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VIA Emailed PDF & FAX

July 10, 2009

Mr. Eric Cornwell, Acting Permitting Program Manager
Air Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
Atlanta, GA 30354

**RE: Commenter's Letter Memorandum, in re:
Air Quality Permit Application
Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4, Burke County, GA**

Dear Mr. Cornwell:

On June 8, 2009 the Georgia Air Protection Branch published a notice on an air permit list-serve announcing that Southern Nuclear Operating Company has made an air permit application for the Vogtle Electric Generating Plant Units 3 and 4 in Burke County, GA. This communication is hereby transmitted for filing with the Georgia Air Protection Branch.

1 Commentor's Identity

This communication to you is made on behalf of the Augusta Building & Construction Trades Council, headquartered in Augusta, GA. The Council provided this following statement of their interest concerning air quality permitting of the proposed facility:

“The Augusta Building & Construction Trades Council represents the concerns of thousands of highly skilled construction workers and their craft organizations in east and south Georgia and in the Augusta area. Hundreds of these construction workers live with their families, and work, in and near Burke County, and in the vicinity of the proposed Vogtle expansion. Many of these workers and their family members are very concerned about additional air pollution. Building Trades workers are routinely exposed to elevated levels of air pollutants in their work place. These same workers and their families are especially concerned about increasing their exposure to air pollution during their leisure time and in their homes.”

The Council has asked me to conduct an independent, preliminary review of the Southern Nuclear Operating Company air permit application and submit it for filing purposes in response to your June 8, 2009 notice of receipt of the Southern Nuclear Operating Company Air Permit Application.

It is our understanding that the Georgia Air Protection Branch will issue a draft Prevention of Significant Deterioration (PSD) permit and hold a 30 day public notice and comment period in the future in response to the Applicant submittal. If this is not the intent of the agency, would you please inform us in writing of how the Georgia Air Protection Branch intends to address public participation for purposes of this proposed expansion?

2 *Request to be Notified in Writing of the Future PSD Public Notice*

As to the Vogtle facility, when the future public notice, draft PSD air permit and the APB-EPD-DNR statement of basis are issued, would you please provide these documents and/or at the very least the future public notice in writing to the following addresses:

Alexander J. Sagady
Environmental Consultant
657 Spartan Ave
East Lansing, MI 48823

Augusta Building & Construction Trades Council
1250 Reynolds St.
Augusta, GA. 30901

If you could also send me a copy of the full public release package [public notice, draft permit & statement of basis] when it is issued, please send me an invoice for any expenses in providing me this written material. With this letter I certify financial responsibility for up to \$150 of expense in meeting this request.

3 *Commentor's Request for a Public Hearing*

By this letter, the Council requests a Georgia Air Protection Branch public hearing be held regarding this facility. The Council requests that a public hearing be held in association with a future public notice, draft permit and comment period announcement concerning this facility at a location near the proposed facility.

4 Preliminary Comments of Augusta Building & Construction Trades Council for Filing with Air Protection Branch-EPD-GA-DNR in Regard to the Subject Facility Air Permit Application

4.1 The Best Available Control Technology (BACT) Demonstration Submitted by the Applicant Fails to Conform to EPA's "Top Down" BACT Determination Process Notwithstanding Applicant's Claims that it Carried Out Such a Determination

The Applicant proposes Units 3 and 4 as a major modification to an existing major stationary emission source, the pre-existing Vogtle Units 1 and 2. Because the Applicant admits the major modification must be permitted under the Georgia PSD air permit process, it is necessary that any such application contain a best available control technology demonstration and proposed BACT emission limitations for any NSR-regulated pollutant that will be emitted beyond the significant emission level. The Applicant admits the increased potential to emit exceeds the significant emission rate for carbon monoxide (CO), nitrogen oxides (NOX), particulate matter (PM), PM₁₀, PM_{2.5} and volatile organic compounds (VOC),¹ so the BACT review for the proposed facility must address each of these pollutants.

