

North Carolina Department of Environment and Natural Resources

Division of Water Quality

Coleen H. Sullins

Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

**Public Hearing for Alcoa 401 Water Quality
Certification for FERC Re-license
Hearing Officer Report
May 6, 2009**

AQUIFER PROTECTION SECTION

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May 6, 2009

MEMORANDUM

TO: Coleen Sullins

FROM: ~~Miller~~ Edwards and Jon Risgaard

*R. Edwards for
Jon Risgaard*

SUBJECT: Report and Recommendations: Alcoa 401 Water Quality Certification

INTRODUCTION:

The public hearing for the 401 water quality certification for the re-issuance of Federal Regulatory Energy Commission (FERC) was held January 15, 2009. The public hearing was held at the request of individuals and organizations which had expressed concerns over the issuance of the FERC re-licensing and the accompanying 401 water quality certification. This hearing was well attended by the public with approximately 170 in attendance and 41 individuals making oral comments. There were 293 written comments received prior to the written public comment period closing on February 16, 2009.

We attentively listened to all comments made on January 15, 2009 and reviewed all written comments submitted during the comment period. There were many oral and written comments made that are not applicable to the issuance of a 401 water quality certification. However, this report will summarize and address each group of those comments in the issues and findings section of this report.

HISTORY/BACKGROUND:

In 1915, the Aluminum Company of America purchased an unfinished aluminum smelting complex in central North Carolina from a failing French firm. Badin Lake was constructed in 1917 by the Aluminum Company of America (ALCOA) on the Yadkin River in Stanly, Montgomery and Davidson Counties of North Carolina. The impoundment was first referred to as the Narrows Reservoir, locally known as Badin Lake. This Piedmont reservoir has a surface area of 5,350 acres, a shoreline length of 115 miles, and a maximum depth of 190 feet. Full pool is at elevation 541 feet.

Production at Badin Works increased steadily as demand for aluminum grew. To meet the growing power needs of the operation, the company added a second dam on the Yadkin River in 1919 at a natural drop in the river known as The Falls. The Falls dam and 204-acre impoundment were followed by construction of the High Rock hydroelectric station in 1927. The High Rock reservoir at 15,000-acre, was the largest on the Yadkin at the time, and is the most upstream of all the hydroelectric complexes on the Yadkin - Pee Dee River system.

The last of ALCOA's four hydroelectric stations, built to serve the Badin Works plant, was constructed in 1962. It is known as the Tuckertown Development. The 2,500-acre reservoir feeds what is called a "run of the river" hydroelectric complex, a low dam with little room for water storage capacity in the reservoir.

The hydroelectric generation system for the Badin plant was operated independently of ALCOA's other hydroelectric projects until recently when the Yadkin River system was incorporated under ALCOA Power Generating Inc. (APGI). ALOCA Power Generating manages generation and transmission of power in three divisions: Tapoco, in North Carolina and Tennessee; Long Sault, in Upstate New York; and Yadkin, in Badin, North Carolina.

Relicensing Settlement Agreement (RSA) and the 401 Certification Process:

As part of the process for developing a revised FERC license, APGI initiated a formal negotiation process that involved a wide variety of stakeholders. After an eighteen month process ending in February 2007, 22 organizations in North Carolina and South Carolina signed a Relicensing Settlement Agreement. The Relicensing Settlement Agreement proposed resolution of a number of issues related to operation of the hydropower project, including recreational access, drought management and water quality. The State, however, does not rely on the Relicensing Settlement Agreement to address water quality impacts of the hydropower operation. APGI must obtain a certification from the State, under Section 401 of the Clean Water Act, that operation of the hydroelectric generating system will be consistent with state water quality standards. Through the 401 Certification the State identifies conditions on operation of the hydropower project necessary to ensure protection of water quality. Any conditions on the 401 Certification must be incorporated in the FERC license and become legally enforceable independent of the Settlement Agreement.

CONCLUSIONS:

We have reviewed comments made at the public hearing held in Albemarle, Stanly County on January 15, 2009. Written comments were compiled at the end of the public comment period (February 16, 2009) and addressed in the issues and findings portion of this hearing officer report. We also have reviewed numerous reports submitted in support of and opposed to actions to be taken in relation to issuance of the 401 Water Quality Certification (see attachments).

