ECONOMIC ANALYSIS:
Incorporation of $PM_{2.5}$ NAAQS into PSD & NA NSR (493)

Contact Information

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6. Title of the Amended Rule	PSD & Sources in Nonattainment Areas
7. Rule Citation	15A NCAC 02D .0530 & 02D .0531
8. Brief Description of the Proposed Rule	Incorporate PM2.5 emissions into North Carolina's NSR program.
9. Rule Category	Division 1 – Regulatory Behavior

Screening Analysis

Rule Actions	General Statute	Yes or No
10. Federal Law Certification Required - Does the proposed rule purport to implement a federal law requiring a certification statement by the rule-making coordinator under?	NCGS 150B-21(f)(1)	Yes
11. Temporary Rules - Does this rule meet the criteria listed relating to temporary rules?	NCGS 150B-21.1	No
12. Emergency Rules - Does this rule meet the criteria relating to emergency rules?	NCGS 150B-21.1(a)	No
13. Establishes or Increases Fees - Is the agency required to complied with the requirements of G.S. 12-3.1?	NCGS 150B-12-3.1 NCGS 150B-21.3(c1)	No
14. State Funds - Does the proposed rule require the expenditure or distribution of funds subject to the Executive Budget Act, Article 1 of Chapter 143?	NCGS 150B-21.4(a)	No
15. NC DOT Analysis - Does the proposed rule affect NC DOT environmental permitting that will result in an increased cost?	NCGS 150B-21.4(a1)	No
16. Local Government Unit Funds - Does the proposed rule affect the expenditures or revenues of a unit of local government?	NCGS 150B-21.4(b)	No
17. Substantial Economic Impact Analysis - Federal Rule Exemption - Does this rule meet the criterion of Federal Exemption found in?	NCGS 150B-21.4(b1)	No
18. Technical Change - Are <u>only</u> technical changes being incorporated such that public notice and rule-making hearings are not required?	NCGS 150B-21.5	No
19. Repeal of Regulatory Deadwood - Is the Rule Obsolete?	NCGS 150B-21.5(b)	No

ECONOMIC ANALYSIS

ADDING $PM_{2.5}$ TO NORTH CAROLINA'S NEW SOURCE REVIEW PROGRAM

I. Executive Summary

The purpose of this analysis is to conduct an evaluation of the costs and benefits that will be incurred by affected facilities to comply with the proposed rule amendments.

Under the federal Clean Air Act, a program known as "New Source Review" (NSR) requires an analysis of emissions from new sources or significant modifications of existing sources to protect the country by meeting the National Ambient Air Quality Standards (NAAQS) for various airborne pollutants. The United State Environmental Protection Agency (USEPA) has added Particulate Matter (PM) that is less than 2.5 microns in diameter ($PM_{2.5}$) to the NAAQS pollutants.

North Carolina (NC) operates a fully approved NSR program authorized through State Rules 15A NCAC 02D .0530, Prevention of Significant Deterioration; and 15A NCAC 02D .0531, Sources in Nonattainment Areas. These two rules are proposed for amendment to incorporate the pollutant $PM_{2.5}$. This amendment action is required by federal law and may impact air quality through a reduction of $PM_{2.5}$. There may be only a few, if any, NA-NSR permits that will be written as a result of incorporating the $PM_{2.5}$ NAAQS into the State's NSR program. Because NC has a fully approved program, more flexibility is allowed by USEPA concerning changes to the application of the NSR program upon an approved demonstration to USEPA.

Precursors are gaseous emissions of compounds that chemically combine with other compounds some time later in the atmosphere to form $PM_{2.5}$. Sulfur dioxide (SO2) and nitrogen oxides (NOx) are significant precursors of PM2.5.

"Significance Level" means pollutants subject to regulation that have a potential to emit (PTE) over a specified emissions threshold. If that threshold is exceeded, then the source is evaluated under the NSR program.

North Carolina proposes to increase the NOx significance level from the federal standard of 40 tons per year (tpy) to 140 tpy. This increase in the proposed significance level reflects the atmospheric chemistry in North Carolina, such that NOx contributes only about one-third of contribution of SO2 to the development of PM2.5 in North Carolina. This knowledge is established through speciated ambient monitoring and modeling throughout the State. Increasing the NOx significance level in North Carolina may reduce the number of costly NSR permit applications that results in findings that NOx controls installed small combustion projects in nonattainment areas for PM2.5 are not economically viable and therefore not required. Additionally, USEPA chose a significance level for NOx of 40 tpy because that is the NOx PTE significance level used in other NAAQSs. They did not find a one-to-one ratio of PM2.5 creation by the precursors SO2 and NOx.

