SOUTHERN ENVIRONMENTAL LAW CENTER

200 WEST FRANKLIN STREET, SUITE 330
CHAPEL HILL, NC 27516-2559

Telephone 919-967-1450
Facsimile 919-929-9421
selcnc@selcnc.org

Charlottesville, VA
Chapel Hill, NC
Atlanta, GA
Asheville, NC
Sewanee, TN

December 12, 2008

VIA U.S. MAIL AND ELECTRONIC MAIL (keith.overcash@ncmail.net)

Mr. B. Keith Overcash, Director
Division of Air Quality
N.C. Department of Environment and Natural Resources
Parker-Lincoln Building
1641 Mail Service Center
Raleigh, NC 27699-1641

Re: Duke Energy Carolinas, LLC Cliffside Steam Station, Unit 6
Facility ID: 8100028, Cliffside, Rutherford County
Air Quality Permit No. 04044T28

Dear Mr. Overcash:

We write to follow up on two recent developments: (1) the December 2, 2008 Memorandum and Order ("Order") and accompanying Judgment of United States District Judge Lacy H. Thornburg of the Western District of North Carolina, copies of which the Court served on you as the Director of the Division of Air Quality ("DAQ"); and (2) a December 4, 2008 letter to you from James L. Turner, Duke Energy Corporation. Specifically, we address three points. First, we refute Duke Energy's claim that Cliffside Unit 6 is not, or with the permit modifications it has proposed will not be, a major source of hazardous air pollutants ("HAPs") subject to the requirements of section 112 of the Clean Air Act (or "Act") and corresponding state law. Second, we convey our understanding that the District Court's Order and Judgment require the completion of a case-by-case maximum achievable control technology ("MACT") Determination for Unit 6, even if DAQ also chooses to consider Duke's claim that it is not, or will not be, a major source of HAPs. Third, because Judge Thornburg's decision renders Duke's existing construction permit invalid, we ask DAQ to order Duke to halt construction of Unit 6 until it obtains a valid permit.

We would also like to schedule as soon as possible a meeting between us, our technical expert, Dr. Ranajit Sahu, and DAQ staff and its attorneys to discuss Duke's request that DAQ determine that Cliffside Unit 6 is not, or with permit modifications will not be, a major source of HAPs, as well as Duke's MACT submissions.

100% recycled paper

UNIT 6 IS A MAJOR SOURCE OF HAZARDOUS AIR POLLUTANTS

In its December 2 ruling, the District Court held that section 112(g) of the Clean Air Act, 42 U.S.C. § 7412(g), applies to Cliffside Unit 6. Section 112(g) of the Act only applies to "major sources" of HAPs. Duke, in its December 4 letter, renews its claim that Unit 6 currently is a "minor," not a major, source of HAPs and therefore is not subject to regulation under section 112 of the Act. Duke also claims that, with the permit modifications that it requested on October 23 but has not yet received, Unit 6 would qualify as a minor source of HAPs. Duke's claims are incorrect as a matter of law and rest on flawed factual premises. We address Duke's claims in turn.

Unit 6 Currently Is a Major Source of HAPs

The District Court's Order and Judgment make clear that Duke currently is a major source of HAPs. Specifically, the Court's Order states: "Section 63.41 of the [federal HAP] regulations defines 'construct a major source' in great detail and leaves no doubt that the Cliffside Unit 6 is included." Order, at 7 (citing 40 C.F.R. § 63.41). In its Judgment, the Court reiterated that "Cliffside Unit 6 qualifies as a potential 'major source' of HAPs, subject to regulation under § 112" and ordered Duke to initiate section 112(g)'s case-by-case MACT Determination within ten days and to complete the process within sixty days. Judgment ¶¶ 3, 5.

