. Several instances in the DEIS refer to the sensitive resources designation as a land use classification. For example:

- Last paragraph of section 3.3.3.1,
- “Our Analysis” for the “Sensitive Wildlife and Sensitive Resources” portion of section 3.3.3.2
- “Our Analysis” for the “Recreation Plan” portion of 3.3.5.2
- “Dredging” portion of the “Shoreline Management Policies” in section 3.3.5.2
- First paragraph of “SMP Review and Update” in section 3.3.5.2
- Draft Article 413 1(c)

Alabama Power asks that these references be edited to reflect the fact that the sensitive resources designation is not a land use classification. Attachment A contains the necessary revisions.

The FEIS should also reflect the following revisions to the “Shoreline Management” portion of Section 3.3.5.2, related to Shoreline Land Use classifications. First, the DEIS defines the “Unclassified” classification as “the shoreline miles where Alabama Power has no project lands above the 491-foot contour. There would be 507.6 miles of shoreline within this classification.” Land Use Classifications, by nature, are used to categorize lands within the Project Boundary. Alabama Power wishes to delete “Unclassified” as a Shoreline Land Use classification as the definition refers to lands outside the Project Boundary; this was included for information purposes only and Alabama Power will clarify this in its revised SMP. The DEIS also details two classifications for recreational lands: Recreation and Commercial Recreation. The Recreation classification should not include land developed for commercial recreation, as that has its own classification. Finally, the description of the 30 ft control strip classification should be amended to reflect the accurate nature of these projected lands. The necessary revisions are included in Attachment A.

Based on the above discussion, Alabama Power proposes the following modifications to draft License Article 413:

Draft Article 413. Shoreline Management Plan. Within 1 year of license issuance, the licensee shall file with the Commission for approval, a revised Shoreline Management Plan to protect the scenic quality of, and environmental resources at, the Martin Dam Project. The plan shall include, at a minimum: (1) a description of the land use classification system that includes: (a) a map or maps of the following eight land use classifications: (i) Project Operations; (ii) Recreation; (iii) Quasi-public; (iv) Commercial Recreation; (v) Natural/Undeveloped; (vi) Martin Small Game Hunting Area; and (vii) 30-Foot Control Strip; ~~and (viii) Unclassified~~; (b) a table that identifies the acres associated with each of the above land use classifications; (c) a provision for using a geographic information system to record ~~sensitive species found~~ in areas classified designated as Sensitive Resources; and (d) a description of allowable and prohibited uses for each of the above land use classification; (2) a description of best management practices, including bio-engineering techniques such as willow and wetland plantings to control erosion; (3) a description of the Dredging Permit Program; (4) a

description of the Shoreline Compliance Program specific to the Martin Dam Project; ~~(5) a provision to limit construction of new seawalls and criteria that must be applied in approving the installation of any new seawall;~~ (6) a description of existing unpermitted structures at the Martin Dam Project, including a schedule for resolution; and (7) a provision for review and update, if necessary, of the Shoreline Management Plan.

The revised Shoreline Management Plan shall also include a provision to classify project lands from the Natural/Undeveloped Classification to the Recreation Classification that comprises ~~eight~~ five project recreation sites: ~~(1) Madwind Creek Ramp (5.8 acres); (2) Smith Landing (4.2 acres); (3) Union Ramp (7.0 acres); (4) Bakers Bottom Landing (1.9 acres); (5) Jaybird Landing (19.9 acres); (6) Paces Point Ramp (8.7 acres); (7) Paces Trail (24.1 acres); and (8) Ponder Camp (Stillwaters Area Boat Ramp) (36.4 acres)~~ and add to the Project three project recreation sites: Madwind Creek Ramp (5.8 acres); Smith Landing (4.2 acres); and a portion of the Union Ramp site (7.0 acres).

~~The licensee shall explain why the 373.1 acres designated as Natural/Undeveloped are no longer needed for project purposes and identify the acreage on a map or maps in relation to the project boundary.~~

The Shoreline Management Plan shall be developed after consultation with the Alabama Department of Conservation and Natural Resources, the U.S. Fish and Wildlife Service, the Alabama State Historic Preservation Office, and the U.S. Bureau of Land Management. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific reasons.

The Commission reserves the right to require changes to the plan. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.

V. Recreation Issues

In Section 3.3.5.1 of the DEIS, staff's analysis of Recreation Resources and Land Use relies in part on Alabama Power's 2008 Recreation Study. Because this 2008 study was conducted during a year of severe drought on the reservoir, it does not adequately reflect typical recreation and land use numbers. The 2010 study better reflects typical reservoir conditions and therefore more reliable recreation and land use numbers. Therefore, to ensure a proper and accurate analysis of the data related to recreation and land use, the FEIS should use the 2010 study as its primary reference. Where the 2008 study is referenced, the FEIS should include an explanation of the drought conditions that occurred during the 2008 study.

The FEIS should also clarify the number of existing and proposed recreation sites at the Martin Project. Alabama Power currently has 14 existing recreation sites. Throughout the

DEIS, staff states there are 12 existing sites. Staff's confusion may have been the result of Alabama Power's response to FERC's additional information request, and Alabama Power seeks to clarify the number of existing and proposed recreation sites that should be identified in the FEIS. Alabama Power is proposing to maintain 12 of the 14 existing sites. Alabama Power has proposed to change two of the existing sites: the General Public Use Area #2 is proposed to be reclassified to Natural/Undeveloped and the Lake View Park site is proposed to be removed from the Project. Both of these changes would be consistent with uses occurring at the sites. Alabama Power will add seven sites to the Project – Bakers Bottom, Jaybird Landing, Madwind Creek, Pace Point, Paces Trail, Ponder Camp (held for future use) and Smith Landing. Four are already within the Project Boundary and the remaining three will be brought into the Project Boundary. Table 4-1 in Alabama Power's Recreation Plan details the 14 existing and 19 proposed sites. This table does not show the two areas to be removed.

Draft License Article 413 would require Alabama Power in its Shoreline Management Plan to “include a provision to classify project lands from the Natural/Undeveloped Classification to the Recreation Classification that comprises eight project recreation sites” The FEIS and new license should reflect that the Madwind Creek, Smith Landing and Union Ramp sites are not being reclassified, but instead are being added to the project.