The amendments to 15A NCAC 02D .0530 and .0531 incorporate the addition of $PM_{2.5}$ into the State NSR program as discussed in 40 CFR 51.165 and .166. Specifically, the amendments include:

> **Subparagraph 15A NCAC 02D .0531(a)(3)** is added to incorporate by reference 40 CFR 51.165(a)(1)(x)(A), making $PM_{2.5}$ as a NAAQS in the State Rule. Additionally, the Subparagraph sets the significant level for NOx at 140 tons per year;
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> **Paragraph 15A NCAC 02D .0531(m)** has been technically modified without changing any requirements to better reflect USEPA's rule language; and
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> **Paragraph 15A NCAC 02D .0531(o)** has been modified from changes that are included in the proposed rule amendments published March 1, 2010, for which the public comment period will close April 30, 2010. The phrase, *"...and does not include any subsequent amendments or editions to the referenced material."* was inadvertently recommended for removal during the earlier but active rule action.

These proposed amendments to 15A NCAC 02D .0530 and .0531 will not create a substantial economic impact ($3,000,000 annualized cost per year for all impacted parties) on State or local funds. Nor does it affect environmental permitting of Department of Transportation projects. These changes are not anticipated to cause fewer or more NSR permits to be processed, thus no additional cost or effort by NCDAQ is expected.

II. Background and Rationale for Action

The USEPA's Clean Air Fine Particulate Implementation Rule (72 FR 20586) commonly referred to as the $PM_{2.5}$ Implementation Rule, guides States as they develop State Implementation Plans (SIP) in response to annual or daily $PM_{2.5}$ NAAQS.

USEPA issued final rules governing the implementation of the NSR program for particulate $PM_{2.5}$ on May 8, 2008. The State operates the NSR programs and is required to revise its existing NSR program to conform to the minimum program elements at 40 CFR § 51.166. There is a transitional period that is scheduled by USEPA to end January 1, 2011. This date represents when a final $PM_{2.5}$ modeling rule is anticipated by USEPA to become available.

During the transitional period, NCDAQ will require sources to demonstrate compliance with NAAQS for $PM_{2.5}$ as adopted by NC in 15A NCAC 2D .0400. This demonstration is based on the source's direct $PM_{2.5}$ emissions and uses the most representative available $PM_{2.5}$ ambient monitoring background concentration. The facility will not be required to include off-site inventory during the transitional period.

The NAAQS exist for particulate matter (PM_{10} and $PM_{2.5}$), ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. Each standard is listed as an average ambient air concentration over a defined time period. The 24-hour $PM_{2.5}$ standard is 35 micrograms per cubic meter ($\mu g/m^3$) and an annual standard of 15 $\mu g/m^3$. This standard is an ambient concentration standard

that is not directly related to any annual emission rate. If either or both NAAQS is exceeded, then the area is designated as nonattainment for $PM_{2.5}$.

$PM_{2.5}$ are particles less than 2.5 micrometers in diameter and are interchangeably referred to as "fine" particles. Fine particles in the atmosphere are made up of a complex mixture of directly emitted and secondarily formed components. Common constituents include; sulfate, nitrate, ammonium, elemental carbons, a great variety of organic compounds, and other inorganic materials.

The $PM_{2.5}$ Implementation Rule establishes a hierarchy of precursor pollutants. Precursors are gaseous emissions of compounds that chemically combine with other compounds some time later in the atmosphere to form $PM_{2.5}$. In NC, Sulfur Dioxide (SO_2) and NOx are considered to be significant precursor. USEPA has determined that Volatile Organic Compounds (VOCs) and ammonia (NH3) are presumed not to be significant precursors. NCDAQ proposes that the Rule amendments follow USEPA's assertions and presumptions of significant and insignificant precursor pollutants established in the $PM_{2.5}$ Implementation Rule.

The NSR program consists of two permitting programs. The first permitting program is the Nonattainment New Source Review (NA NSR) program. The second NSR program is called Prevention of Significant Deterioration (PSD). These two programs are contained in NC's SIP in Rules 15A NCAC 02D .0530 and .0531.

NA NSR and PSD permit applications are required from new or existing stationary point sources that plan increased emissions above particular pollutant significant levels as a result of installing a major modification. Major modification means any physical change or change in the method of operation of a major stationary source that would result in a significant emissions increase of a regulated NSR pollutant and a significant net emissions increase of that pollutant from the major stationary source.

The NA NSR program requirements are used for screening permit applications from major sources located in nonattainment areas. A nonattainment area is an area designated by USEPA as not meeting the NAAQS minimal concentration for one or more of the NAAQS pollutants.

Nonattainment areas are always designated as nonattainment for one or more NAAQS such as nonattainment for ozone or nonattainment for VOC and ozone. The area's particular nonattainment designation influences the permit screening process. An NA NSR permit screening determines permit requirements to control the specific NAAQS pollutant for which the area is in nonattainment.

PSD permit applications are screened for major sources located in attainment areas. Attainment areas are areas determined by USEPA as meeting all NAAQS. The PSD program is designed to maintain that classification. However, while the NA NSR screening determines the permit requirements to control the nonattainment NAAQS pollutant, the PSD screening reviews all the NAAQS pollutants.