The purpose of the 401 Certification review is to evaluate the effects of the hydroelectric project on water quality. The scope of the review went beyond water quality testing of discharges from the dams and included evaluation of the potential movement of sediments and contaminants as a result of operation of the hydroelectric power dams, low flow conditions and other potential impacts on aquatic life

The 401 Water Quality Certification is not intended to address contaminants that may have entered the river system from upstream of High Rock, Tuckertown, Badin, and Falls Lakes. The Certification also does not address possible land based contamination from years of industrial facility operations at Alcoa - Badin Aluminum Works, except as it may be affected/transported by the operation of the project. DENR's Division of Waste Management has identified several contaminated sites on and around the Badin Aluminum Works associated with the company's past activities. Some of these sites involve significant contamination that will require remediation. The Division of Waste Management is working with Alcoa on assessment and remediation of contamination at the Badin Works site as well as an area of contaminated sediment in the waters below Narrows dam. That site has PCB contamination as a result of the disposal of capacitors in the river. The 401 Certification review considered information related to all known contamination associated with past Alcoa operations for purposes of determining whether operation of the hydropower project would affect the distribution of those contaminants. We did not find a relationship between operation of the hydropower project and movement of contaminants either within Badin Lake or through the discharge at Narrows dam.

Numerous studies and reports have been compiled by reputable companies and analyzed by certified laboratories during the FERC relicensing process. Experts and Division of Water Quality staff have reviewed these reports/results. A detailed discussion of these reports and data analyses follows in the section of this report entitled "Specific Issues and Findings". Based on the recent data collected by the Division of Water Quality from the dam discharges and sediment in Badin Lake as well as thorough review of all the submitted data and reports, we believe that the 401 Certification can and should be issued for this project subject to conditions on operation of the hydropower project to ensure that water quality standards will be protected.

This draft 401 Water Quality Certification is for the protection of surface water quality in the Yadkin River system in North Carolina. The following conditions are considered necessary to achieve this goal:

- 1) Allow for sediment removal at City of Salisbury raw water intake facilities to ensure continued functioning of the intake and use of the waters as related to the designated use for water supply.
- 2) Monitoring of the discharge from the four power generating stations to ensure compliance with water quality standards.
- 3) Monitoring of sediment in the Badin Lake swim/picnic area and Badin Lake boat access area for heavy metals, PCB's and PAH's to ensure that the project operation does not result in the downstream transport of contamination.
- 4) The operation of the power generating stations must have a plan to monitor and regulate reservoir levels and flows. The plan must include low flow protocols for the lakes in the APGI Yadkin River system project in case of drought.
- 5) The plan to increase dissolved oxygen levels in order to meet water quality standards shall be done in accordance with the settlement agreement schedule.

- 6) A continuing compliance provision (reopener clause) to ensure that the Division of Water Quality can modify the 401 Certification if water quality-related problems develop in the future that can be remedied in the 401 Certification.
- 7) Portions of the Relicensing Settlement Agreement that are relevant to water quality will be included in the 401 Certification along with additional site-specific conditions.

Therefore, we recommend that the 401 Water Quality Certification for the APGI project be issued with the above conditions and others as deemed appropriate by Division of Water Quality 401 unit staff. We conclude that this Certification will protect water quality standards from the discharges of these lakes.

SPECIFIC ISSUES AND FINDINGS:

1. Form letters

a. First form letter – The Division received 100 copies of this form letter. The main issues raised by the letter and our responses are listed below.

i. Cleanup of the Alcoa site is needed before the 401 Certification can be issued.

Response – Oversight of the cleanup of the Alcoa site is being conducted by staff of the Division of Waste Management (DWM). DWM staff recently completed a review of Alcoa's work plan for corrective measures and will be requiring Alcoa to conduct additional monitoring and cleanup activities on the site. Cleanup of the Alcoa site (although important and underway) is not a matter for the 401 Certification to address since it is not related to operation of the hydropower project. Further discussion of the dam operating conditions and the possible transport of contaminated sediments can be found in Section (ii) below.