Sections 3.3.5.2 and 5.2.2 of the DEIS suggest that Alabama Power's proposed Recreation Plan does not contain the necessary as-built/conceptual design drawings or other requested information: “Alabama Power's proposed Recreation Plan includes non-project facilities (*i.e.*, facilities that it would not operate and maintain), does not reflect all existing project facilities, does not describe how Alabama Power would monitor recreational use and demand, and does not provide certain details (*e.g.*, number of parking spaces.)” DEIS at 162. Table 3-1 of the Recreation Plan provides the amenity information requested and the following pages describe all of the Project Recreation Sites in detail. Appendix D of the Revised Recreation Plan (submitted in December 2011 in response to FERC's August 1, 2011 request for additional information), includes current as built/conceptual drawings. Details on monitoring are contained in the next paragraph. Conceptual drawings will be furnished in the final Recreation Plan and as-built/conceptual drawings will be submitted as sites are completed. The FEIS should reflect an accurate summary of the Recreation Plan and an explanation of Alabama Power's plan to supply the information requested. In staff's description of the Recreation Plan in Section 5.2.2, it also states that “the plan reserve[s] one additional site, the 36.4-acre Ponder Camp (Stillwaters Area Boat Ramp) for future recreation development as demand increases.” The FEIS should recognize that development of this site would be dependent on support from the county. The existing county road is not sufficient for the increased traffic that would be associated with development of the Ponder's Camp site.

In its analysis of the Recreation Plan in Section 3.3.5.2, staff states it is unclear whether Alabama Power will continue to provide an annual addendum to the Recreation Plan that could inform stakeholders and the Commission of the status of implementation of the Recreation Plan. Staff has therefore requested that Alabama Power's revised Recreation Plan identify an implementation schedule, provide for future monitoring and include a provision to review, update, or modify the Recreation Plan. The FEIS should indicate that Alabama Power will rely on the FERC Form 80 process, SCORP analysis and the expertise of the ADCNR officials for

recreational use monitoring and guide planning and will file plan updates along with Form 80 submittals. Alabama Power will amend, as necessary, the Recreation Plan every six years to coincide with the FERC Form 80 process. Alabama Power will also consult with ADCNR on an “as-needed” basis as well as file a Recreation Plan Addendum on Project eligible recreation facilities on an “as-needed” basis, to document construction as it is completed. These addenda will be stand-alone documents that will contain meeting minutes (if any), scheduling changes (if any), and photographs and "as built" drawings of recreation facility components and completed facilities. In addition, if future proposals modify or increase Project recreation sites, Alabama Power will file the appropriate documentation with FERC prior to construction.

The FEIS should also note that Alabama Power is currently implementing a recreation inspection program which consists of:

- Weekly visits by maintenance contractors who perform routine maintenance activities (e.g. trash removal, grass cutting, etc.) as well as report unusual conditions
- Monthly inspections by Shoreline Management representatives
- Quarterly inspections by Shoreline Management supervision
- Documentation of recreation assets, inspections and maintenance activities in a custom software program

Finally, with respect to the Recreation and Land Use analysis, the DEIS does not explain the basis for the cost estimates in Table 4-3. Alabama Power cannot verify these costs and questions staff’s source and calculation. For recreation areas, costs are determined by the results of annual consultation with ADCNR. The purpose of this consultation is to accommodate changing recreational needs, which in turn determines cost.

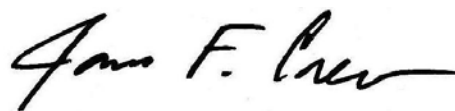
Conclusion

Again, Alabama Power appreciates this opportunity to provide comments on the DEIS for the Martin Project. Alabama Power believes these comments provide the additional information, clarification and analysis necessary to support acceptance of our winter pool increase and conditional fall extension proposals. As explained above, this issue was the single most important issue that arose during the stakeholder participation in the ILP for the Martin relicensing. Alabama Power’s proposal addressed this very significant stakeholder interest by studying, evaluating, and then developing a plan of operations that took into account all potential resources impacts and stakeholder concerns. As FERC is aware, Alabama Power’s proposal did not provide stakeholders all of the changes they sought. Our studies and evaluations demonstrated that the early spring fill, permanent fall extension and a five-foot winter pool increase were not feasible. Downstream and other stakeholder or resource interests compelled us to propose a more balanced plan of operation than was sought by the recreation interests on Lake Martin, and this proposal is reflected in our application. Though some of these stakeholders were initially disappointed that Alabama Power’s application did not propose all of the operational changes they sought, it is clear from the July 17th public meeting and the overwhelming number of DEIS comments filed thus far that the property owners and recreation interests on Lake Martin are in full support of our proposal. Therefore, we respectfully request

that staff take a closer look at the information provided by Alabama Power previously and with these comments and accept Alabama Power's proposals. Additionally, Alabama Power is providing comments on various aspects of the DEIS relating to operational requirements; environmental impacts and related requirements; impacts to shoreline management and related requirements; and the DEIS' analysis of recreation and land use. We ask that these be analyzed in the FEIS and reflected in the new Martin Dam license.

If you need additional information or have questions regarding any of our comments, please contact me at 205-257-4265 or jfcrew@southernco.com. Thank you.

Sincerely,

A handwritten signature in black ink that reads "James F. Crew". The signature is written in a cursive, flowing style.

James F. Crew
Manager, Hydro Services
Alabama Power Company

Attachments

cc: David Turner, FERC
Stephen Bowler, FERC
Monte Terhaar, FERC
Martin Stakeholder Mailing List

**Alabama Power Company's Comments on Draft Environmental Impact Statement for
Martin Dam Hydroelectric Project – FERC Project No. 349-173**

Attachment A -- Proposed Edits to DEIS

Below is a list of proposed edits to the DEIS. Where necessary, inserts are marked by red/double underline, and deletions are marked in strikethrough.

DEIS Cite	Proposed Change
Executive Summary, Page xiii	“On a seasonal basis, water levels in Lake Martin <u>can</u> fluctuate by as much as ±10 feet between elevations 480 <u>1</u> and 491 feet msl.”
Executive Summary, Page xvi-xvii	“Implementing the final WMP would enhance habitat for longleaf pine-dependent species, develop opportunities for public hunting, protect bald eagles, and <u>continue to</u> provide a buffer zone <u>existing Natural/Undeveloped</u> lands for water quality protection and wildlife habitat.”
Page 11	“Martin dam impounds about 31 miles of the Tallapoosa River, forming Lake Martin reservoir (Lake Martin), a 40,000 <u>41,150</u> -acre reservoir when at a normal full pool elevation of 491 feet mean sea level (msl) with. . . .”
Page 11	“The existing project consists of: (1) Lake Martin reservoir; (2) <u>an approximately 2,255</u> 2,000 -foot-long concrete gravity dam and earth dike section that includes”
Page 12	“Alabama Power has flood easements for the entire length of the shoreline up to the 491-foot contour. However, it does not own lands above that elevation.” Alabama Power would like this statement amended to reflect Alabama Power’s ownership of some lands above the 491’ contour.
Page 12	“On a seasonal basis, water levels in Lake Martin fluctuate by as much as ±10 feet between elevations 480 <u>481</u> and 491 feet.”
Page 12	“Project benefits, as identified in the original project license, include hydroelectric power, limited seasonal flood control when the reservoir is in drawdown condition, recreation, municipal and industrial water supply, aquatic flow maintenance, and navigation flow support.”