Offsets

NA NSR permitted facilities are required to obtain emission offsets, which are emission reductions from existing sources in nonattainment area. Offsets are credited to existing facilities that reduce emissions by installing emission control equipment beyond rule requirements; modifying the process, resulting in fewer emissions; or by shutting down one or more emission sources. These offsets ensure that NAAQS emissions within the nonattainment area do not increase and nonattainment area continues to work toward reaching attainment.

USEPA has found that modeling $PM_{2.5}$ generation by precursors in the atmosphere is very difficult. There are many variables in the modeling equations. As a result, states are given leeway to establish precursor offset ratios for SO2 and NOx after appropriate demonstrations. Offset ratios represent ratios of pollutants used to equate precursors to primary $PM_{2.5}$ emissions.

USEPA finalized the offset ratio for direct $PM_{2.5}$ emissions at one for one on a mass basis because the $PM_{2.5}$ program is being implemented under subpart 1 of the Act. EPA does not believe a higher ratio is necessary for $PM_{2.5}$ in each area of the country.

USEPA's presumptive ratios of SO2 to primary $PM_{2.5}$ is 40 to 1 (i.e., 40 SO2 tons for 1 $PM_{2.5}$ ton). The presumptive ratio of NOx to primary $PM_{2.5}$ is 200 to 1 (200 NOx tons for 1 $PM_{2.5}$ tons). NCDAQ recommends that North Carolina use these presumptive offset ratios.

Significant Emission Rates

USEPA's significance levels means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates: for $PM_{2.5}$; 10 tpy of direct $PM_{2.5}$ emissions, 40 tpy of sulfur dioxide emissions, or 40 tpy of nitrogen oxide emissions. Direct $PM_{2.5}$ consists of both solid and condensable $PM_{2.5}$ emissions leaving the stack and entering the atmosphere. Direct $PM_{2.5}$ does not include the $PM_{2.5}$ precursors (SO2 and NOx).

NCDAQ recommends the use of these significance levels with the proposed exception to the USEPA's 40 tons per year (tpy) of NOx emissions. Instead, NCDAQ proposes a significance level of 140 tpy of NOx.

NCDAQ's ambient monitoring data shows sulfate and organic carbon as the main contributors to $PM_{2.5}$, each with approximately 30 percent of the total. Based on the latest (2009) average speciated $PM_{2.5}$ data, nitrates contribute 3.5 times less to the total PM2.5 mass than sulfates. Given the sulfate contributes 3.5 times more than the nitrates to total $PM_{2.5}$, NCDAQ recommends the significance level for NOx be set at 140 tpy (3.5 times higher than 40 tpy).

Additionally, this proposed different significant level for the PM 2.5 precursor NOx is further reinforced by USEPA's offset preferred ratio of NOx to primary $PM_{2.5}$ which is 200 to 1 while the USEPA's preferred offset ratio of SO_2 to primary $PM_{2.5}$ is 40 to 1.

Thus the science demonstrates that in NC the significance level to evaluate major modifications for the $PM_{2.5}$ precursor NOx should be 140 tpy.

Guidance Information

There are facts and assumptions relevant to estimating the costs to the affected parties.

- In calendar year 2009, NCDAQ closed out four NSR permit applications and had three NSR permits under active review.

- There are considerations in the NSR program that reduce the number of facilities required to submit a PSD permit application.

  For Attainment Areas (PSD)

  1. If a minor source for NOx (has the PTE less than 250 tpy of NOx emissions) installs a combustion unit in an attainment area that has the potential to emit 250 tpy NOx, the facility will be redesignated as a major source (Title V facility) for NOx, but will not require a PSD permit until the facility makes a change exceeding the significance levels. This is because under the NSR program, a facility must first be a major facility for one or more NAAQS pollutants when it submits a PSD permit application for a major modification.

  2. If a minor source installs a combustion unit in an attainment area that has the potential to emit less than 250 tpy NOx, it will be continue to be a minor source (non-Title V facility).

  3. A major stationary source[1] must evaluate all NAAQS pollutant significance level when they submit a permit application for a modification.

  4. In attainment areas, if a major stationary facility for NOx (PTE of 250 tpy or more of NOx) installs a combustion unit as a major modification with an emission PTE equal to or greater than 40 tpy of NOx, or a PTE equal to or greater than 10 tpy of direct $PM_{2.5}$ emissions, then the facility becomes a major source for NOx, ozone and $PM_{2.5}$. This is because a PTE increase of 40 tpy of NOx meets the definition of significance level for ozone, and when a source in an attainment area surpasses the significance level for one NAAQS, it is required to evaluate all NAAQS pollutants.

