

4APT-APB

Alan W. Klimek, P.E., Director  
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Raleigh, North Carolina 27699-1641

Dear Mr. Klimek:

Thank you for your letter dated October 30, 2000, concerning North Carolina's response to the nitrogen oxides state implementation plan call (NOx SIP Call) issued October 27, 1998. Contained in this submittal was a temporary rule that was designed to meet Phase I of the SIP Call rule. As discussed in the conference call on October 24, 2000, the Environmental Protection Agency (EPA) will be able to grant final approval to the temporary rule providing it meets the notice and comment requirements as well as the provisions of the NOx SIP Call. Also included in this submittal was a schedule to adopt the final permanent version of this temporary rule and a request for EPA to issue a waiver under the Clean Air Act to allow credit for low sulfur gasoline beginning in 2004.

However, the North Carolina NOx SIP submittal is still missing crucial elements necessary for EPA approval. The most significant is the absence of a demonstration that the rule will meet the North Carolina NOx emission budget and achieve the required NOx emission reductions. The rule also contains significant deviations from the model rule provisions and, in its current form, North Carolina would not be able to participate in the multi-state trading program administered by EPA. Some of these deviations are related to the apparent voluntary nature of the State's trading program for controlled sources, and the allowing of trading between trading program and non-trading program sources. These issues are addressed in additional detail in the enclosure. In addition, we recommend that the State preface their NOx SIP plan with an executive summary which explains how the State is meeting the requirements of the NOx SIP Call. In this summary the State should explain their method for meeting their NOx budget in 2007 and provide a demonstration which clarifies how their rules satisfy the requirements. The State should also explain deviations from the model rule, and which "flexibilities" in the model rule they have incorporated into their regulations.

We look forward to continuing to work with you to develop an approvable NOx SIP. If you have any questions concerning these comments please contact Kay Prince of the EPA Region 4 staff at (404) 562-9026 or have your staff contact Randy Terry at (404) 562-9032.

Sincerely,

Winston A. Smith  
Director  
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Enclosure

cc: Brock Nicholson, NCDENR  
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MITCHELL

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## COMMENTS ON NORTH CAROLINA DRAFT NITROGEN OXIDES (NO<sub>x</sub>) STATE IMPLEMENTATION PLAN (SIP) RULES

### 1. TRADING PROGRAM

a.) Sections .1416(d) .1417(d), and 1418(e) allow sources to voluntarily participate in an emission trading program. In order for a trading program to be considered a remedy under the NO<sub>x</sub> SIP Call, all units that are large electricity generating units (EGUs) or large non-EGUs must participate in the trading program. Further, the rule appears to allow units to enter or leave the trading program at any time and does not specify any criteria or procedure for a unit changing its participatory status. The Environmental Protection Agency (EPA) cannot effectively administer a trading program under such circumstances.

b.) The rule provisions (in section .1420(g)) allowing sources in the trading program to effectively trade with sources outside the program by receiving credit for emission offsets from the non-trading program sources are also unacceptable. Under an EPA-administered program, sources that are not large EGUs or large non-EGUs may participate only by opting into the trading program and meeting the emission monitoring and other program requirements.

c.) **Section .1416 Seasonal Emission Rates for Boilers at Utility Companies and Section .1417 Seasonal Emission rate for Large Combustion Sources** - These rules must be revised to include unit specific allocations for all existing large EGUs and large non-EGUs.

Paragraphs (a), (b), and (c) set out the allocations for EGUs. It is suggested that these allocations be presented in tabular form, to be consistent with the allocations for non-EGUs. Additionally, allocations must be whole numbers.

For any sources (such as Ed Generators and Kitty Hawk) that are allocated partial allowances, EPA will round to the nearest whole allowance, with any number less than 0.5 being rounded down to zero.

d.) **Emission rate versus emission limit/allocation** - Throughout section .1416, and the remainder of these rules, the term “emission rate” is apparently used to mean “allocation.” In later portions of these rules the term “emission limits” is used to mean “allocation.” This must be clarified. It is suggested that the term “allocation” be used, except where the State is referring to an emission rate (e.g. 0.15lb/mmBTU).

**e.) Sections .1416(g), .1417(g) and .1418(g)** - These rules appear to require allowances be held under the trading program only for emissions in excess of the initial allocations. However, initial allocations can also be traded. Therefore, in order to be consistent with 40 CFR Part 96, which is referenced in section .1419, these rules must require allowances covering a unit's total emissions for the ozone season.

**f.) Section .1417 Seasonal Emission Rate for Large Combustion Sources** - The table does not and should specify a location for a few sources such as Ed Generators and Wiccacon. Additionally, all source designations are not and should be listed within the tables for consistency.