Even if the District Court had not already determined that Cliffside Unit 6 currently is a major source of HAPs, an examination of the relevant statutes and regulations would make clear that it is. The Clean Air Act and North Carolina regulations define a major source of HAPs as any stationary source that has "the potential to emit considering controls . . . 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants." 42 U.S.C. § 7412(a)(1); see 15A N.C. Admin. Code 02D.1112(c)(4) (defining "Construct a major source"); 40 C.F.R. § 63.41 (same). The concept of "potential to emit" HAPs, as defined by EPA and North Carolina and as interpreted by the courts, is fundamental to determining Unit 6's major source status and refutes Duke's claims that Unit 6 is a minor HAP source. See United States v. Louisiana-Pacific Corp., 682 F. Supp. 1122, 1133 (D. Colo. 1987) ("The concept of 'potential to emit' is the cornerstone of the entire [preconstruction permitting] program.").

North Carolina and federal air pollution control regulations define "[p]otential emissions" as

> the rate of emissions of any air pollutant that would occur at the facility's ***maximum capacity to emit*** any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a facility to emit an air pollutant shall be treated as a part of its design ***if the limitation is federally enforceable***. Such physical and operational limitations

> include air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed. Potential emissions include fugitive emissions as specified in the definition of major source in 40 CFR 70.2 . . . .

15A N.C. Admin. Code 02Q.0103(28) (emphasis added); see 40 C.F.R. § 63.2 (defining "potential to emit" in same fashion).

As these regulations make clear, a source's "potential to emit" is determined based on its "maximum capacity to emit" and only takes into account pollution controls or operational limitations if and to the extent they are enforceable. As the U.S. Court of Appeals for the Second Circuit has explained:

> [A] proposed facility that is physically capable of emitting major levels of the relevant pollutants is to be considered a major emitting facility under the Act unless there are legally and practicably enforceable mechanisms in place to make certain that the emissions remain below the relevant levels.

Weiler v. Chatham Forest Prod., Inc., 392 F.3d 532, 535 (2d Cir. 2004).

Dr. Sahu explains in his initial review of Duke's minor source submissions, originally sent to DAQ on November 7 by the Southern Environmental Law Center ("SELC") and resubmitted with this letter, that there is no question, given the range of fuels Duke claims Unit 6 is physically capable of burning, the potential rates and hours of operation of Unit 6, the variability of the effectiveness of the planned pollution control equipment, and the expectation of decreased plant efficiency over time, that Unit 6 is physically capable of emitting HAPs well above the major source threshold. Indeed, the fact that Unit 6 is physically capable of emitting HAPs above the major source threshold is apparent from Duke's original emissions estimates for Cliffside Unit 6, which stated that, even with pollution controls, Unit 6 would emit over 171 tons of hydrogen chloride (HCl), over 22 tons of hydrogen fluoride (HF), and over 217 tons of all HAPs combined.

Duke now claims that certain new assumptions about Unit 6 will bring its "potential to emit" below the major source threshold. In particular, Duke's claim relies on the following assumptions: (1) Unit 6 will exclusively burn coal with a 33% higher heating value than previously stated; (2) Unit 6 will only burn coal with a chlorine content that is below the median value for Eastern bituminous coal; and (3) Unit 6's pollution controls will be far more effective than previously stated, and these controls will consistently operate at peak levels of efficiency. None of these assumptions has been adopted as a "legally and practicably enforceable" restriction or condition on plant operation, and no enforceable obligation would prevent Duke from deviating from these operational parameters. The new assumptions and claimed efficiencies, therefore, cannot be used to restrict Unit 6's "potential to emit." It is indisputable that Unit 6 is "physically capable" and currently

allowed to burn coal with a lower heat and higher chlorine content and to have pollution controls operate at lower removal efficiencies than required to support Duke's claim. Thus, Unit 6 does not have "legally and practicably enforceable mechanisms in place to make certain that [its] emissions remain below the relevant levels." Id. As a result, Unit 6 currently is a major source based on the unit's potential to emit HAPs.