If cleanup of any of the contaminated sites as ordered by the Division of Waste Management requires a 404 Permit and 401 Certification, then the Division of Water Quality will be involved in review of the activity. For instance, the DWQ recently received an application for cleanup and removal of lead and PCB-contaminated soil in a side channel of the Yadkin River below the Badin Lake dam at the Powerhouse. DWQ staff carefully reviewed that application and placed it on hold on May 6, 2009 for additional information primarily with respect to erosion and sediment control issues. Once that information is received, DWQ staff believe that it can be issued.

ii. Studies of water, fish and sediment need to be completed before the 401 can be issued.

Response – Studies done by APGI on water released from the dam and contaminants in sediment have been completed and reviewed by DWQ staff. The Department of Health and Human Services conducted an independent fish tissue study in Badin Lake and provided the results to DWQ and to the Division of Waste Management for analysis. In addition to the water quality samples provided by APGI, DWQ conducted separate analyses of water samples on the discharges from all four of the lakes in the APGI system on March 10, 11, and 31, 2009. The Division also conducted sediment sampling along transects from the cove near the Town of Badin to the Badin Lake dam on April 2, 2009.

The water samples showed that contaminants were not present in the discharges from these dams. The sediment samples confirm that the polynuclear aromatic hydrocarbon (PAH) contaminants are limited to locations near the Cove where a swimming area and boat launch are located and to date have not moved toward the dam. These data are attached to this report as an Appendix.

Evidence gathered through sampling of the water column and sediment shows that operation of the dams is not causing contaminated sediments to migrate downstream. In other contaminated sediment sites within the State that were located in stream channels, significant migration of the sediments occurred as a result of high stream velocities during storm events and other high flow times. In these cases, water velocities were sufficient to carry the contaminated sediment downstream. Water velocities in the cove adjacent to the Alcoa Badin Works site under the proposed operating conditions have not been sufficient to cause migration of the contaminated sediments from the cove. For instance, an analysis of the watershed of the cove as compared to the watershed of Badin Lake shows that the local watershed of the cove is about 0.003% of the lake's total watershed and, further, that no major streams flow into the cove. In addition, examination of the bathymetry of this arm of the lake based on surveys before the lake was constructed shows that the bottom of this arm of the lake is relatively flat. Therefore, it is unlikely that sediment would flow or be transported from the cove into the main arm of the lake.

The draft 401 Certification contains conditions to require continued monitoring of the discharges and sediment. If future sampling shows a problem relating to water quality from the discharge, the continuing compliance clause can be invoked to address the issue.

- b. Second Form letter – The Division received 131 copies of this form letter . The main issues raised by the letter and our responses are listed below.
- i. Cleanup of the Alcoa site is needed before the 401 can be issued.
Response – See response in 1, a (i) above.
 - ii. Studies of water, fish and sediment need to be completed before the 401 can be issued.
Response – see above response in 1, a (ii) above.
 - iii. PCB contamination in fish is of concern and must be handled in 401 Certification.
Response – DWQ staff agree that PCB contamination in fish is a concern in Badin Lake. However, in order to make a determination of the relationship of the contamination to operation of the hydropower project, two issues require further analysis: 1) whether the contamination is related to the Alcoa site or whether it is a watershed phenomenon, and 2).if the PCBs are related to the Alcoa site, whether this is an issue for the 401 Certification to handle. With respect to the first question, staff of the Division of Waste Management have reviewed the fish tissue data and information on PCB content of materials used by Alcoa and concluded that it is not possible to establish a link between Alcoa operations and the PCBs in fish tissue (memo from Rob McDaniel to Dexter Matthews, Director of the Division of Waste Management dated February 25, 2009). Although PCB types used at the Alcoa plant were found in the fish tissue samples, the samples also indicated the presence of many PCB types not found in materials used at Alcoa. Therefore, it appears that the presence of PCBs in the fish tissue is a watershed-based issue. Based on the water quality sampling results, sediment studies and the PCB data, the operation of the dams and hydroelectric stations are not expected to impact PCB contamination in fish tissue As a result, we did not find

any basis for addressing the issue through the 401 Certification. The Division will work with our counterparts in Department of Health and Human Services and U.S. EPA to identify the sources of PCBs in the fish tissue on a broader basis under the auspices of the basinwide planning effort.