All the plants have lower or equal allowable emissions in 2006 than 2004 and 2005 except for the Butler Warner Generating; Cumberland Co. Please clarify why the allowable emissions are higher for this plant in 2006.

**g.) Section .1419(b)(1) and (c)(1)** - This rule refers to "Subchapter 2Q" for the permit applications requirements, which is to be used rather than 40 CFR Part 96. The State must submit Subchapter 2Q to the EPA for review in order for EPA to determine whether it is consistent with part 96 permitting requirements.

**h.) Section .1419(e)** - This rule states that the early reduction credit provisions in 40 CFR Part 96 do not apply. However, the rule must also explain how the compliance supplement pool will be distributed, and/or how the distribution is consistent with 40 CFR 51.121.

**i.) Section .1419(g)** - This rule states that EPA will administer the trading program set forth in this rule. However, as discussed in comments 1 and 2 above, the EPA will not be able to administer the State's NO<sub>x</sub> SIP rule, in its current form.

**j.) Section .1420(b)(1)** - This rule uses "projected seasonal heat input" for allocations to units not operating in the previous four years. It is recommended that the State consider how it will evaluate the reasonableness of such projections and whether there should be a cap on the allocations, or a reduction of allocation. This could be done in a manner similar to that for new units in section .1421.

**k.) Section .1420(f)** - This rule provides for the transfer of allowances among trading program sources with prior State approval. This is unacceptable. This provision is unnecessary for such sources and contradicts the allowance transfer provisions of 40 CFR Part 96 that allow transfers without any state (or federal) approval.

**l.) Section .1420(g)** - This rule allows trading program sources to offset emissions by reducing emissions from non-trading sources. This is unacceptable. In order for any

claimed emission reductions to be taken into account under the EPA-administered trading program, they must occur at either an affected unit or an opt-in unit that has demonstrated the validity of the claimed reductions by meeting trading program requirements, including emission monitoring and reporting. See additional comments in comment b, above.

**m.) Section .1421(e)** - The rule states that allocations for new units will be reduced to the level of the unit's actual emissions. However, the rule does not explain when the reduction would be made (e.g., when in relation to the end-of-year procedures for comparing a unit's emissions and allowances) and how the reduction would be made if the allocation has been traded. This must be clarified.

## **2. FUEL WAIVER REQUEST**

North Carolina's submittal of the fuel waiver request is based on the North Carolina 8-hour ozone standard. Although, this State requirement is the same as the federal 8-hour ozone standard, under the Clean Air Act (CAA), the EPA can only approve a state fuel measure into a SIP if the state demonstrates the measure is necessary to achieve a national ambient air quality standard (NAAQS). However, the North Carolina 8-hour ozone standard does not meet this requirement and the federal 8-hour ozone NAAQS is currently being litigated and cannot be implemented by EPA.

North Carolina's fuel waiver request indicates that a State fuel would assist areas violating the 1-hour ozone standard, and the State's more stringent 8-hour ozone standard. In accordance with the CAA, North Carolina must demonstrate that controls in the attainment portions of the State are necessary to benefit the violating 1-hour ozone maintenance areas. The State must also demonstrate that there are no other reasonable and practicable non-fuel measures that could be implemented to help these areas achieve the 1-hour ozone standard in a timely manner. It will be very difficult for North Carolina to demonstrate that there are no other reasonable and practicable measures. The NOx SIP call demonstrates that the required NOx reductions are achievable by implementing cost-effective controls on utilities and large industrial boilers by 2004, which is the same year as the State fuel will be implemented. Furthermore, reductions from these same stationary sources by 2003 are required by the section 126 rule.

## **3. INSPECTION AND MAINTENANCE (I/M) PROGRAM**

The EPA Office of General Counsel is reviewing North Carolina's "enabling" legislation for the I/M program to determine whether the legislation, without a State effective regulation, is adequate for credit in the State's NOx SIP Call rule. Even if the legislation is deemed adequate, the State must submit documentation to support the emission reduction credit taken for the I/M program.

## **4. APPLICABILITY**

**a.) Section .1402 Applicability** - The impact of the “trigger” provision in this rule must be clarified to show how this would impact the current allocations in this rule.

**b.) Section .1402 (d)** - This rule references a “paragraph (i).” However, “paragraph (i)” was not included in the regulations submitted to the EPA for review. It appears that paragraph (h) may be the paragraph that was meant by the reference. This must be clarified.

**c.) Section .1402(h)** - It is unclear if the conditions of section .1402(h)(5)(i)-(iii) are required to be met collectively or individually. This must be clarified.

## **5. COMPLIANCE**

**a.) Section .1401 Definitions** - In the definition for “fossil fuel means,” and throughout the remainder of the NOx SIP rules, the State uses the term “unit” and “source” as interchangeable. These terms generally are not interchangeable, rather, “source” usually refers to a particular plant or entity, whereas “unit” usually refers to a specific boiler, or “unit” located within that plant. This must be clarified throughout section .1401 and the remainder of the NOx rules.