Unit 6 Will Not Become a "Minor" Source of HAPs Even if Its Proposed Permit Modifications Are Accepted

Duke also claims that, with the permit modifications it proposed to DAQ on October 23, 2008, it would become a minor source even if it were not one already. Specifically, Duke's October 23, 2008 submission amends its permit application and proposes that DAQ "amend the Permit terms to require that total acid gas and HAPs emissions are less than 25 tons per year and that total emissions of any single HAP are less than 10 tons per year." Duke specifically notes that it is "not requesting any other modification to the Permit." As demonstrated above, Unit 6 currently is a major source of HAPs based on its potential to emit HAPs above the major source thresholds. For similar reasons, Duke's corrected permit application and proposed permit modification will not, even if adopted, render Unit 6 a "minor" HAP source.

As explained above, only physical and operational restrictions that are legally and practically enforceable may be used to limit a source's potential to emit for purposes of the major source determination. This requirement may not be satisfied by the type of blanket restriction on emissions that Duke proposes, even though it is presented as an "enforceable" limit. In Louisiana-Pacific, a federal court considering the type of physical and operational restrictions that can be used to limit a source's potential to emit concluded:

> [N]ot all federally enforceable restrictions are properly considered in the calculation of a source's potential to emit. While restrictions on hours of operation and on the amount of materials combusted or produced are properly included, blanket restrictions on actual emissions are not.

682 F. Supp. at 1133. Of particular relevance here, the court in Louisiana-Pacific held that permit conditions which simply limited carbon monoxide emissions to 78 tons per year and volatile organic compounds to 101.5 tons per year should ***not*** be considered in determining "potential to emit" because these blanket emissions restrictions, unlike conditions such as limits on hours of operation, fuel consumption, or amount of production, "would be virtually impossible to verify or enforce." Id.

The Louisiana-Pacific case demonstrates that a polluter cannot avoid major source status simply by applying for and receiving a permit with "blanket restrictions" prohibiting HAP emissions at levels exceeding the major source threshold. Rather, any limits that count toward the major source determination must be in the form of enforceable and verifiable

limits on rates or hours of operation, fuel or raw material types, or other practically enforceable aspects of design or operation that will make certain that emissions remain below the major source threshold.

Duke does not propose limits that are measurable and enforceable as a practical matter and that will ensure that Unit 6's emissions remain below the major source threshold. Duke simply proposes a blanket restriction on emissions of the type rejected in Louisiana-Pacific, without explaining whether or how compliance would be verifiable or enforceable. Indeed, Duke has provided no evidence that it could monitor the HCl emissions from Unit 6 with sufficient precision to make permit limitations practicably enforceable. Moreover, as mentioned above, Duke's calculations presenting how it could bring its emissions below the major source threshold rely on several assumptions – about the minimum heat content and maximum chlorine content of the coal it will burn and the minimum efficiency its HCl pollution controls will achieve – none of which Duke seeks to make concrete with permit conditions. Duke's reluctance to commit to these assumptions is not surprising given the technical deficiencies with them that Dr. Sahu has identified in his review, which are summarized below. Therefore, even if DAQ accepts Duke's corrected permit application and adopts its proposed permit modification, Unit 6 will still be a major source of HAPs under federal and North Carolina law.

Technical Deficiencies in Duke's Minor Source Submissions

When Duke first claimed in its October 14, 2008 and October 23, 2008 letters that Cliffside Unit 6 is a minor source of HAPs, we requested that our consultant, Dr. Ranajit Sahu, review the technical assertions in Duke's letters and the supporting materials attached to those letters. On November 7, 2008, SELC provided Dr. Sahu's report as well as a cover letter reviewing the applicable legal standards. With the exception of one email dated October 31, 2008, it appears that Duke's latest submission is based on the same information it included with its October letters. We summarize below the three primary technical flaws Dr. Sahu has identified in Duke's claim that Unit 6 is, or can qualify as, a minor source of HAPs. Dr. Sahu focuses on HCl because it is the HAP that will be emitted in the largest quantity. As Dr. Sahu explains, the HCl emissions from Unit 6 are a function of (a) the amount of HCl that will be formed, which is itself a function of the amount of coal that will be burned and the amount of chlorine in that coal, and (b) the amount of HCl that will be captured by Unit 6's pollution controls.