DEIS Cite	Proposed Change
Page 12	“During generation, the four turbines release a flow of up to <u>approximately</u> 17,900 cubic feet per second (cfs).”
Page 13, footnote 13	“The drought curve is not a current license requirement, but has been voluntarily followed <u>served as a guide</u> to address <u>ing</u> recent drought concerns.”
Page 14	“The curve remains at this elevation until August 30 <u>September 1</u> , and is gradually lowered 10 feet to elevation 481 feet by December 31.”
Page 14	“Alabama Power <u>generally</u> has <u>fee interests</u> easements on the reservoir up to elevation 491 feet.”
Page 14	“The current license states that flood control operations are set forth in Alabama Power’s revised Exhibit H dated January 12 <u>23</u> , 1973, as amended November 16, 1978.”
Page 14	“Above elevation 489 feet, the turbines at Martin dam are operated as in #2 above and further, if required to avoid the water level rising above elevation 491 feet, the turbines are operated to provide a volume of outflow from Martin dam at least equal to the discharge from all available turbine units operating at full gate (<u>approximately</u> 17,900 cfs). In addition, gates are raised so that the reservoir does not exceed elevation 491 feet, although the reservoir level may increase after all gates are raised if inflow exceeds the gate capacity. At elevation 491 feet, the spillway has a discharge capacity of <u>approximately</u> 133,000 cfs.”
Page 15	“Exhibit H requires Alabama Power to submit a report to the Commission and Lake Martin Resource Association, Inc. (Lake Martin RA) when the reservoir is at or below 488 <u>487</u> feet for 7 days”
Page 15, fn 14	“During relicensing in the 1970s (the license was issued <u>on May 11, 1978</u> in 1975, with an amendment in 1978), Alabama Power and certain stakeholders agreed to change the operation of the project so that a higher pool elevation could be maintained during normal project operations.”
Page 20	All hydraulic capacities proposed in the flood control operations are approximate.

DEIS Cite	Proposed Change
Page 21	<p>“During periods when inflow exceeds the total hydraulic capacity of the turbines, the 3-hour average outflow rate from the reservoir would not exceed the concurrent 3-hour average inflow rate, except to evacuate accumulated surcharge storage prior <u>subsequent</u> to the predicted time of peak inflow. This would ensure that the outflow from the reservoir is lower than the inflow.”</p>
Page 23	<p>“Recent responses to drought conditions have included temporary amendments to water level requirements and flow release requirements at Lake Martin”</p>
Page 35	<p>“The presence of bedrock near the elevation of the potential erosion should limit the amount <u>of</u> erosion”</p>
Page 39, Table 3-2	<p>“USGS gage no. 02414500 Tallapoosa River at Waldey <u>Wadley</u>”</p>
Page 40-41	<p>“Alabama Power coordinates the operation of the Martin dam project with its other hydropower projects on the Tallapoosa River and the Coosa River to minimize flooding.”</p> <p>Alabama Power follows flood control procedures at the Coosa projects and at the Tallapoosa projects, but these procedures do not require coordination between the river systems.</p>
Page 41	<p>“Table 3-4 shows calculated flood frequency flows for unimpaired conditions at Martin dam, and actual flood flow data at Martin dam and downstream at the Tallahassee <u>Tallassee</u> gage. This table shows that Martin dam has been operating in a manner that has decreased the flood flows to rates lower than the unimpaired conditions. The table also demonstrates that flood flows even a short distance downstream at the Tallahassee <u>Tallassee</u> USGS gage are influenced by tributary inflow.”</p>
Page 41	<p>“Lake Martin elevation (the top line on figure 3-6) vary more than those of the Yates and Thurlow reservoirs, reflecting the peaking operations at Martin and run-of-river operations at Yates and Thurlow.”</p> <p>The top line of Figure 3-6 reflects the seasonal draw down of Martin, not peaking operations.</p>
Page 42-43, Table 3-4	<p>Replace all instances of Tallahassee with Tallassee.</p>

DEIS Cite	Proposed Change
Page 44	“River flows below Thurlow dam are measured at the Tallahassee <u>Tallassee</u> USGS gage no. 02418500 on the Tallapoosa River below Tallassee, located at RM 47.98 about 2 miles downstream from Thurlow dam (table 3-5).”
Page 44, Table 3-5	“Monthly flow statistics downstream of Thurlow dam at the Tallahassee <u>Tallassee</u> USGS gage no. 02418500, Tallapoosa River, below Tallassee, Alabama, 1992 to 2011 (Source: USGS, 2012).”
Page 48	“This monitoring included tailrace readings every 20 <u>30</u> minutes in the 2002 to 2005 period and every hour in 2006 to 2009.”
Page 52	“Flood storage <u>and operations</u> within the reservoir prevent flooding in the reservoir . . .”
Page 53, footnote 41	<p>“The 100-year design flood was synthetically constructed by applying seven 100-year events.”</p> <p>This sentence is not accurate; however, we do not know what point is being made so we cannot propose a correction.</p>
Page 56	“After calibration and verification, the 100-year design flood was applied to the model, and downstream flood level increases were computed to be between 0.75 and 3-0 <u>2.3</u> feet resulting from a 3-foot increase in the winter pool, as measured at cross sections of the HEC-RAS model, with greater increases in the upper section of the river.”
Page 57, Table 3-9	Footnote “a” missing.
Page 58	“The proposed winter pool elevation of 484 feet m <u>msl</u> would flood an additional 2,119 acres (3.31 square miles) of land, including. . . .”
Page 59	“Table 3-11 shows estimates of the currently affected structures and the number of structures that would <u>could</u> be affected by different modeled scenarios.”
Page 60	“With the proposed higher Lake Martin winter elevation, in the winter months, there would also be an increase in frequency of spillage at Martin dam (from one or more of the 20 spillway gates), because the project could not use its <u>full</u> storage volume to retain small magnitude flood events.”