The Applicant claims:

“Methodology

BACT analyses were performed in accordance with the EPA top-down method as previously described in Section 4.4.1.”²

Notwithstanding Applicant's claims, Commentor's assert that Applicant's submitted BACT determination does not follow EPA's "top-down" BACT determination procedure in several respects, as reviewed below.

First, Applicant's BACT demonstration never addresses specific, technically feasible engine process control and process exhaust gas emission control technology as specific, physically described technologies. Failure to do so means the Applicant has not conformed to the "top-down" BACT determination process as claimed.

The following alternative and technically feasible means of process gas emission control are available for the operation of internal combustion engines:

oxidizing catalyst gas after-treatment for VOC and CO control

reducing catalysts for NOX control

¹ Air Permit Application, Section 4.3; Table 4-2

² Air Permit Application, Section 6.1, first paragraph

exhaust gas re-circulation for NOX control

physically staged-charge combustion for NOX control

trap oxidizers for PM, PM₁₀, PM_{2.5} control

fuel sulfur content restrictions for IC engine PM, PM₁₀, PM_{2.5} control

sensor-based IC engine computerized combustion process and load management control for VOC, CO, NOX and PM control

combustion air pre-heat for VOC, CO and PM control

None of the above technically feasible process alternative and process gas after-treatment emission control approaches and the corresponding level of BACT emission limitation performance achievable from each appropriate BACT emission limitations is discussed in Applicant's BACT submittal. A "top-down" BACT determination must rank emission control alternatives by the emission rates achievable by each such technology. No such analysis is shown Applicant's submitted BACT demonstration.

Nothing in the submitted material provides any cost effectiveness information on either the target BACT technology or alternative technologies. Such analysis is required under the EPA "top-down" BACT determination process.

The Applicant claims:

"The NSPS and NESHAP limits for the internal combustion engines are dependent on the engine size and model year; therefore, once the exact engine specifications are known this BACT analysis may need to be updated. These standards subsections below are based on a combination of potential emission limits, potential vendor data, and AP-42 emission factors."³

Commentors assert that the Applicant must show how each of the claimed emission control factors are determined by the information considered. Applicant's unsupported assertion that such consideration complied with EPA's "top-down" BACT determination procedure must be rejected as being without merit. Moreover Applicant's claim that the BACT demonstration might have to be supplemented when IC engine models are selected must be taken as a *de facto* admission that the Applicant's submittal is incomplete and not approvable.

All BACT determinations, including those done with EPA's "top-down" BACT determination policy, must address environmental effects of the selection of the BACT

³ Air Permit Application, Section 6.2, first paragraph, p 46 of 105

emissions. Such consideration is inherent in the definition of BACT at 40 C.F.R. Sec. 52.21(b)(12). One part of the environmental review required by the BACT definition is consideration of the effects of the BACT technology decision and setting of BACT emission limitation on unregulated air pollutants. Such consideration is required under doctrines of a number of EPA Environmental Appeals Board decisions starting with the EPA administrative decision in the North County municipal waste incinerator case. Selection of CO, VOC, NOX and PM emission controls will have effects on unregulated toxicants from the proposed process equipment in the Application. When the selection of a BACT technology has the effect of reducing an unregulated air contaminant emission, such effect must be considered in the BACT emission limitation setting process. The Applicant has carried out no such analysis in their submittal.

Failure to carry out the procedural decisionmaking elements cited above means the Applicant has failed to conform to EPA's "top-down" BACT determination procedure. Such failure means that the Applicant submittal cannot ensure that the selected emission limitations reflect a PSD BACT level of NSR-regulated pollutant control. When EPA's policy is not followed, any demonstration that claims compliance with the EPA BACT procedure cannot ensure that BACT emission limitations have been properly selected.

4.2 An Allowable Opacity of 40% is Not BACT for Visible Emissions from the Proposed Combustion Units

EPA BACT definition at 40 C.F.R. Sec. 52.21(b)(12) explicitly includes a BACT requirement for visible emissions.