Heat Content of Coal

In its October 23, 2008 application, Duke has improperly changed its assumptions regarding the heat content of the coal it will burn. The effect of this change is to significantly reduce the amount of coal that Duke projects will be burned by Unit 6 and correspondingly to allow Duke to assume that less HCl will be formed. Duke previously assumed a heat content of 9,376 Btu/lb. In its new submission, Duke assumes a heat content

of 12,777 Btu/lb. This reduces the amount of coal that Unit 6 is assumed to burn by more than 26%.

Duke's adoption of a higher heat content is improper because there is no enforceable requirement that would prevent Duke from burning coals with a lower heat content. For purposes of calculating potential to emit, Duke must select the coal blend that would result in the highest HCl emissions projections. By assuming a higher heat content, Duke has improperly minimized its projection of potential emissions. As Dr. Sahu indicates in his review, a blend of coals with a lower heat content could result in higher emissions of HCl.

Chlorine Content of Coal

Similarly, Duke has relied on an unjustifiably low coal chlorine content. In its application, Duke assumes the maximum chlorine content will be 3209 ppm. However, as Dr. Sahu indicates, the USGS Coal Quality Database reports that some coals from the regions where Duke is permitted to and intends to purchase coal have chlorine contents as high as 8800 ppm. Duke's submission is improper because, by selecting a chlorine content far lower than the maximum chlorine content among the coals it is permitted to burn, Duke has grossly underestimated the amount of HCl that will be formed.

The flaws in Duke's assumptions regarding heat content and chlorine content alone show that Unit 6 has the potential to emit significantly above the 10-tons-per-year threshold for a single pollutant.

Projected Removal of HCl at Unit 6

In its submittals to DAQ between December 2005 and August 2008, Duke reported that Unit 6's pollution control equipment would remove 98% of the HCl that will be created during combustion. However, in its October 23, 2008 submittal, Duke asserts that the same equipment will actually remove 99.9% of the HCl. Dr. Sahu identifies several problems with Duke's assertion. Before summarizing these problems, it is important to recognize that, even putting aside the questions regarding coal heat and chlorine content discussed above, Unit 6's HCl emissions would exceed 10 tons if the removal efficiency were to drop just a small fraction of a percent from the 99.9% figure Duke now assumes. Dr. Sahu calculated that to keep HCl emissions under 10 tons, Duke would have to achieve an average removal rate of at least 99.8874%, even accepting Duke's flawed assumptions regarding coal heat and chlorine content. In other words, the slightest reduction in performance could cause Duke to exceed the major source threshold.

The first and most remarkable flaw in Duke's claims regarding removal efficiency is the fact that the very company that manufactures the control equipment, Alstom, disagrees with Duke's claim. Duke claims that the report by Alstom supports its potential-to-emit calculations. To the contrary, Alstom's letter directly contradicts the claims Duke makes.

Duke's central basis for claiming that it can achieve a continuous removal efficiency of 99.9% is its assertion that the new equipment at the Marshall Steam Station has achieved this reduction. However, Alstom itself states that the equipment in place at Marshall will achieve between 99.7 and 99.9% removal of HCl. Most of this range falls below the level that would be required for Unit 6 to emit less than 10 tons per year of HCl. Nowhere in Alstom's letter does the company provide any assurance that the control equipment that will be used at Unit 6 could remove 99.9% of HCl on average over the course of a year. The most that Alstom states is that the removal control at Unit 6 will be better than at Marshall. However, given the 99.7-99.9% range of performance at Marshall, this does not mean that the performance will maintain HCl emissions below the 10-ton threshold. Furthermore, Alstom explicitly disavows any performance guarantee, stating that its letter does "not constitute a specific performance guarantee or warranty by Alstom for HCl or HF removal."

Second, the data Duke presents from the Marshall plant also fail to support Duke's claim. Rather than showing a consistent removal rate of at least 99.9%, the data show that on six of the 16 runs presented, the removal efficiency was below 99.8874%, the level Unit 6 would have to maintain in order to avoid major source status.