  5. If a minor stationary source in an attainment area agrees to permit conditions (e.g., changing fuel type, reducing firing rates, operating hour restrictions) that

[1] Major source thresholds are as follows: PSD 100 tpy for source categories listed in 40 CFR 51.166(b)(1)(i)(a) and 52.21(b)(1)(i)(a) and 250 tpy for all other source categories. For NA NSR major source thresholds are 100 tpy for all source categories.

would limit NOx to less than 250 tpy, then the facility would be classified as a PSD synthetic minor and therefore not be classified as major facility.

For Nonattainment Areas (NA NSR)

1. If a minor source installs a combustion unit in a nonattainment area for PM2.5 and it has a PTE less than 100 tpy NOx, it will continue to be a minor source (non-Title V facility).

2. A major stationary source (Title V facility) in a nonattainment area is required to evaluate only the NAAQS pollutant significance levels for which the area is in nonattainment when they submit a permit application for a major modification. For example, a facility located in a PM2.5 nonattainment area will review of the PTE of direct PM2.5 (stack solids and condensables) and the PM2.5 precursors SO2 and NOx emissions because these emissions are directly related for increased concentrations of atmospheric PM2.5).

3. A major facility in a nonattainment area would not look at direct PM2.5 emissions in an area that is nonattainment for ozone but in attainment for PM2.5.

- To demonstrate the affect of raising the significance level of NOx from 40 tpy to 140 tpy, a boiler burning #6 fuel oil and sized at 25 million Btu per hour would be classified as a significant source with a potential to emit 40 tons of NOx[2]. However, at a significance level of NOx of 140 tpy, a boiler burning #6 fuel oil is sized at 120 million Btu per hour.[1]

- A similar calculation for boilers burning natural gas has a boiler sized at of 95 million Btu per hour with a potential to emit 40 tons of NOx, while a significance level of 140 tons of NOx burning natural gas is sized at 235 million Btu per hour.

- Raising the NOx significance level from 40 tpy to 140 tpy reflects the demonstrated North Carolina atmospheric contribution to $PM_{2.5}$ by NOx as a precursor, equating it to SO_2.

- Facts On Comparison Of Utility And Industrial Boilers[3]

  1. The average new industrial boiler is a dwarf compared to the utility boiler.

  2. Today's typical utility unit produces 3,500,000 pounds of steam an hour; the industrial boiler 100,000. Most industrial boilers range in size from 10,000 to 1,200,000 pounds of steam per hour.

[2] Calculations made based on potential to emit from http://daq.state.nc.us/permits/spreadsheets/.
[3] http://www.epa.gov/airmarkets/progsregs/nox/docs/bessette.pdf

3. The size of the utility boiler allows it to enjoy significant economies of scale, especially in the control of emissions, which are simply not available to the industrial unit.

4. The smaller industrial boilers are more numerous and tailored to meet the unique needs and constraints of widely varying industrial processes. There are about 70,000 industrial boilers in use today, compared to approximately 4,000 utility boilers.

5. Industrial units produce less than ten percent of the emissions from the nation's boiler population, but they must pay more than utilities to remove a given amount of emissions because of their smaller size and uniqueness.

6. In general, the industrial boiler will have a much lower annual operating load or capacity factor than a typical utility boiler. As a result, any added control costs have a much greater effect on the final output steam cost.

Rule Amendments:

Subparagraph 15A NCAC 02D .0530(b)(4) is added to incorporate Subparagraph 40 CFR 51.166(b)(23)(i), making $PM_{2.5}$ as a NAAQS in the State Rule. Additionally, the Subparagraph increases the significant level for NOx from the federal guidance to 140 tons per year.

Paragraph 15A NCAC 02D .0530(t) has been technically modified without changing any requirements to better reflect USEPA's rule language.

Paragraph 15A NCAC 02D .0530(v) has been modified from changes that are included in the proposed rule amendments published March 1, 2010, for which the public comment period will close April 30, 2010. The phrase, *"...and does not include any subsequent amendments or editions to the referenced material."* was inadvertently recommended for removed during the March 1, 2009 earlier but active rule action.

North Carolina operates the NSR program in the State and reviews all amendments to the NSR program prior to incorporating them into the State's air quality rules. Flexibility is built into the federal NSR program by USEPA due to the variable nature of each state's environment. The proposed amendment to set the significant level for NOx in North Carolina to 140 tpy instead of 40 tpy is an example. In this case, North Carolina will demonstrate that the precursor NOx plays a more minor roll in the formation and concentration of $PM_{2.5}$.

Subparagraph 15A NCAC 02D .0531(a)(3) is added to incorporate by reference 40 CFR 51.165(a)(1)(x)(A), making $PM_{2.5}$ as a NAAQS in the State Rule. Additionally, the Subparagraph sets the significant level for NOx at 140 tons per year.

Paragraph 15A NCAC 02D .0531(m) has been technically modified without changing any requirements to better reflect USEPA's rule language.