In addition to the abovementioned PCB issue, there is a PCB and lead contamination site below the Badin Lake dam that is being addressed by Alcoa and the Division of Waste Management. The DWQ and the Corps of Engineers have received a 404/401 application for a Nationwide Permit to do the cleanup of that site. DWQ staff carefully reviewed that application and placed it on hold on May 6, 2009 for additional information primarily with respect to erosion and sediment control issues. Once that information is received, DWQ staff believe that it can be issued.

c. From Senator Burr's office. These comments were received by Senator Burr in Washington, DC and forwarded to DWQ staff for our review and consideration. The Division received 16 form letters from Senator Burr's office.

i. Public control of the waterway is needed rather than control by a private company.

Response – This issue is currently being discussed by Governor Perdue, the US Congress, FERC, the NC Legislature and other concerned parties. Although this is a legitimate public policy issue, it does not affect the 401 Certification which addresses the hydropower project's water quality impacts. Conditions on the Certification would apply to whoever owns and operates the dams. If a public agency takes over ownership and operation of the dams, all conditions to improve and protect water quality (such as dissolved oxygen improvements below the dam) would be the responsibility of the agency.

ii. Concerns about fluctuating water levels in Badin Lake.

Response – The Settlement Agreement proposes to allow somewhat more fluctuation in Badin Lake levels in an effort to avoid the extreme fluctuations experienced in High Rock Lake during the drought of 2006. The settlement agreement sought to reach a balance to protect lake levels for both lakes. Based on historical operations, fish community responses and water quality in the lake, the relatively small lake level fluctuations allowed under the Settlement Agreement should not have any water quality impact. Certainly keeping water level fluctuations relatively small on both lakes (High Rock and Badin) has less of a water quality impact than the much greater fluctuations seen on High Rock in 2006 where massive fish kills were only narrowly averted. Finally, there is no evidence that the proposed operating levels will result in water quality standard violations but if this situation changes, the continuing compliance clause of the Certification can address the issue.

2. Other citizen comments (non-form letters) in opposition to Certification.

a. The Division received 30 letters generally expressing the following concerns.

i. Cleanup of the Alcoa site is needed before the 401 can be issued.

Response – see response in 1, a (i) above.

- ii. Dissolved oxygen issues are of concern especially with respect to the schedule for improvement. No Certification should be issued until we can be certain that DO will be improved.

Response – The draft 401 Certification lays out a precise schedule for dissolved oxygen improvements in discharges from the dams. The schedule reflects the practicality of making improvements in a sequential manner. In addition, recent data submitted by APGI shows that dissolved oxygen levels below the Narrows dam have improved dramatically since two of the four turbines have been upgraded. This is strong evidence that dissolved oxygen issues can be successfully addressed by the planned schedule. Finally, the draft Certification was written to make certain that if dissolved oxygen improvements are not realized, then the Certification will be reopened using the continuing compliance clause to address the dissolved oxygen standard.

- iii. Hazardous waste cleanup is needed at and near the Alcoa site and the Certification should not be issued until that is done.

Response – see response in 1, a (i) above.

- iv. The public should retain control of the Yadkin project from APGI which is a private company.

Response – see response in 1, c (i) above.

- b. Other citizen comments - The Division received 6 form letters expressing the following concerns.

- i. Concerns about fluctuating water levels in Badin Lake.

Response - see response in 1, c (ii) above.

- ii. Public control of the waterway is needed rather than control by a private company.

Response - see response in 1, c (i) above.

- 3. Other citizen comments in support of Certification.

- a. The Division received two letters in support of the Certification.

- i. The review process for this Certification has been lengthy and comprehensive and the Certification should be issued so the agreed-upon water quality improvements can be made.

Response – The draft Certification contains extensive provisions to protect water quality. DWQ staff believes that the draft Certification can be issued after our extensive review of a myriad of water quality issues as outlined in the Hearing Officer report.

- 4. Other comments

- a. Yadkin Riverkeeper (Duke Law) – letter dated February 16, 2009.