**b.) Section .1403 Compliance schedules** - New units which are covered under section .1418 do not appear to have a compliance date. This must be clarified.

**c.) Section .1403(b)** - Throughout this paragraph it is stated that “Final compliance shall be achieved within 3 years after Director’s notice ...” However, compliance is required by the NOx SIP Call by May 31, 2004. This must either be clarified, or it must be revised to reflect the required compliance date.

**d.) Section .1403 (d) and (e)** - Under this rule, the monitoring deadlines are almost the same as the emission compliance deadline (May 1, 2004) for existing sources, even those in the trading program. However, an existing source must begin monitoring and reporting data on May 1, 2003, in order to collect at least 3 years of data to be used to update the allocations (as provided in.1420) by 2006. This requirement must be revised.

Additionally, the phrase “early enough” as it appears in section .1403(d) must be clarified. Either existing regulations regarding the submission of permit applications must be cited, or the State’s policy about application deadlines must be referenced.

**e.) Section .1403(f)** - The rule requires sources to comply with all of the requirements except, under approval of the Director, during: (1) testing of combustion control modifications; or (2) adding or testing equipment or methods for the application of a

requirement in this section. The provision appears to apply only up until the deadline for compliance with the new seasonal emission limits in this rule. If that is the appropriate interpretation, then the provision is acceptable. However, if the exceptions in this provision apply after the deadline, it is unacceptable because the new emission limits cover the entire ozone season, including hours when a source is conducting system modifications or testing new compliance methods. This should be revised to make the applicability of the exceptions clear.

**f.) Section .1418 New Electric Generating Units, Large Boilers, and Large I/C Engines** - For new units, the rule does not include a compliance schedule with deadlines for permitting, emission reduction, monitoring and reporting. This schedule must be included.

## **6. MONITORING, REPORTING AND TESTING**

**a.) Section .1404(e) Recordkeeping, reporting and monitoring** - The rule appears to require missing data only if monitor availability is less than 95 percent. However, 40 CFR Part 75 requires missing data for each operating hour the monitor is unavailable. Furthermore, the missing data procedures in 40 CFR Part 75 include provisions covering various circumstances when a monitor is unavailable and several monitoring options. These provisions are found in sections 75.33 through 75.37, and Appendices D and E to part 75). The rule must reference all these provisions, not just section 75.33, and must state that they apply to all large EGUs and large non-EGUs.

**b.) Section .1404(f)** - The first sentence of section (1) must be revised to clarify that sources required to meet or electing to meet part 75 monitoring and reporting must also meet the quality assurance provisions of part 75.

**c.) Section .1404(g)** - The rule does not address the format or method for reporting emission data. This is done in 40 CFR Part 75. The rule must be revised to also state that part 75 applies to all large EGUs and large non-EGUs.

**d.) Section .1404(h)** - The rule specifies that sources outside the trading program must record and report emissions using a 24 hour averaging time. The rule must also state that part 75 applies to all large EGUs and large non-EGUs. Part 75 requires the recording and reporting of hourly emissions.

**e.) Section .1404(i)** - The rule states in subparagraph (2) that sources not using Continuous Emissions Monitors (CEMS) should determine heat input using the best data available. This language is unacceptable because it is too broad and would require a case-by-case determination. This must be revised. It is recommended that the State of North Carolina should use more prescriptive language and cite examples of acceptable methods of calculating heat input.

**f.) Section .1404(j)** - The rule allows compliance through annual testing. The rule must be revised to also require large EGUs and large non-EGUs to meet part 75 requirements.

**g.) Section .1404** - This rule contains minimal and inadequate directions on emissions calculations but there is a reference to Rule .0606 that apparently has more information. EPA cannot determine the adequacy of the emission calculation until this rule .0606 has also been submitted.

The missing data section (Rule .1404(e)) actually addresses minimum data availability requirements. This rule refers to 40 CFR Part 75.33, which does include missing data replacement procedures. However, the rule also refers to part 60, appendix F, which has no missing data replacement procedures. If the State intends for sources to account for missing data with replacement data, they must clarify this requirement and should probably reference only part 75 procedures.

**h.) Sections .1407 and .1408** - In these rules the source owner can choose between CEMS and annual emissions testing for certain size units to determine compliance with the Reasonably Available Control Technology (RACT) emission limit. This provision appears to apply only to compliance with a certain emission limit (in lb/MMBtu), and not to a budget trading value. This provision will only be acceptable if the unit is small, and if the unit is subject to other monitoring (e.g., burner inspections and tuning) over the course of the year to support a certification of compliance. It is recommended that emissions from such a unit not be included in a trading program without better correlation between operational parameters and actual emissions or some other adjustment to the data (e.g., a correction for poor data quality).