Third, as Dr. Sahu explains, Duke's claims that the controls at Unit 6 will be even better than at Marshall are entirely speculative. Duke provides no data in support of its claims that the design elements of its various control systems will improve efficiencies and ensure 99.9% HCl removal. As noted, Alstom in its letter fails to provide any quantified estimate of the improvement in HCl removal that the additional controls at Unit 6 may provide.

Finally, Duke adopts two positions in its October 23, 2008 letter that directly contradict positions the company took in its "MACT-like" submissions of July 3, 2008 and August 22, 2008. The first inconsistency is Duke's prior rejection of reliance on short-term stack tests as a reasonable indicator of expected pollution control performance. Duke specifically pointed to HCl, stating "[a]s an example, hydrogen chloride ("HCl") . . . emissions are directly related to the amount of the pollutant in the fuel, which also varies even within the same coal seam. Short-term stack test results do not adequately account for that variability." See Duke's MACT-like Assessment, July 3, 2008 at 10. In its October 23, 2008 letter, Duke relies on just this type of short-term stack test when it cites short-term tests from the Marshall Steam Station.

The second inconsistency concerns reliance on statements from pollution control vendors. Duke previously asserted that pollution control effectiveness predictions by vendors like Alstom could only be relied on when the vendor provided a guarantee of the system's performance. "As you likely are aware, what vendor and consultant literature say about projected performance often overestimate what is eventually guaranteed. That is because the literature is based on speculation about what might happen; whereas a guarantee is based on hard engineering data and demonstrated performance with binding commercial

repercussions." See Letter from J. Turner to K. Overcash, Aug. 22, 2008, at 13. However, Duke now attempts to rely on statements by its vendor, Alstom, which expressly disavows any guarantee.

In summary, DAQ should reject Duke's claim that Unit 6 is a minor source of HAPs. From the initiation of the Unit 6 permitting process in 2005 until October 2008, Duke consistently asserted that the controlled emissions of HCl would be 171.9 tons per year, HF emissions would be 22.4 tons per year, and combined HAP emissions would exceed 217 tons per year. Without making any changes to the design of the facility, Duke now claims that Unit 6's HCl and HF emissions each will be below the 10-ton threshold and its aggregate HAP emissions will be below the 25-ton threshold. As discussed above, Duke bases this new assertion on unsupported assumptions regarding the coal Unit 6 will burn and the effectiveness of Unit 6's pollution controls. Further, even if Duke were to accept permit limits restricting the heat and chlorine content in the coal Unit 6 burns and requiring its claimed HCl and HF removal efficiency, Duke would still not be able to create a system of monitoring sufficiently precise to satisfy the Clean Air Act's requirement that any limitations be practicably enforceable in order to count towards the major source determination.

DAQ MUST COMPLETE A CASE-BY-CASE MACT DETERMINATION

DAQ must proceed to complete a case-by-case MACT Determination and set the appropriate emissions levels for all HAPs emitted by Cliffside Unit 6. Judge Thornburg, in his December 2 decision, required Duke to "proceed to initiate and participate in a case-by-case type MACT public proceeding." Judgment ¶ 5. The Court also stated that "The Cliffside Unit 6 qualifies as a potential 'major source' of HAPs, subject to regulation under § 112" and that DAQ "has the authority and duty to enforce the requirement of a full MACT proceeding and to modify its previously issued construction permit if the proceeding indicates such is necessary to comply with the requirements of current law." Judgment at ¶¶ 3, 4. Finally, the Court required that the case-by-case MACT Determination conclude within sixty days.

In light of this Order, Duke asked DAQ both to proceed with a case-by-case MACT Determination and also to review its request to be considered a minor source. As we have indicated, we do not believe that Unit 6 is now a minor source or can qualify as one based on the permit modification Duke has proposed. However, even if DAQ moves forward with an evaluation of Duke's minor source request, it should concurrently conduct and complete the case-by-case MACT Determination. The failure timely to conduct a case-by-case MACT Determination would not only violate the Court's Order but also appear to prejudge the outcome of Duke's minor source application prior to notice and comment. This is especially critical in light of the requirement that Duke obtain a case-by-case MACT Determination within sixty days. Thus, at a minimum, if DAQ elects to issue a draft minor

source permit for public comment, it should do so simultaneously with issuance of the draft MACT Determination—not before.