- i. Issuance of the Certification would be in violation of the NC Constitution and state law unless the Division protects the public trust.

Response – See response to 1.c.(i) above. Additionally, the Division conducted a Public Hearing on the project to solicit public input and placed the project on hold for additional information based on review of comments from the Hearing. Under the Clean Water Act, the scope of the 401 Certification is limited to the impact of the hydropower project on water quality. To the extent the comment addresses water

quality impacts and impacts on aquatic resources as public trust issues, the concerns have been addressed through conditions proposed for inclusion in the 401 Certification. Public trust issues that have to do with potentially competing uses of the waters of the Yadkin River are beyond the scope of the 401 Certification. The 401 Certification does not grant the applicant any exclusive right of use. Decisions about the best use of public trust waters among competing uses and decisions about ownership and control of public trust lands are properly within the authority of the Governor and the legislature.

- ii. Applicant must show that the whole project will meet water quality standards and protect existing uses and complies with the Public Trust Doctrine.

Response - The 401 Certification process requires the Division to review the proposed activity (FERC relicensing of the hydropower project) to assure that the activity will protect and not degrade water quality. In its review, the DWQ has looked at water quality within the lakes; the discharges at the dams; fluctuations in lake levels and flow as a result of system operation; potential influence of the hydropower operation on movement of contamination through the system; and other possible water quality impacts associated with the hydropower project as a whole. Through this process, the DWQ took steps to protect the public interest in the Yadkin River and assure that water quality standards will be protected. Recent data shows that dissolved oxygen levels below the Narrows dam have improved dramatically since two of the four turbines have been upgraded. This is strong evidence that dissolved oxygen issues can be successfully addressed by the planned schedule for upgrade of the remaining turbines. With respect to other water quality standards, the low flow protocol has been established to protect aquatic life and water quality standards in all of the lakes during drought conditions. Sedimentation issues related to the water supply use for the City of Salisbury will also be addressed in the Certification. To ensure ongoing protection of water quality, the draft Certification requires monitoring of both the discharges from the dam and sediment in the cove near the Badin Works site to assure that no migration of the sediment contamination is occurring. A continuing compliance provision has been included in the draft Certification to allow modification of the Certification if water quality problems attributable to the project develop.

As noted above, the 401 Certification addresses the impact of the hydropower project on water quality. The Certification does not address public trust issues that have to do with potentially competing public trust uses of the Yadkin River.

- iii. The scope of the Certification must be broadly applied to both the activity and the applicant. The Division must not decline to exercise its full jurisdictional capacity with the Certification.

Response – As noted above, the DWQ has looked broadly at the water quality impacts of the hydropower project. Some activities that the applicant conducts have a direct effect on the nature of the discharges at the dams and compliance with water quality standards at and downstream of the discharge point. One example is the discharge of water containing low levels of dissolved oxygen from the turbines. DWQ also addressed less direct water quality impacts of hydropower operation, such as the effect of low flows and lake level fluctuations on aquatic life. Widespread, watershed-related

issues are beyond the responsibility of the applicant and not appropriate issues for the 401 Certification except to the extent that the hydropower operation contributes to or aggravates those problems. For instance, eutrophication is caused by nutrients that enter the Yadkin River and its numerous tributaries throughout the entire watershed from both point and non-point sources. APCI does not have any control over those discharges and changes in hydropower operation cannot solve the problem. On the other hand, DWQ and other state agencies have various programs in effect that can limit nutrient inputs to the state's waters including these lakes. Staff believes that it is more appropriate for those programs to address widespread, watershed-related issues rather than the 401 Certification Program. In addition, DWQ's 401 Certification rules refer to "discharge to classified surface waters" (15A NCAC 2H .0506 (b)) and the "proposed activity" (15A NCAC 2H .0506(a)). Therefore, staff believes that the Environmental Management Commission has adopted rules intending staff review to be limited to the discharge and the proposed activity rather than any broader, watershed-level review.

iv. The Division must look at the cumulative effect of all its permit decisions.