**i.) Section .1415 - Test Methods and Procedures** - It appears that periodic emissions testing is not required unless the Director requests testing. This must be revised.

The method list in Section .1415 is incomplete. The draft rule lists only two methods for NO<sub>x</sub> measurements, Methods 7E and 20 depending on the type of unit. These methods provide data in emissions concentrations units (e.g., ppm, mg/dscm) only. The units of measure needed to implement the regulation are lb/hr and lb/MMBtu. For the complete measurement the rule must specify Method 1 for velocity traverse location; Method 2, 2F, or 2G for velocity and flow rate determination; Methods 3A or 3B and 19 for using the F-factor correction to lb/MMBtu; and Method 3 (or 3A or 3B) and Method 4 for gas molecular weight determination, as applicable. All of these methods are in 40 CFR part 60, appendix A and are necessary to conduct the testing of the NO<sub>x</sub> mass emission rate for compliance with the NO<sub>x</sub> short term emission concentration limit and for calculating the annual emissions. In addition, there are other methods from voluntary consensus organizations (e.g., Gas Research Institute, ASTM) that may also be used for measuring

NO<sub>x</sub> concentrations from combustion sources. This section must be revised.

Except for Method 20, the methods for gaseous concentration measurements do not include a clear description for the sample point locations for testing. The following language for conducting the NO<sub>x</sub> emissions tests for other than gas turbines is recommended.

*“Select an accessible measurement location at least two equivalent diameters downstream of the control device or pollutant exhaust generation and at least one-half equivalent diameter upstream of the exhaust or other control device. Select sampling points along a measurement line that passes through the centroidal area of the stack or duct. Locate three sampling points at 16.7, 50.0, and 83.3 percent of the measurement line. If the measurement line is longer than 2.4 meters and you do not expect stratification, you may locate the sampling points along the measurement line at 0.4, 1.2, and 2.0 meters from the stack wall or duct.”*

Please note that the test methods for NO<sub>x</sub> listed above are the currently being revised by the Agency and the preceding language is the best available at this time. However, the State should be aware that there will be significant measurement accuracy concerns for NO<sub>x</sub> concentrations less than about 5 parts per million (ppm). The emissions from low-NO<sub>x</sub> burners and from selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) controlled units will be very low in many cases. For trading purposes, this measurement problem can lead to less than reliable data to support trading credits. The Agency is currently working with other technical measurement organizations to resolve the measurement uncertainty issues for low-NO<sub>x</sub> measurements and expect to have a revised or new test method for this purpose within the next year. More information will be provided to the State as it becomes available.

The draft rule allows the source owner to install and operate the NO<sub>x</sub> CEMS using either part 75 (appendix H) or part 60 (PS2, PS6, and Appendix F) procedures. The rule further enhances the use of part 60 procedures by increasing the frequency of relative accuracy test audits. The rule must be clear that part 75 procedures apply to all sources in the large EGU and large non-EGU categories.

## 7. EMISSION LIMITS

**a.) Section .1407 Non Utility Boilers and Process Heaters** - The emission limits which are required by this section for oil and gas fired boilers and heaters are very close to uncontrolled emissions levels. Very few additional controls will be required by these limits. By requiring the usage of low NO<sub>x</sub> burners, the State would create a fifty percent reduction in these levels. Also, the time period is for the emission limits must be clarified, (i.e., one-hour; 24-hour; 30 days, etc.).

**b.) Section .1409 Stationary Internal Combustion Engines** - It is unclear what time period is being used for the emission limits. Additionally, the emission limits for rich burn and compression ignition engines appear high. The State should set their emission limits at 2.0 grams per horsepower hour (g/hp-hr) for rich burn and at 3.0 g/hp-hr for compression ignition engines. These levels can be reached by requiring the use of non-selective catalytic reduction and selective catalytic reduction respectively.

**c.) Section .1412 Petition For Alternative Limitations** - The rule allows sources to request an alternative limitation but provides no criteria for determining what the alternative should be. The rule must state that the alternative must be the minimum NO<sub>x</sub>

emission rate achievable by the source using “reasonable effort.” As already provided in the rule, large EGUs and large non-EGUs should not be covered by this petition process.

## **8. DEFINITIONS AND MISCELLANEOUS ISSUES**

**a.) Section .1416(b)** - In this paragraph, the regulation states “After the EPA promulgates revisions...” It must be clarified whether this is a reference to future or past revisions.

**b.) Section .1418(c)** - This paragraph refers to 40 CFR Part 98 (Emissions of NO<sub>x</sub> from Stationary Reciprocating Internal Combustion Engines) which does not yet exist. This must be revised.

**c.) Section .1420(b)(1)** - The term “seasonal energy input” must be defined.