Applicant's submittal contains no BACT demonstration for visible emissions from the combustion units. Such a submittal is incomplete under the requirements for BACT visible emission limitations. An opacity of 40% arising from a statewide SIP limit for visible emissions cannot be deemed to be a BACT visible emission limit. Such a limit should be on the order of 10% opacity.

4.3 Condensible Particle Emissions at the Proposed Facility are Not Automatically Deregulated Under EPA's Revisions to New Source Review Requirements

Although EPA's revision of new source review rules included a temporary deregulation of condensible particulate matter, it is not clear that such a deregulation at the federal level had the effect of deregulating condensible PM in the Georgia State Implementation Plan. Under EPA's rule, deregulation of condensible PM is not automatic for state implementation plans when a plan previously regulated condensible PM. Under the rule, if the pre-existing SIP practices provided for regulation of condensible PM emissions, then such a deregulation would not happen in a state.

Georgia Air Protection Branch must show that it did not regulate condensible PM at all under the pre-existing SIP before the federal rule condensible PM deregulation would ever take effect in Georgia. Clear statements on the record by the Georgia Air Protection Branch must clarify and explain any decision not to regulate condensible PM with PM emission limitations at the proposed facility.

Georgia Air Protection Branch must also take note that EPA's new source review rules change on the matter of deregulating condensible PM emission was not properly established as a rules change under the Federal Administrative Procedures Act since the deregulation did not appear in the draft regulation to establish the changed rule. Parties have noted this fact and reserved this issue for a summary challenge to that part of the EPA rule.

4.4 Excluding Condensible PM Emissions from PM-10 related Air Quality Impact Analysis is an Improper Air Quality Modeling Practice

Even if EPA's condensible particle emission deregulation were determinately in effect in Georgia, no part of this deregulation affected the duty to properly assess particulate matter ambient impacts of all particulate emissions for PM₁₀. While EPA's condensible PM emission deregulation would allow sources to escape condensible PM emission limitations and using condensibles for rule applicability analysis, it did not change the pre-existing duty to consider all PM emissions during air quality modeling demonstrations to address compliance with PM related National Ambient Air Quality Standards and Prevention of Significant Deterioration Increments. No part of EPA's deregulation action on condensible particle emissions affected a source and air quality management agency's duty to properly assess the effects of the presence of PM₁₀ and PM_{2.5} as addressed by their respective NAAQS. The fundamental purpose of air quality dispersion analysis is to make predictions of ambient air quality based on a proper assessment of emission inputs. Fair and accurate modeling demonstrations must ensure that all PM₁₀ and PM_{2.5} emissions are properly considered as they effect compliance with NAAQS and PSD increments.

The only PM emissions addressed in the air quality analysis are filterable PM₁₀ emissions. There appears to be no characterization of condensible PM₁₀ as an input to the modeling analysis and Applicant's submittal cannot be deemed an acceptable and accurate prediction of ambient PM₁₀ NAAQS standard and PSD increment compliance under the circumstances.

4.5 The Applicant Should be Required to Perform PM_{2.5} Modeling

The Application contains no review of PM 2.5 NAAQS compliance. Georgia Air Protection Branch should require the Applicant to submit air quality modeling analysis of PM 2.5 NAAQS compliance with the proposed facility.

4.6 Applicant's Submittal Contained No Rendition of Contemporaneous Increases and Decreases in the Overall Project Emissions Calculus and Air Quality Modeling Analysis

Although the Applicant admits that its project is a major modification at a major stationary source subject to Prevention of Significant Deterioration New Source Review Requirements, the Applicant has failed to provide the required demonstration showing all contemporaneous emission increases and decreases required by the regulations. Commentors are aware of at least one other recent construction related air quality permit at the site. Such other site air permits and physical emitting facilities would have to be considered as contemporaneous emissions increases which must be considered in the emission increase applicability analysis and in ambient air quality demonstrations. Such contemporaneous emission increases and decreases were never shown nor considered in Applicant's submittal.