Response – The 401 Certification rules discuss cumulative impact in relation to downstream water quality standards (15A NCAC 2H .0506(b)(4)). DWQ staff has taken downstream water quality standards directly into account during the review of this application. For instance, we have required the applicant to address downstream dissolved oxygen standards in order to ensure that the uses of the downstream waters are met.

v. The project does not meet downstream water quality standards and must be regulated accordingly.

Response – The purpose of the 401 Certification is to ensure that standards including downstream water standards will be met by a project. For instance, dissolved oxygen standards are not being routinely met below some of these dams. As noted above, dissolved oxygen levels have already improved below Narrows dam due to turbine improvements. The Certification will ensure that downstream water quality standards are met and require compliance with these standards. The reopener clause ("continuing compliance") will also provide additional assurance that water quality standards will be met in the future. In addition, Section 401 of the Clean Water Act states that the States must certify whether the discharge "will comply" with water quality standards. The Division believes that the intent of this law is to give the States discretion to ensure compliance with standards based on conditions and enforceable schedules.

vi. The Project's reservoirs do not meet water quality standards and must be regulated accordingly.

Response – see above response under item 4, a (ii) and (iii).

vii. FERC's Final Environmental Impact Statement (FEIS) is inadequate and should not be relied upon.

Response – DWQ and other state agencies have used the draft FEIS as background information in reviewing the information relevant to issuance of the Certification. However, we have not relied on that FEIS exclusively as evidenced by the Public Hearing that we have conducted, additional water quality data that we have gathered,

additional information requests of the applicant, and the final conditions of the draft Certification.

viii. As currently presented, the Division should deny the Certification.

Response – See the Conclusions portion of this report.

b. City of Rockingham – letter dated February 16, 2009.

i. City supports conditions relating to sedimentation and fill in wetlands but believes that the Certification must include additional measures to address the potential for release and transport of sediment with toxic materials including PCBs. Specifically, the Division should include robust sampling, monitoring and reporting requirements for sediments including provision for remedial actions.

Response - The draft Certification requires conditions for annual monitoring of toxic substances including PCBs from the discharge from these dams.

ii. Containment and cleanup of contaminated sediments must be included in the Certification.

Response – As described above, the Certification is for operation of the hydropower project. The Division believes that is not appropriate for the Division to require cleanup of the contaminated sediments through the 401 Certification Program unless there is a link between operation of the hydropower project and movement of contaminated sediment or pollutants associated with the sediment. Based on the data that APGI and DWQ have collected, there does not appear to be a relationship between the contaminated sediment and the dam discharge at this time. The Department of Health and Human Services staff and the State Epidemiologist previously concluded that contaminated sediment in the swimming area does not pose a human health risk. The draft Certification will require a condition for continued monitoring of these sediments and will include a provision for cleanup through the continuing compliance condition of the draft Certification if the sediment becomes related to the discharge.

iii. The City supports the continuing compliance condition especially since the permit life will likely be for 50 years.

Response – DWQ staff agrees and will include this condition in the draft Certification.

iv. The City supports the proposed in-stream flow requirements from these dams. Flow requirements need to be coordinated with those from the lower Progress Energy projects.

Response - DWQ staff agrees and will include this condition in the draft Certification.

v. The City is concerned about the eight year plan for dissolved oxygen improvement and recommends that the Certification require compliance within five years instead.

Response – See response 2 (a) (ii) above.

c. City of Salisbury – letter dated February 16, 2009.

i. The City believes that the condition (number 5) of the previously issued Certification that dealt with sedimentation did not adequately address degradation of the City's water intake rather than the complete loss of the intake due to sedimentation. The City suggests that Environmental Measure 17 in Table 54 of the Final EIS be cited in the Certification to address this issue. This provision requires development of a sedimentation and flood protection plan for the City of Salisbury's water intake.

Response - The Division believes that the proposed condition of the draft Certification adequately protects against degradation of the water supply intake. If the Federal Energy Regulatory Commission includes additional requirements in the FERC license, the Division has no objection to those requirements.

d. Stanly County - letter dated February 16, 2009.

- i. DWQ has not adequately investigated dissolved oxygen (or other matters) in the lake and its compliance schedule violates federal and state law.

Response – see response in 2 (a) (ii) above.