DUKE'S CONSTRUCTION PERMIT FOR UNIT 6 IS NOT VALID

In light of the Judge Thornburg's decision that section 112(g) of the Clean Air Act applies to Cliffside Unit 6 and that a MACT Determination is required, Duke's construction and operation permit is invalid under state law and DAQ must immediately direct Duke to stop constructing Cliffside Unit 6 until it obtains a valid permit.

Under North Carolina law, an owner is not permitted to construct a power plant without first receiving a construction and operation permit from DAQ. 15A N.C. Admin. Code 02Q.0301. North Carolina law also requires that any construction and operation permit must contain all the emissions limitations applicable to the plant. 15A N.C. Admin. Code 02Q.0314(a) (providing "[a]ll emissions limitations, controls, and other requirements imposed by a permit issued pursuant to this Section shall be at least as stringent as ***any other applicable requirement*** as defined under Rule .0103 of this Subchapter. The permit shall not waive or make less stringent any limitation or requirement contained in any applicable requirement.") (emphasis added). The "applicable requirements" that must appear in all construction and operation permits specifically include any emission standards and other requirements under the hazardous air pollution standards in section 112 of the Clean Air Act. 15A N.C. Admin. Code 02Q.0103(5)(d) (defining "Applicable requirements" to include "any standard or other requirement under Section 111 or 112 of the federal Clean Air Act . . . ."). The construction and operation permit pursuant to which Duke is constructing Cliffside Unit 6 is invalid because it is missing a critical "applicable requirement" – a section 112(g) MACT Determination.

North Carolina law provides no exception to the requirement of a final, valid air permit as a precondition to engaging in construction activity. Therefore, DAQ should order Duke immediately to stop further construction of Unit 6 unless and until it obtains a complete pre-construction permit, including a final and effective case-by-case MACT Determination pursuant to section 112(g). 15 A N.C. Admin. Code 02Q.0101(a)(2)(C) (providing "(a) No owner or operator shall do any of the following activities, that is not otherwise exempted, ***without first*** applying for and obtaining an air quality permit . . . (2) construct, operate, or modify a facility that has the ***potential to emit*** at least 10 tons per year of any hazardous air pollutant or 25 tons per year of all hazardous air pollutants combined or that are subject to requirements established under the following sections of the federal Clean Air Act . . . (C) Section 112(g), construction and reconstruction) (emphasis added). Halting construction now is the only effective means to ensure that no design or operational commitment is made that may undermine achievement of maximum controls of HAP emissions from Unit 6. This is what the law requires.

CONCLUSION

DAQ should reject Duke's claim that Unit 6 is, or will be, a minor source of HAPs; move forward quickly to perform a case-by-case MACT Determination consistent with the Court's Order; and, pending completion of that Determination, order Duke immediately to halt further construction of Unit 6.

Thank you for your consideration.

Sincerely,

John Suttles
SOUTHERN ENVIRONMENTAL LAW CENTER
200 West Franklin St., Suite 330
Chapel Hill, NC 27516
Telephone: (919) 967-1450
Fax: (919) 929-9421
E-mail: jsuttles@selcnc.org

Benjamin Longstreth
Mitchell S. Bernard
Aaron M. Bloom
Patrice Simms
NATURAL RESOURCES DEFENSE COUNCIL
1200 New York Avenue, NW
Washington, D.C. 20005
Telephone: (202) 289-1060
E-mail: blongstreth@nrdc.org

Enclosures
cc (w/encl.): Governor Michael F. Easley
Secretary Bill T. Ross, DENR
Marc Bernstein, NCDOJ
Kathleen Forney, EPA Region 4
Garry S. Rice, Duke Energy
Nash Long, Hunton and Williams