Paragraph 15A NCAC 02D .0531(o) has been modified from changes that are included in the proposed rule amendments published March 1, 2010, for which the public comment period will close April 30, 2010. The phrase, *"...and does not include any subsequent amendments or editions to the referenced material."* was inadvertently recommended for removal during the earlier but active rule action.

III. Implementation

These rule amendments are required by federal regulations. There are no additional NSR permits anticipated for two reasons. The significant emission rates for the criteria pollutant particulate matter in attainment areas is 25 tpy of particulate matter emissions (total PM) or 15 tpy of PM10 emissions. In attainment areas, existing PSD permits already capture emission sources with 15 tons of PM_{10}, of which $PM_{2.5}$ is a major subset (i.e., PM2.5 represents greater than 50 percent of total PM10 emissions). Therefore, it is reasonable to expect that major sources for PM10 will have captured at least 50 percent of PM2.5 and would not reach the PM2.5 significance level of 10 tpy.

PSD permit applications reviews in attainment areas include a significance level of 40 tpy of NOx for ozone, so the $PM_{2.5}$ precursor NOx significance level of 140 tpy is captured. The same is true for the $PM_{2.5}$ precursor SO2 that has significance level of 40 tpy unrelated to the $PM_{2.5}$ significance level.

In nonattainment areas, a major stationary source must be located in the nonattainment area and the major modification's emissions meets or exceeds the NAAQS pollutant significance level for the NAAQS that caused the area to be nonattainment. NC currently has one area that is nonattainment area for $PM_{2.5}$. However, that area has been requested by NC to be reclassified as attainment. If the USEPA fails to reclassify the area as attainment for PM2.5, only new installations installed by major sources (Title V facilities) would be affected. However, the data collected and analyzed from ambient monitors in the area meets the USEPA demonstration requirements that should lead to a reclassification of attainment for PM2.5.

In the future, due to the recent number of lower NAAQS concentrations being published, there may be large areas of the State designated as nonattainment area for $PM_{2.5}$. If so, there may be some reluctance on the part of major facilities in new nonattainment areas to expand operations through major modifications. Under such circumstances, the number of NA NSR permit applications required is pure speculation. DAQ has no knowledge of future reductions in ambient concentration standards of the new NAAQS for PM2.5

IV. Identification of the Affected Parties

The affected parties include all State, local governments, or private facilities that are major stationary source proposing major modifications of new or modified emission sources in nonattainment areas for $PM_{2.5}$ with net emission increases or the potential to emit (PTE) of 10 tpy of $PM_{2.5}$ or the $PM_{2.5}$ precursors of 40 tons of SO_2 or 140 tons of NOx.

General Statute Chapter 150B, Administrative Procedure Act, Article 1, General Provisions, § 150B-21.4, Fiscal notes on rules, requires that before an agency publishes in the North Carolina Register the proposed text of a permanent rule change that would have a substantial economic impact and that is not identical to a federal regulation that the agency is required to adopt, the agency must obtain a fiscal note for the proposed rule change from the Office of State Budget and Management or prepare a fiscal note for the proposed rule change and have the note approved by that Office.

The amendments to 15A NCAC 02D .0530 and .0531 incorporates the addition of PM2.5 as an additional NAAQS in the State NSR program as discussed in 40 CFR 51.165 and .166. The only modification to the required federal action is to change the significance level for the PM2.5 precursor NOx from 40 tpy to 140 tpy based on scientific equivalence. This change is not anticipated to cause fewer or more NSR permits to be processed, thus no additional cost or effort by NCDAQ is expected.

V. Establishment of the Baseline

The baseline for this analysis in based on the current PSD and NSR rules found in Rule 15A NCAC 02D .0530, Prevention of Significant Deterioration; and 02D .0531, Sources in Nonattainment Areas, along with the new federal requirements in USEPA's Clean Air Fine Particulate Implementation Rule (72 FR 20586) or 40 CFR 51.165 and 166.

VI. Changes from the Baseline

The change from the baseline is an increase in the significance level on the precursor NOx from the USEPA's significance level of 40 tpy to 140 tpy. This change may reduce the population of major facilities in North Carolina that will be affected by these amendments in nonattainment areas only. The change in the significance level of NOx will not affect the baseline in attainment areas as NOx is triggered as significant for ozone at 40 tpy. However, if the major facility is located in an area of nonattainment for $PM_{2.5}$, then the 140 tpy of NOx would trigger the facility as significant for NA NSR for $PM_{2.5}$.

VII. Estimating the Cost to Affected Parties

EPA developed a range of possible control costs based on the rated size of the various combustion sources for a major facility to install a major modification in a nonattainment area with a significance level equal or exceeding the significance level for the NAAQS which the area is in nonattainment. These costs include consultant fees, permit application fees, offset fees, and suitable emission control equipment for relatively small modifications. There is no practical manner to predict which facilities may require controls based on PSD or NA NRS requirements. These following estimated costs are included to illustrate the types of control measures that could be installed and the range of costs that may be incurred at affected facilities. If and when such controls are necessary, they are the result federal regulatory baseline requirements and are not directly attributable to these proposed rule amendments to include PM2.5 in North Carolina's SIP.