DEIS Cite	Proposed Change
Page 61	“However, flood levels during a 100-year flood event during the winter or early spring could be between 0.75 and about 3 <u>2.3</u> feet higher in some downstream locations.”
Page 64, fn 45	“The Alabama DROP is Alabama Power’s a draft plan to manage Alabama Power’s water resources within the Alabama River basin during drought conditions.”
Page 77-78	<p>“However, Alabama Power’s proposal to raise the winter pool at Martin dam, would reduce flood storage and raise the 10-year flood levels on the lower Tallapoosa by between 0.75 and 3.0 feet depending on location. One-hundred-year flood levels on the Alabama River under the same operational scenarios would increase by a much lower amount, because the Coosa River Basin has a drainage area of about two times as large as the Tallapoosa River and would continue to have a greater influence on flows on the Alabama River. However, in combination with Alabama’s proposal to raise the winter pools of three developments of the Coosa River Hydroelectric Project, there would be a cumulative effect on downstream flooding. Such an effect likely would be subject to comprehensive analysis by the Corps in developing its basin manuals.”</p> <p>FERC recently rejected Alabama Power’s proposal to increase winter pool elevations at 2 of the Coosa River Project developments; therefore, there is no reason to comprehensively analyze a rejected proposal with our current Martin proposal.</p>
Page 81 and 86	<p>Staff refers to 858 acres of aquatic vegetation on Lake Martin.</p> <p>Staff has misinterpreted information filed with the license application pertaining to aquatic vegetation. In the final 12b study report, Alabama Power identified 20 sites in the Martin reservoir that had the greatest potential for aquatic vegetation issues. The 858 acres staff reference are the total acreage for the 20 potential sites at elevation 481 ft msl. Currently, these 858 acres are not vegetated and therefore treatment is not necessary.</p>
Page 82	“An abundance of neotropical migrants including numerous warblers, vireos, and hummingbirds also occurs <u>occur</u> in the Lake Martin area.”

DEIS Cite	Proposed Change
Page 83	“As part of the SMP, Alabama Power proposes to develop a Sensitive Resources geographic information systems data layer to be part of the Sensitive Resources Lands Classification , which would include locations of rare, threatened, and endangered species, as well as sensitive habitats.”
Page 89	<ul style="list-style-type: none"> • “the management of <u>Natural/Undeveloped</u> project lands adjacent to the Irwin Shoals Area (Secondary Management Area) in the upper reaches of Lake Martin for maintenance of water quality buffers and wildlife habitat;”
Page 91	“Maintaining <u>existing Natural/Undeveloped lands</u> water quality buffers and continuing to implement BMPs would benefit wildlife through improved water quality, providing habitat behind natural and undeveloped shoreline, and providing upland habitat and movement corridors among isolated habitats.”
Page 91	<p>“FWS initially provided a list of five federally protected species potentially occurring in the project affected area, which it later expanded to ten species (Alabama Power, 2012b). None of the nine federally protected species were documented during the surveys for rare, threatened, and endangered species.”</p> <p>Clarify correct number of species.</p>
Page 101	“ This <u>These</u> 2008 data indicate <u>indicates</u> annual daytime visitation of 2,955,600 and annual nighttime visitation of 620,700.”
Page 104	<p>“Alabama Power owns lands within the entire length of the shoreline to the 491-foot contour; however, Alabama Power does not own lands above the 491-foot contour.”</p> <p>Alabama Power would like this statement amended to reflect Alabama Power’s ownership of some lands above the 491’ contour.</p>
Page 106	<p>“including navigable waters of the United States, such as the Tallapoosa River.”</p> <p>Martin reservoir is not on a stretch of the Tallapoosa River that is navigable.</p>

DEIS Cite	Proposed Change
Page 119	“Alabama Power proposes annual O&M at DARE boat landing <u>Boat Landing</u> , DARE Power Park, Scenic Overlook, Union Ramp, Bakers Bottom Landing, Pace Point Ramp, Pace Trail, Jaybird Landing, Madwind Creek Ramp, Ponder Camp, and Smith Landing.”
Page 122	“ <u>Recreation</u> – Lands would be managed <u>owned</u> by Alabama Power for existing and/or future recreational use. This includes land developed for commercial recreation with provisions for public access, recreation, open space, and future recreation development. There would be 334 acres of land under this classification.”
Page 122	“ <u>30-foot Control Strip</u> – This classification addresses project lands held within an easement retained by Alabama Power on properties <u>where adjacent lands were previously</u> once owned by the company <u>and have been removed from the project</u> . Alabama Power prohibits certain activities (e.g., habitable structures) within this classification. There would be 690.2 acres of land within this classification.”
Page 124	“ <u>Dredging</u> – Alabama Power would allow dredging, consistent with the Corps’ Programmatic General Permits, except that dredging would be restricted in and around the shoreline classified <u>designated</u> as Sensitive Resources Lands .”
Page 124	“Alabama Power also states that any information related to Sensitive Resources Lands Classification <u>designation</u> (e.g., rare, threatened, and endangered species locations and habitats) would be updated as new information arises.”
Page 125	“Approximately 507.6 acres of lands <u>shoreline miles</u> would be designated Unclassified <u>do not have project lands above the 491 foot msl</u> .”

DEIS Cite	Proposed Change
Page 128	<p>“Alabama Power proposes to reclassify land use on 1,294.4 acres within the project boundary. Alabama Power proposes to maintain a 30-foot control strip (or vegetated buffer) around the reservoir; therefore, the buffer <u>control</u> strip would not be affected by the project boundary modifications”</p> <p>Alabama Power does not agree with this characterization of the control strip. The 30 ft control strip does not exist on all parts of the reservoir as implied by the above language. Alabama Power would maintain a 30 ft control strip on all lands removed from the Project, and with proposed modification the 30 ft control strip would be added to 195.3 miles of shoreline as shown in Table E-67 of Exhibit E of Alabama Power’s application.</p>
Page 128	<p>“With regard to the total 991.54 acres to be added, Alabama Power proposes to add 17 acres of non-project lands that include. . . .”</p>
Page 142, Table 4-1	<p>Change Value for “Discount rate (percent)” from 8 to 8.55.</p>
Page 158	<p>“4) During periods when inflow exceeds the total capacity of the hydraulic turbines, the 3-hour average outflow rate from the reservoir would not exceed the concurrent 3-hour average inflow rate except to evacuate accumulated surcharge storage prior <u>subsequent</u> to the predicted time of peak inflow. This would ensure that the outflow from the reservoir is lower than the inflow.”</p>
Page 161	<p>“We estimate that the levelized annual cost for this eel study would be \$269,750-<u>7,000</u>.”</p>
Page 161	<p>“A general survey of eel distribution in the Tallapoosa River, as proposed by Alabama Power, is not necessary to identify a need for eel passage at Martin dam or to develop specific measures to do so. –”</p>
Page 164	<p>“With regard to Interior’s recommendation to increase the total buffer width to 100 feet, Alabama Power does not own the land beyond elevation 491 feet and would need to acquire rights to those lands. While some environmental benefits could accrue from an increased buffer, there is nothing in the record to indicate that an increased buffer is necessary. The existing 30-foot buffer <u>control strip</u> is adequate and we do not recommend expanding the project boundary in order to increase the buffer zone.”</p>