- ii. DWQ's apparent plan to evaluate contaminated sediments only after issuance of the Section 401 Certification cannot ensure compliance with water quality standards and therefore violates the Clean Water Act.

Response - The Division has conducted additional sediment evaluations and based on the data believe that the draft Certification can be issued.

- iii. DWQ should delay issuance of a Section 401 Certification until it has an opportunity to evaluate important and new information concerning impacts to fish in Badin Lake.

Response – DWQ has carefully reviewed the recent fish tissue study done by DHHS as well as a follow-up examination of these data by the Hazardous Waste Section of the DWM which concluded that these PCBs could not be “fingerprinted” back to the Alcoa site (memo from Rob McDaniel to Dexter Matthews, Director of the Division of Waste Management dated February 25, 2009). Although the Alcoa Badin Works has been a source of PCB contamination, the PCBs found in the fish in Badin Lake cannot be directly related to the Alcoa site and are not related to the operation of the hydropower project that we are certifying. DWQ will continue to monitor the situation with respect to PCBs in fish tissue in these lakes under the auspices of the Division's basinwide planning program and will work with our sister state and federal agencies to determine causes of the elevated PCBs in fish tissue in order to address this problem.

- iv. APGI's recent sampling of discharged waters does not confirm the absence of pollutants in the dam's discharge and does not scratch the surface of information needed to evaluate water quality.

Response – DWQ investigated the sampling protocols used by APGI including the quality assurance/quality control practices. The laboratory performing these analyses must be state-certified and undergoes an annual audit by the DWQ's Lab Certification Program to assure that proper procedures and methodologies are being implemented. The sample that APGI took from the Badin Lake discharge in August 2008 was done using proper sampling protocols approved by DWQ and sent to a state-certified lab. Therefore, DWQ believes that these data are legitimate and show the absence of pollutants from the discharge at that sampling date. However, to address public concerns about the integrity of the water quality data, DWQ conducted additional sampling from each of the four dam discharges in March 2009. These samples were analyzed at the DWQ lab and handled using proper procedures. The results indicated that none of the discharges contain levels of contaminants that violate water quality standards. The Certification will include a condition to continue this annual monitoring to ensure that this situation does not change. If toxic substances are found that exceed

water quality standards, the DWQ intends to invoke the continuing compliance condition of the draft Certification to have the issue resolved.

- v. Serious water quality issues in the lake are raised by DWQ's own investigations, reports generated in the Relicensing Settlement Agreement process and in the reports referenced by Stanly County, yet none of them were considered by DWQ.

Response – Water quality issues were thoroughly discussed during the settlement process. In addition, DWQ conducted a Public Hearing to gather additional water quality information, placed Alcoa's project on hold for additional analysis based on those comments, and then conducted our own water and sediment sampling to confirm these findings. Finally, all submitted information was carefully reviewed and considered before preparing this report and the draft Certification.

- vi. DWQ has voluntarily and inappropriately limited its own Section 401 jurisdiction to the point where it cannot adequately protect water quality as mandated by the Clean Water Act.

Response – see response in 4, a (iii) above.

- vii. Stanly County submits a number of reports for DWQ staff review as listed on pages 18, 19 and 20 of their submittal.

Response - DWQ staff have read the submitted reports and incorporated relevant water quality related issues into the draft Certification as discussed in the "Conclusions" part of this report.

e. Davidson County – letter dated January 26, 2009.

- i. Importance of High Rock and Tuckertown Lakes to local tourism. The proposed Settlement Agreement enhances that value to Davidson County.

Response – Staff has noted this comment.

- ii. High Rock Lake water levels need stability. The settlement agreement enhances that value to the County but the County suggests that the agreed-upon 10 foot drawdown is excessive.

Response – Staff has noted this comment but also note that the 10 foot drawdown (which would be a maximum only under severe droughts) is an improvement over the present license. Also any reduction in that drawdown would result in additional drawdown on Badin Lake which would be problematic. Finally, the water quality benefits of a drawdown less than 10 feet are hard to quantify. Therefore, the Staff does not believe that any change in this provision of the Certification is warranted.