4.7 Applicant Should Install Continuous Opacity Monitors; Method 9 Observers

Reliance on infrequent Method 9 monitoring of opacity does not provide sufficient compliance assurance for the subject facility and does not allow compliance determination at night or during adverse sky/sun conditions. As a result, the Applicant should be required to install continuous emission monitoring on all combustion emission source stacks, with QA/QC requirements as outlined in EPA's performance specifications.

If reliance on Method 9 observation is relied upon in any form, requirements for the training and certification of visible emission observers must be made a federally enforceable part of the proposed permit.

4.8 The Applicant has Failed to Include Site Roads and Ongoing Construction Activities as Site Emission Units

The Applicant is expected to construct new or modified site roads for all traffic, including construction traffic with the commencement of construction of Units 3 and 4. All such activities are emission units which must be disclosed and characterized. Fugitive road emissions must be subject to emission limitations of PSD BACT stringency to address fugitive particle emissions..

Similarly, multi-year construction activities will generate considerable fugitive PM emissions. These should also be considered as a fugitive emission unit and addressed in the subject Application.

4.9 Nuclear Plant Equipment that Emits Airborne Radionuclides Should Be Addressed in the Application as Emission Units

Nothing in the Application addresses the nuclear plant equipment as an emission unit for airborne radionuclides, which are hazardous air pollutants under 40 C.F.R. Sec. 7412(b)(1) and Georgia air regulations.

Nuclear plant operations are capable of producing radioactive noble gases and molecules of containing radioactive forms of hydrogen and nitrogen compounds (or molecular nitrogen). Gas holdup operations are used sometimes to address such emissions. Process areas of the facility where gases can escape the primary coolant loop or where gases can escape from spent fuel in spent fuel engineered wet pool storage must be evaluated for potential gaseous radionuclide emissions. Process engineering reliance on pressurized nuclear fuel rods is not a sufficient basis to assume there will be no radioactive emissions as such fuel rods can leak in actual field use.

All such process radionuclide emissions must be considered as airborne radionuclides and thus as Clean Air Act Hazardous Air Pollutants. Airborne radionuclide-emission units at the site must be identified, their emissions characterized and technology-based emission controls must be addressed. Once source applicability to the permit regulation is shown, all regulated pollutants and emission units should be identified.

Once airborne radionuclide emissions are identified and characterized, proper environmental assessment of source operation mitigates that the Applicant be required to conduct a multi-pathway human health and environmental risk assessment of such emissions to quantify any adverse effects of plant operation.

4.10 Cooling Tower Issues

4.10.1 Applicant's BACT Analysis Failed to Properly Justify Reliance on a 0.005 % Drift Elimination Efficiency

The Applicant is showing a drift elimination efficiency of 0.005% for the Service Water System Cooling Towers. There is no information or analysis presented that justifies the failure to consider technically feasible approaches to achieve 0.0005% drift elimination efficiencies for these units. For example, there is no quantification of cost efficiency, no calculation of additional emission reduction, etc. Such failures do not constitute conformance to EPA's "top-down" BACT determination procedures and cannot be thus be relied upon as assuring a proper BACT determination.

4.10.2 Water Input Characterization for Circulating Water Cooling Towers

The Application should have provided a copy of the study characterizing the total dissolved solids concentration of the river water used for the circulating water towers. The Application should be required to monitor this parameter.

It is technically feasible to reduce total dissolve solids concentrations in the river water withdrawn for use at the site. Such water pretreatment must be considered in any BACT review for circulating water cooling tower PM emissions characterization and emission limitation.

4.11 HAP Source Size Status Should be Clarified

In Section 5.2.3 of the Application, it is stated:

“Plant Vogtle is a major source of HAPs, therefore, the proposed engines associated with the Vogtle Units 3 & 4 project are subject to Subpart ZZZZ.”

Noting that the facility is a major HAP source conflicts with information shown previously in the emission characterization section of the Application. This statement must be explained and addressed.

Thank you for considering this letter memorandum in response to your listserv notice of application received. If you should have any questions about this communication, please do not hesitate to contact me at ajs@sagady.com or at (517)332-6971.

Respectfully submitted,



Alexander J. Sagady
Environmental Consultant