Examples of Capital Investment Costs for various Control Options		Total Capital Investment, $		
Control option	**Pollutants controlled**	**Large**	**Medium**	**Small**
1. Packed-bed scrubber	HCl, SO2	$452,658	$327,726	$276,618
2. Fabric filter	Pb, Cd, Hg, **PM**, CDD/CDF	$1,017,892	$805,145	$718,112
3. Dry injection fabric filter	HCl, Pb, Cd, Hg, **PM**, CDD/CDF, SO2	$1,363,508	$1,074,716	$956,574
4. Selective noncatalytic reduction	NOx	$585,709	$368,048	$186,362

Examples of Annul Operating Costs for various Control Options		Annual Costs, $/yr		
Control option	**Pollutants controlled**	**Large**	**Medium**	**Small**
1. Packed-bed scrubber	HCl, SO2	$104,101	$65,687	$61,608
2. Fabric filter	Pb, Cd, Hg, **PM**, CDD/CDF	$267,793	$160,542	$161,434
3. Dry injection fabric filter	HCl, Pb, Cd, Hg, **PM**, CDD/CDF, SO2	$347,053	$206,105	$201,708
4. Selective noncatalytic reduction	NOx	$67,918	$41,529	$22,910

Emission control technologies that can be used to reduce direct PM emissions and PM precursors NOx and SO2 include: 1) packed-bed wet scrubbers, 2) fabric filters, 3) dry scrubbers, and 4) selective noncatalytic reduction (SNCR). Pollutants that are controlled by these add on control devices include: hydrogen chloride (HCl), lead (Pb), cadmium (Cd), mercury (Hg), particulate matter (PM), dioxins/furans (CDD/CDF), nitrogen oxides (NOx), and sulfur dioxide (SO2).

USEPA calculated model capital investment expenditures plus annual operating costs for the emission controls that were estimated in units of dollars per year ($/yr). The following is a list of options used to achieve emission reductions that illustrate a range of cost estimates developed by the USEPA. All control measure costs are herein reported using 2007 dollars in order to remain consistent with the USEPA cost manual methodology. The Chemical Engineering Plant Cost Index (CEPCI) has been increasing by about eight percent annually since 2004.

1. Packed-bed wet scrubbers are especially effective at reducing emissions of acid gases such as HCl, and also provide limited control of PM, metals, and SO2 (if present at high enough concentrations). These wet scrubbers can be installed either alone or after a dry scrubber/ fabric filter. The wet scrubber capital costs were updated to 2007 dollars using the Chemical Engineering Plant Cost Index (CEPCI) and range from approximately $260,000 to $453,000.

The wet scrubber annual costs were updated to 2007 dollars using current estimates for unit costs and labor rates and range from approximately $51,600/yr to $104,000/yr.

2. Fabric filters can be used to improve the PM (and associated particulate metals) emission control. Fabric filters can be installed either alone or before a wet scrubber. The fabric filter capital costs from these algorithms were updated to 2007 dollars using the CEPCI and range from approximately $689,000 to $1.02 million.

The fabric filter annual costs were updated to 2007 dollars using current estimates for unit costs and labor rates and range from approximately $130,000/yr to $268,000/yr.

3. Dry scrubbers can be used in concert with a fabric filter to reduce emissions of PM, as well as emissions of acid gases such as HCl. The predominant type of dry system used is a dry sorbent injection system followed by a fabric filter (DIFF). The DIFF capital costs from these algorithms were updated to 2007 dollars using the CEPCI and range from approximately $917,000 to $1.36 million.

The DIFF annual costs were updated to 2007 dollars using current estimates for unit costs and labor rates and range from approximately $168,000/yr to $347,000/yr.
4. Selective noncatalytic reduction. SNCR systems have been used for NOX emission control on industrial boilers, electric utility steam generators, thermal incinerators, and municipal solid waste energy recovery facilities. The SNCR capital costs from these algorithms were updated to 2007 dollars using the CEPCI and range from approximately $186,000 to $586,000.

The SNCR annual costs were updated to 2007 dollars using current estimates for unit costs and labor rates and range from approximately $22,900/yr to $67,900/yr.

The USEPA developed the following estimated annual permit burden costs by sources and permitting authorities for PSD permitting. The cost of compliance for BACT for these sources was not included in these estimates due to a lack of available data. The estimated reporting and recordkeeping cost for new industrial sources to obtain permits is estimated to be $84,500 for a modifying PSD industrial source and $59,200 for a modifying commercial or multi-family residential source. New PSD sources required to obtain a title V permit increasing these costs to $130,900 per permit for new industrial sources and to $82,300 per permit for new commercial or multi-family residential sources.