- iii. A 50 year license is too long. A 25 to 30 year license would be more reasonable.

Response – The State does not establish the FERC timeframe. Rather, that timeframe is set by the Federal Energy Regulatory Commission. In any event, the Division will include a reopener (continuing compliance) clause in the Certification to handle unanticipated or slowly developing water quality problems with the project. Staff has added a condition to the Certification to require a written report from APGI after the completion of the dissolved oxygen improvements so we can then judge whether the continuing compliance clause needs to be invoked for additional dissolved oxygen improvement measures. Finally the continuing compliance condition will ensure the State's ability to reopen the Certification if future conditions warrant.

f. NC Zoological Park – letter dated February 2, 2009.

- i. The Zoo is heavily involved in natural resource and rural development issues in the area surrounding the APGI projects such as the “Central Park NC” project. DWQ is urged to review all information carefully to be sure that water quality is protected especially the Brief of Stanly County before the NC Environmental Review Commission regarding SB 1046.

Response – Staff has reviewed all of the information submitted for the Public Hearing including the report mentioned above and believes that the Certification can be issued with appropriate conditions to ensure that water quality standards are protected.

g. Division of Water Resources – letter dated February 4, 2009.

- i. The Division resubmits our comments for previous 401 Certification especially with respect to including appropriate parts of the settlement agreement into Certification.

Response – DWQ staff has reviewed the submittal and concur that the conditions need to be included in a new Certification.

h. APGI - letter dated February 16, 2009.

- i. APGI requests that the entire record from the previous 401 Certification (issued on November 16, 2007) be included in the review of this current application.

Response – DWQ staff reviewed both files in the context of this Certification.

- ii. APGI has sampled the discharge from Badin Lake and has submitted those data to DWQ for this Certification.

Response – DWQ staff have reviewed those data and made certain that the laboratories that did the analyses were certified by the state. In addition to these data, in mid-late March 2009 the Division of Water Quality conducted water sampling from the tailraces of all four dams in order to compare to the APGI data. When compared to the APGI data, these new data show similar results and show no violations of water quality standards for toxic substances. The Division intends to include a condition in the draft Certification for continued monitoring to ensure that this situation is unchanged.

- iii. APGI has sampled the sediment from Badin Lake and has submitted those data to DWQ for this Certification.

Response – DWQ staff have reviewed those data and made certain that the laboratories that did the analyses were certified by the state. In addition to these data, on April 2, 2009, the Division of Water Quality conducted sediment sampling along transects from the cove near the Town of Badin to the dam in order to compare to the APGI data. When compared to the APGI data, these new data show the same pattern of contaminants or lack thereof. Furthermore, an analysis of the watershed of the cove as compared to the watershed of Badin Lake shows that the local watershed of the cove is about 0.003% of the lake and that there are no major streams that flow into the cove. Finally, examination of the bathymetry of this arm of the lake based on surveys before the lake was constructed shows that the bottom of this arm of the lake is relatively flat and therefore is it unlikely that sediment would flow or be transported from the cove into the main arm of the lake. Therefore, the Division believes that the data show that contaminants from the cove are restricted to the cove area and to date, have not moved

toward the dam. The draft Certification contains a condition for this monitoring to continue to ensure that the contaminants are not found in the discharge from the dam.

- iv. APGI has submitted a report prepared by Anchor QEA, LLC which reviews and analyzes the sediment and fish tissue data.

Response - DWQ staff have reviewed this report and incorporated its conclusions into the draft Certification as appropriate.

- v. The majority of comments at the Public Hearing and in the record relate to waste sites at the Badin Works plant which bears no relationship to the relicensing of the hydropower plants. Similarly, the fish tissue data have no relationship to the relicensing of the hydropower plants.

Response - The Division has reviewed all information included in the record associated with the application, hearing process and materials provided. Based on this review, DWQ staff believe that the draft Certification protects water quality standards from the discharge of these lakes and in concert with the reopener clause, provides adequate assurance that water quality standards will be protected in the future.

- vi. Issuance of the Certification will allow FERC to issue the license and then the provisions of the Relicensing Settlement Agreement which was signed by 22 parties in addition to APGI can be implemented.

Response - Comment noted.