DEIS Cite	Proposed Change
Page 164	“Additionally, the existing Shoreline Classification maps do not take into account certain project boundary modifications proposed by Alabama Power, including changes to the land use classification system. Therefore, we recommend that the SMP be revised to include updated Shoreline Classification maps.”
Page 165	“A 30-foot control strip (or vegetated buffer) would be maintained on the project lands withdrawn from the project boundary.”
Page 168	“Alabama Power’s studies conclude that the increase in 100-year flood elevation in the Tallapoosa River below Martin dam, associated with Alabama Power’s proposed 3-foot winter pool increase, is estimated to vary between 0.75 and 3 <u>2.3</u> feet, with the greater increases in the upper section of the river.”
Page 174	“The potential benefits associated with the conditional fall extension must be considered against the flood effects to downstream landowners and the likelihood of implementation.”
Appendix A, Page A-3: Draft Article 402	<p><u>Flood Control Curve.</u> The flood control curve reflects the maximum elevation at which the lake may be <u>normally</u> maintained before implementing the flood control provisions as identified in Article 403. On January 1, the curve is at elevation 481 feet mean sea level(msl) and remains at this elevation until February 17, when filling begins. On this date the curve rises until it reaches elevation 491 feet msl on April 28. The curve remains at this elevation until August 30<u>September 1</u>, and is gradually lowered 10 feet to elevation 481 feet msl by December 31.</p> <p><u>Operating Curve.</u> The area between the flood control curve and operating curve represents the range in which the lake should be maintained under normal conditions. On January 1, the curve is at elevation 477 feet msl and gradually rises to elevation 480 feet msl on February 28. On this date the curve gradually rises to elevation 490 feet msl by April 28, and remains at elevation 490 feet msl until July 5. The curve gradually lowers to elevation 486 feet msl by October 31, and continues to lower to elevation 477 feet msl by December 31. The licensee shall notify the Commission when Lake Martin is at or below 487 <u>488</u> feet for 7 days June 1 through Labor Day, or 2 feet below the operating curve for 7 days Labor Day through May 31.”</p>
Appendix A, Page A-4: Draft Article 403	“The licensee <u>generally</u> has easements <u>a fee interest</u> up to elevation 491 feet mean sea level (msl), thus the licensee shall operate the project such that Lake Martin does not exceed elevation 491 feet msl. Flood control operation shall be guided by the following:”

DEIS Cite	Proposed Change
Appendix A, Page A-4: Draft Article 403	“(4) During periods when inflow exceeds the total hydraulic capacity of the turbines, the 3-hour average outflow rate from Lake Martin shall not exceed the concurrent 3-hour average inflow rate, except to evacuate accumulated surcharge storage prior <u>subsequent</u> to the predicted time of peak inflow.”
Appendix C, Page C-5	Remove duplicate of Figure C-1.
Appendix C, Page C-9, Table C-2	Replace all instances of Tallahassee with Tallassee

**Alabama Power Company's Comments on Draft Environmental Impact Statement for
Martin Dam Hydroelectric Project – FERC Project No. 349-173**

Attachment B -- ADROP

Alabama-ACT Drought Response Operations Proposal (ADROP)

Overview

Alabama Power Company (“APC”) operates eleven hydropower dams in the Alabama-Coosa-Tallapoosa (“ACT”) River Basin. On the Tallapoosa River, Alabama Power operates the Harris, Martin, Yates and Thurlow hydroelectric dams and their reservoirs. On the Coosa River APC operates the Weiss, Neely Henry, Logan Martin, Lay, Mitchell, Jordan, and Bouldin hydroelectric dams and their reservoirs. The Coosa and Tallapoosa Rivers converge to form the Alabama River at Montgomery, Alabama. Alabama Power operates no reservoirs on the Alabama River, but its upstream operations can impact Alabama River flows and elevations. In addition to requirements contained in Alabama Power’s Federal Energy Regulatory Commission (“FERC”) licenses for its dams, Alabama Power has a commitment to the U.S. Army Corps of Engineers (“Corps”) to provide flows to the Alabama River.

The Alabama-ACT Drought Response Operations Proposal (“ADROP”) provides a plan for managing APC’s reservoirs within the ACT Basin during drought conditions. In order to determine when the system is entering or exiting a drought period, APC and the Alabama Office of Water Resources (“OWR”), along with state and federal agencies, will monitor defined rain and stream flow indicators within the ACT basin. When drought indicators reach specified levels, responses are triggered, resulting in pre-determined incremental reductions or increases of flow from APC’s reservoirs.

ADROP provides for three incremental drought intensity level responses based on the severity of drought conditions. These incremental drought intensity level responses are not rigid but provide a bracketed range of operations allowing for flexibility and smoother transitions in and out of a drought and from level to level. ADROP’s drought response triggers are primarily based on past operating experiences and lessons learned during 2007, the current drought of record for the basin. ADROP is a dynamic plan; it may evolve or be expanded in the future as requirements within the basin may shift. Moving forward, any revisions made to ADROP will be made in consultation with relevant state and federal agencies. Any provisions that will affect APC’s federal hydropower license requirements will be filed with the FERC for prior approval.

The following provides a snapshot of operations for normal water years, an explanation of ADROP’s drought indicators, triggers for each of the three incremental drought response levels, and a summary of operations at each drought response level.

Normal Conditions

During a normal water year, in accordance to our commitment to the USACE, APC releases a weekly target of 32,480 cubic feet per second-days (a measure of volume) out of Bouldin, Jordan and Thurlow dams into the Alabama River. This release equates to a 7 day average flow target of 4,640 cubic feet per second (“cfs”).

In accordance with FERC requirements to protect endangered species downstream of Jordan Dam on the Coosa River, APC provides a minimum continuous flow of 2,000 cfs from July through March. From April 1st through May 31st, in order to provide for recreation and

attraction flows for fish spawning, APC releases a continuous base flow of 4,000 cfs for 18 hours per day and an 8,000 cfs pulse flow for the rest of the day. During the month of June, the base and pulse flows are reduced incrementally to a continuous base flow of 2,000 cfs. From April 1st to October 31st, and on weekends and special holidays, additional recreational flows are released from Jordan Dam as scheduled in APC's FERC license guidelines. APC provides a year-round minimum continuous flow release of 1,200 cfs from Thurlow Dam on the Tallapoosa River.