USEPA estimated the cost each industrial source $46,400 and each commercial or residential source $23,200 to complete the NSR permit application and take other associated actions; and it would cost each permitting authority, on average, $19,688 to process the industrial source permit and $9,844 to process the commercial or residential source permit.

There is a permit fee structure in place to collect funds by the State of North Carolina to administer the title V program. If a title V facility is located in an area classified as nonattainment, then it pays $3,500 in annual permit fees. Plus there are additional permit application fees that are applicable to Title V for either PSD or NSR/NAA currently set at $13,488. When both Title V PSD and NSR/NAA apply this additional permit application fee increases to $26,235. Discussion of these additional fees is included to provide a sense of the location consequence to an existing facility or a potential new facility with regard to attainment status of the NAAQS. These fees are set to offset the additional effort by the permitting agency to process and review such sources. It is not possible to predict the number of facilities that may someday be affected by a change in attainment status or where it may occur.

VIII. Benefits

The change from the baseline is to increase the significance level of the $PM_{2.5}$ precursor NOx from 40 tpy to 140 tpy and is based on science. This increase is based on State ambient monitor data that shows NOx as a precursor to $PM_{2.5}$ to be less effective than the $PM_{2.5}$ precursor SO2 by

a factor of 3.5 (3.5 times 40 tpy NOx = 140 tpy). Additionally, USEPA's offset preferred ratio of NOx to primary $PM_{2.5}$ is 200 to 1 while the USEPA's preferred offset ratio of SO_2 to primary $PM_{2.5}$ is 40 to 1.

Thus in NC, the demonstration to be presented to USEPA will show that the $PM_{2.5}$ concentrations generated by NOx as a precursor to $PM_{2.5}$ is equivalent to USEPA's significance NOx level in both 40 CFR 51.165 and 166.

Benefits to the public from having a higher significance level for the precursor to $PM_{2.5}$ NOx as the area strives toward attainment is a possible increase in employment in a nonattainment area as the area strives toward attainment. Public safety is met as the equivalent standards for the generation of $PM_{2.5}$ from precursors are the same as USEPA's standard.

IX. Conclusion

For the reasons iterated above, there may be only very few, if any, NSR permits that will be written as a result of incorporating the $PM_{2.5}$ NAAQS into the State's NSR program. The proposed increase of the NOx significance level from 40 tpy to 140 tpy may be advantageous to nonattainment areas for $PM_{2.5}$ under special circumstance when a Title V facility's major modification has $PM_{2.5}$ emissions less than 10 tpy and NOx emissions are less than 140 tpy.

This fiscal note does not show a substantial economic impact on State or local funds nor does it affect environmental permitting of Department of Transportation projects. The only modification to the required federal action is to change the significance level for the $PM_{2.5}$ precursor Nitrogen Oxide (NOx) from 40 tpy to 140 tpy based on scientific equivalence. This change is not anticipated to cause fewer or more NSR permits to be processed, thus no additional cost or effort by NCDAQ is expected.

This fiscal note does not show a substantial economic impact on a unit of local government or state funds. Nor does it affect environmental permitting of Department of Transportation projects. No private sector compliance expenditures were directly identified. The marginal effect of these amendments on the regulated community, and units of local government or State implementing agencies will not result in substantial economic impacts as defined in North Carolina's Administrative Procedures Act in NC *§ 150B-21.4 Fiscal notes on rules*. The term "substantial economic impact" means an aggregate financial impact on all persons affected of at least three million dollars ($3,000,000) in a 12-month period. The Office of State Budget and Management (OSBM) recommends their review of this economic analysis due to "significant" potential future impacts, while recognizing that current impacts estimates are not considered substantial. Therefore, the cost or cost-savings due to these rule amendments are negligible for the regulated community, and the State or local government agencies implementing these rules.

NOTE: Text shown in italics reflects changes that are included in the proposed rule published 03-01-2010 on OAH's website for which the public comment period closes 04-30-2010.

15A NCAC 02D .0530 is proposed for amendment as follows:

15A NCAC 02D .0530 PREVENTION OF SIGNIFICANT DETERIORATION

(a) The purpose of the Rule is to implement a program for the prevention of significant deterioration of air quality as required by 40 CFR 51.166.

(b) For the purposes of this Rule the definitions contained in 40 CFR 51.166(b) and 40 CFR 51.301 shall apply except the definition of "baseline actual emissions."

(1) "Baseline actual emissions" means the rate of emissions, in tons per year, of a regulated new source review (NSR) pollutant, as determined in accordance with Parts (A) through (C) of this Subparagraph:

(A) For an existing emissions unit, baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding the date that a complete permit application is received by the Division for a permit required under this Rule. The Director shall allow a different time period, not to exceed 10 years immediately preceding the date that a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation. For the purpose of determining baseline actual emissions, the following shall apply:

(i) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(ii) The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above any emission limitation that was legally enforceable during the consecutive 24-month period.