Drought Indicators

Drought indicators are used to describe the onset, magnitude, duration, severity and extent of a drought. Because there is a well-established rain and stream gauging network in the ACT basin, ADROP relies on precipitation and stream flow indicators. Observations of precipitation and stream flow will be used to indicate when the ACT is entering into (or recovering from) a drought. ADROP's precipitation indicator is based on the average of normal monthly rainfall at the following airport rain gages: Rome, Anniston, Shelby County and Montgomery. ADROP's stream flow indicator is based on the U.S. Geological Survey ("USGS") real-time gauging system¹. USGS gages to be monitored are as follows²:

On the Coosa River

- 02397000: Mayo's Bar – Coosa River
- 02397530 State Line, AL/GA – Coosa River
- 02398300: Gaylesville – Chattooga River
- 02399200: Blue Pond – Little River
- 02401390: Ashville - Big Canoe Creek
- 02401000: Crudup – Big Wills Creek
- 02404400: Jackson Shoals – Choccolocco Creek
- 02405500: Vincent - Kelly Creek
- 02407514: Westover – Yellowleaf Creek
- 02406500: Alpine – Talladega Creek
- 02408540: Rockford – Hatchet Creek

On the Tallapoosa River

- 02412000: Heflin – Tallapoosa River
- 02413300: Newell – Little Tallapoosa River
- 02415000: Hackneyville – Hillabee Creek
- 02418230: Loachapoka – Sougahatchee Creek
- 02418760: Chewacla – Chewacla Creek
- 02419000: Tuskegee – Uphapee Creek
- 02419890: Montgomery Water Works, Tallapoosa River

On the Cahaba, Alabama and Tensaw Rivers

- 02425000: Marion Junction – Cahaba River
- 02428400: Claiborne L&D – Alabama River
- 02471019: Mount Vernon – Tensaw River

Precipitation and stream flow indicators are outlined by month in Table 1. The top line shows the combined normal average precipitation at the ACT rainfall gages listed above. The second line shows ranges of flow percentiles that will be used to indicate when the ACT is

¹ Real-time data for each of these gages is available on the USGS's National Water Information System website at <http://waterdata.usgs.gov/al/nwis/rt>.

² Gages used as indicators may be added or removed in the future needs

entering a drought. The third line shows ranges of flow percentiles used to determine when the ACT is emerging from a drought.

Monitoring of Indicators

Updated information on indicators will be available on the ADROP website twenty-four hours a day, seven days a week. When indicators meet specified criteria (rainfall totals have fallen below the normal monthly average and stream flows are within the specified range), APC, in conjunction with OWR, will determine the need to initiate agency consultation and will begin to closely monitor the system.³ For example, if the average rainfall for the month of January is less than 5.3 inches and stream flow falls within the 10th to 25th percentile range, APC and OWR will begin to closely monitor the ACT basin. As conditions continue to decline, APC and OWR will begin hosting weekly conference calls to discuss trends in data to assess whether ADROP's drought intensity level triggers have been met and to determine the appropriateness of initiating the first drought intensity level response. APC and OWR will continue to monitor conditions in the basin throughout the duration of the drought as it either worsens or improves. APC and OWR will consult with relevant agencies before making changes between drought intensity levels. Normal operations will resume once observed conditions in the ACT basin meet or exceed specified criteria and APC and OWR have conferred with relevant agencies about indications that the system is emerging from the drought.

Explanation of Drought Intensity Level (DIL) Triggers

*DIL 1 Trigger: Low Basin Inflows **or** Low Composite Storage **or** Low State Line Flow*

The trigger for the DIL 1 response is one of the following criteria is met:

- Inflow into the basin is less than the total needed to meet the 7 day average flow target of 4,640 cubic feet per second ("cfs") and to fill APC's reservoirs (see Table 4)
- A basin-wide composite storage equal to or less than drought contingency elevation/volumes (see Figure 1)
- A flow at or below the 7Q10 flows for Rome, Georgia as measured at the Alabama/Georgia state line gage (see Table 5)

*DIL 2 Trigger: DIL 1 criteria + (Low Basin Inflows **or** Low Composite Storage **or** Low State Line Flow)*

The trigger for the DIL 2 response is two of the criteria in DIL1 are met.

DIL 3 Trigger: Low Basin Inflows + (Low Composite Storage + Low State Line Flow)

The trigger for DIL 3 is the combination of DIL 1 criteria and **both** of the following:

- A basin-wide composite storage equal to or less than drought contingency elevation/volumes (see Figure 1)

³ Resource Agencies to be included are US Fish and Wildlife Service, Alabama Department of Conservation and Natural Resources, Alabama Department of Environmental Management and US Army Corps of Engineers.

- A flow at or below the 7Q10 flows for Rome, Georgia as measured at the Alabama/Georgia state line gage (see Table 5)

Explanation of Drought Intensity Level (DIL) Responses

The following explains how flows will change throughout the year at the different drought intensity levels. Please note that these flows are minimum requirements and that not all reflect APC's current FERC license requirements. Several amendments to APC's FERC licenses will have to be made in order for APC to be able to respond to drought conditions like those experienced in 2007.⁴

Drought Intensity Level 1 Response

- **Coosa River Operations:** From July 1st through March 31st, 2,000 cfs will be released from Jordan Dam. From April 1st through June 15th, 4,000 cfs will be released from Jordan Dam as base flows. From June 15th to July 1st, releases from Jordan Dam will be ramped down to the 2,000 cfs minimum flow. Any inflow into the Coosa River basin in excess of these Jordan Dam minimum releases will be used to either refill upstream reservoirs or will be discharged through Jordan Dam or Bouldin Dam to meet the 7 day average flow target of 4,640 cubic feet per second ("cfs") (release).
- **Tallapoosa River Operations:** From May 1st through December 31st, half of all inflows into Yates Dam will be released from Thurlow Dam. From January 1st through April 30th, the greater of either half the inflows into Yates Dam or two times inflows as measured at the Heflin, Alabama gage will be released. During this time, Thurlow Dam releases will be greater than 350 cfs. Any inflow into the Tallapoosa River basin in excess of these Thurlow Dam minimum releases will be used to either refill upstream reservoirs or will be discharged through Thurlow Dam to meet the 7 day average flow target of 4,640 cubic feet per second ("cfs") (release).
- **Alabama River Flows:** A 10% reduction in APC's release into the Alabama River will be in effect from October 1st through April 30th. From May 1st through September 30th, the full targeted release will be maintained.
- **Rule Curve Variances:** APC will seek variances from the Corps and FERC as needed to improve the likelihood of filling APC's reservoirs to full summer pool elevations.

Drought Intensity Level 2 Response

- **Coosa River Operations:** From October 1st through March 31st, flows in a range between 1,600 and 2,000 cfs will be released from Jordan Dam. From April 1st through June 15th, 2,500 cfs will be released from Jordan Dam as base flows. From June 15th to July 1st, releases from Jordan Dam will be ramped down to the 2,000 cfs minimum flow. From July 1st to September 30th, flows will be 2000 cfs. Any inflow into the Coosa River basin in excess of these Jordan Dam minimum releases will be used

⁴ In all drought intensity levels, fish attraction pulses and recreational releases are suspended; however, flows above those needed to fill and meet the base minimum flow may be used for pulsing, recreational or flushing releases.

to refill upstream reservoirs and will be discharged through Jordan Dam or Bouldin Dam to meet the 7 day average flow target of 4,640 cubic feet per second (“cfs”) (release).

- **Tallapoosa River Operations:** Releases from Thurlow Dam will be 350 cfs from October 1st through April 30th. From May 1st through September 30th, half of the inflows into Yates Dam will be released. Any inflow into the Tallapoosa River basin in excess of these Thurlow Dam minimum releases will be used to either refill upstream reservoirs or will be discharged through Thurlow Dam to meet the 7 day average flow target of 4,640 cubic feet per second (“cfs”) (release).
- **Alabama River Flows:** A 20% reduction in APC’s targeted release into the Alabama River will be in effect from October 1st through May 31st. From June 1st through September 30th, a 10% reduction in the targeted release will be in effect.
- **Rule Curve Variances:** APC will seek variances from the Corps and FERC as needed to improve the likelihood of filling APC’s reservoirs to full summer pool elevations.

Drought Intensity Level 3 Response

- **Coosa River Operations:** From October 1st through November 30th, 1,800 cfs will be released from Jordan Dam. From December 1st through March 31st, 1,600 cfs will be released from Jordan Dam. From April 1st through June 30th, releases from Jordan Dam will be made in a range between 1,600 and 2,000 cfs. From July 1st through September 30th, 2,000 cfs will be released from Jordan Dam. Any inflow into the Coosa River basin in excess of these Jordan Dam minimum releases will be used to refill upstream reservoirs and will be discharged through Jordan Dam or Bouldin Dam to meet APC’s 7 day average flow target of 4,640 cubic feet per second (“cfs”) (release).
- **Tallapoosa River Operations:** From October 1st through June 30th, a flow of 400 cfs will be maintained at the Montgomery Water Treatment Plant. During this time, releases from Thurlow Dam may occasionally be less than 350 cfs. From July 1st through September 30th, 350 cfs will be released from Thurlow Dam. Any inflow into the Tallapoosa River basin in excess of these Thurlow Dam minimum releases will be used to either refill upstream reservoirs or will be discharged through Thurlow Dam to meet the 7 day average flow target of 4,640 cubic feet per second (“cfs”) (release).
- **Alabama River Flows:** From October 1st through April 30th, APC’s targeted release will be reduced to an average 2,000 cfs into the Alabama River. During May and June, a 20% reduction in the targeted release will be in effect. From July 1st through September 30th, a 10% reduction in the targeted release will be in effect.
- **Rule Curve Variances:** APC will seek variances from the Corps and FERC as needed to improve the likelihood of filling APC’s reservoirs to full summer pool elevations.

Table 1: Indicators

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Rain*	<5.3	<5.1	<6.1	<4.6	<4.0	<3.9	<4.7	<3.5	<3.6	<2.7	<4.3	<4.7
Flow**	10 th – 25 th	10 th – 25 th	10 th – 25 th	10 th – 25 th	10 th – 25 th	<10 th	<10 th	<10 th	<10 th	10 th – 25 th	10 th – 25 th	10 th – 25 th
	50 th – 75 th	50 th – 75 th	50 th – 75 th	50 th – 75 th	50 th – 75 th	25 th – 50 th	25 th – 50 th	25 th – 50 th	25 th – 50 th	50 th – 75 th	50 th – 75 th	50 th – 75 th

*Average normal rainfall of 4 meteorological stations within ACT Basin

**Lower range of percentiles indicates basin is moving into drought; Upper range of percentiles indicates basin is coming out of drought

Table 2: Drought Intensity Levels Triggers

DIL 1 Trigger	Low Basin Inflows or Low Composite Storage or Low State Line Flow
DIL 2 Trigger	DIL 1 criteria + (Low Basin Inflows or Low Composite Storage or Low State Line Flow)
DIL 3 Trigger	Low Basin Inflows + Low Composite Storage + Low State Line Flow

Table 3: Drought Intensity Level Response Matrix****

		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
		Normal Operations												
Drought Intensity Level Triggers		DIL 1: Low Basin Inflows or Low Composite Storage or Low State Line Flow												
		DIL 2: DIL 1 criteria + (Low Basin Inflows or Low Composite Storage or Low State Line Flow)												
		DIL 3: Low Basin Flows + Low Composite Storage + Low State Line Flow												
Coosa River Flow*		Normal Operation: 2000 cfs			4000 (8000)		4000 - 2000		Normal Operations: 2000 cfs					
		Jordan 2000 +/- cfs			4000 +/- cfs			6/15 Ramp	Jordan 2000 +/- cfs			Jordan 2000 +/- cfs		
		Jordan: 1600 - 2000 +/- cfs			2500 +/- cfs			6/15 Ramp	Jordan 2000 +/- cfs			Jordan 2000 - 1600 +/- cfs		
		Jordan 1600 +/- cfs			Jordan 1600 - 2000 +/- cfs			Jordan 2000 +/- cfs			Jordan 1800 +/- cfs		1600 +/- cfs	
Tallapoosa River Flow**		Normal Operations: 1200 cfs												
		Greater of: ½ Yates Inflow or 2 x Heflin Gage (Thurlow releases > 350 cfs)				½ Yates Inflow				½ Yates Inflow				
		Thurlow 350 cfs				½ Yates Inflow				Thurlow 350 cfs				
		Maintain 400 cfs at Montgomery WTP (Thurlow release < 350 cfs)						Thurlow 350 cfs			Maintain 400 cfs at Montgomery WTP (Thurlow release < 350 cfs)			
Alabama River Flow***		Normal Operations: 4640 cfs												
		4200 cfs (10% Cut) - Montgomery				4640 cfs - Montgomery				Reduce: 4640 cfs - 4200 cfs				
		3700 cfs (20% Cut) - Montgomery					4200 cfs (10% Cut) - Montgomery					Reduce: 4200 cfs -> 3700 cfs Montgomery		
		2000 cfs Montgomery			3700 cfs Montgomery			4200 cfs (10% Cut) Montgomery			Reduce 4200 cfs -> 2000 cfs Montgomery			
Rule Curve Elevations		Normal Operations: Elevations follow Rule Curve as prescribed in License (Measured in Feet)												
		USACE Variances: As Needed; FERC Variance for Martin												
		USACE Variances: As Needed; FERC Variance for Martin												
		USACE Variances: As Needed; FERC Variance for Martin												

*Jordan flows are based on a continuous +/- 5% of target flow **Thurlow flows are based on a continuous +/- 5% of target flow; Flows are reset on noon each Tuesday based on the prior day's daily average at Heflin or Yates ***Alabama River flows are 7-Day Average Flow ****Note these are base flows that will be exceeded when possible

Table 4: Low Basin Inflows Guide

Month	Coosa Filling Volume	Tallapoosa Filling Volume	Total Filling Volume	4640 cfs Release	*Total Basin Inflow Needed
January	628	0	628	4640	5268
February	626	1968	2594	4640	7234
March	603	2900	3503	4640	8143
April	1683	2585	4269	4640	8909
May	248	0	248	4640	4888
June	0	0	0	4640	4640
July	0	0	0	4640	4640
August	0	0	0	4640	4640
September	-612	-1304	-1916	4640	2724
October	-1371	-2132	-3503	4640	1137
November	-920	-2748	-3667	4640	973
December	-821	-1126	-1946	4640	2694

- Total Basin Inflow needed is sum of Total Filling Volume + 4640 cfs Release.
- All numbers are in cfs-days.
- Numbers are connected to reservoir rule curves; assumption that all are at top of rule curve elevation.
- When new rule curves are put into effect, numbers will need to be modified.

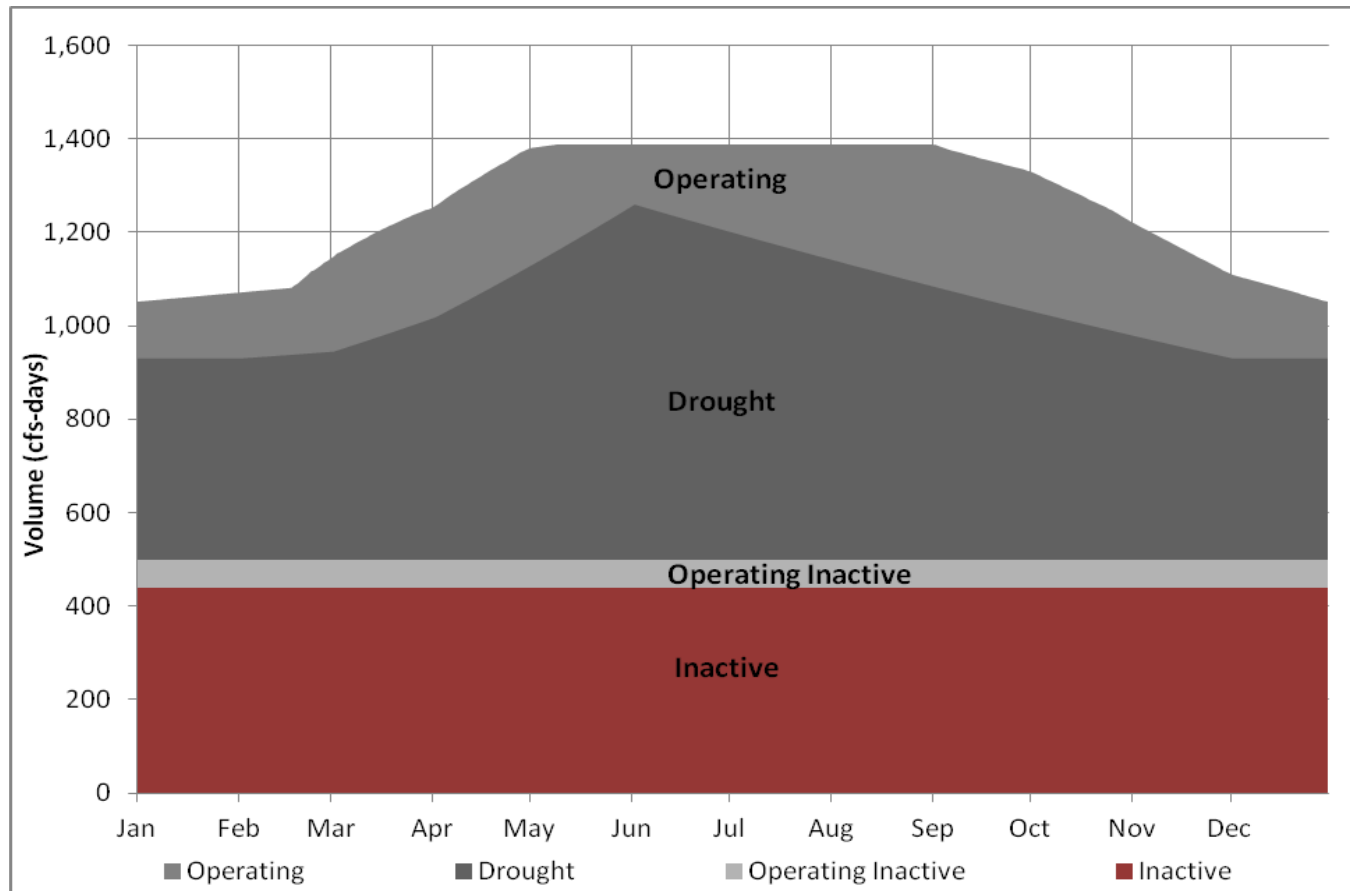
Table 5: Low State Line Flow

A Low State Line Flow occurs, when the Mayo's Bar gage measures a flow below the monthly historical 7Q10 flow. 7Q10 is defined as the lowest flow over a 7 day period that would occur once in 10 years.

Month	Mayo's Bar (cfs-days)
January	2544
February	2982
March	3258
April	2911
May	2497
June	2153
July	1693
August	1601
September	1406
October	1325
November	1608
December	2043

COE Computation 1949 - 2006

Figure 1: Low Composite Storage



Low Composite Storage occurs when APC composite storage is less than or equal to the storage available within the drought contingency curves for APC's reservoirs. Composite storage is the sum of the amounts of storage available at the current elevation for each reservoir down to the drought contingency curve at each APC plant.

Document Content(s)

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