(iii) For an existing emission unit (other than an electric utility steam generating unit), the average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply. However, if the State has taken credit in an attainment demonstration or maintenance plan consistent with the requirements of 40 CFR 51.165(a)(3)(ii)(G) for an emission limitation that is part of a maximum achievable control technology standard that the Administrator proposed or promulgated under part 63 of the Code of Federal Regulations, the baseline actual emissions shall be adjusted to account for such emission reductions.

(iv) For an electric utility steam generating unit, the average rate shall be adjusted downward to reflect any emissions reductions under G. S. 143-215.107D and for which cost recovery is sought pursuant to G. S. 62-133.6.

(v) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period shall be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24-month period for each regulated NSR pollutant can be used for each regulated NSR pollutant.

(vi) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by Subparts (ii) and (iii) of this Part.

(B) For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit's potential to emit.

(C) For a plantwide applicability limit (PAL) for a stationary source, the baseline actual emissions shall be calculated for existing emissions units in accordance with the

procedures contained in Part (A) of this Subparagraph, and for a new emissions unit in accordance with the procedures contained in Part (B) of this Subparagraph.

(2) In the definition of "net emissions increase," the reasonable period specified in 40 CFR 51.166(b)(3)(ii) shall be seven years.

(3) The limitation specified in 40 CFR 51.166(b)(15)(ii) shall not apply.

(4) Particulate matter $PM_{2.5}$ significant levels in 40 CFR 51.166(b)(23)(i) are incorporated by reference except as otherwise provided in this Rule. A net emission increase or the potential of a source to emit nitrogen oxide emissions shall be significant if the rate of emissions would equal or exceed 140 tons per year. Sulfur dioxide and nitrogen oxides are precursor to $PM_{2.5}$ in all attainment and unclassifiable areas. Volatile organic compounds and ammonia are not significant precursors to $PM_{2.5}$.

(c) All areas of the State shall be classified as Class II except that the following areas are Class I:

(1) Great Smoky Mountains National Park;

(2) Joyce Kilmer Slickrock National Wilderness Area;

(3) Linville Gorge National Wilderness Area;

(4) Shining Rock National Wilderness Area;

(5) Swanquarter National Wilderness Area.

(d) Redesignations of areas to Class I or II may be submitted as state proposals to the Administrator of the Environmental Protection Agency (EPA), if the requirements of 40 CFR 51.166(g)(2) are met. Areas may be proposed to be redesignated as Class III, if the requirements of 40 CFR 51.166(g)(3) are met. Redesignations may not, however, be proposed which would violate the restrictions of 40 CFR 51.166(e). Lands within the boundaries of Indian Reservations may be redesignated only by the appropriate Indian Governing Body.

(e) In areas designated as Class I, II, or III, increases in pollutant concentration over the baseline concentration shall be limited to the values set forth in 40 CFR 51.166(c). However, concentration of the pollutant shall not exceed standards set forth in 40 CFR 51.166(d).

(f) Concentrations attributable to the conditions described in 40 CFR 51.166(f)(1) shall be excluded in determining compliance with a maximum allowable increase. However, the exclusions referred to in 40 CFR 51.166(f)(1)(i) or (ii) shall be limited to five years as described in 40 CFR 51.166(f)(2).

(g) Major stationary sources and major modifications shall comply with the requirements contained in 40 CFR 51.166(i) and (a)(7) and by extension in 40 CFR 51.166(j) through (o) and (w). The transition provisions allowed by 40 CFR 52.21 (i)(11)(i) and (ii) and (m)(1)(vii) and (viii) are hereby adopted under this Rule. The minimum requirements described in the portions of 40 CFR 51.166 referenced in this Paragraph are hereby adopted as the requirements to be used under this Rule, except as otherwise provided in this Rule. Wherever the language of the portions of 40 CFR 51.166 referenced in this Paragraph speaks of the "plan," the requirements described therein shall apply to the source to which they pertain, except as otherwise provided in this Rule. Whenever the portions of 40 CFR 51.166 referenced in this Paragraph provide that the State plan may exempt or not apply certain requirements in certain circumstances, those exemptions and provisions of nonapplicability are also hereby adopted under this Rule. However, this provision shall not be interpreted so as to limit information that may be requested from the owner or operator by the Director as specified in 40 CFR 51.166(n)(2).

(h) New natural gas-fired electrical utility generating units *for which cost recovery is sought pursuant to G. S. 62-133.6* shall install best available control technology for NO_X and ~~SO_2.~~ SO_2 *, regardless of applicability of the rest of this rule.*

(i) 40 CFR 51.166(w)(10)(iv)(a) is changed to read: "If the emissions level calculated in accordance with Paragraph (w)(6) of this Section is equal to or greater than 80 percent of the PAL [plant wide applicability limit] level, the Director shall renew the PAL at the same level." 40 CFR 51.166(w)(10)(iv)(b) is not incorporated by reference.

(j) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the sources to which this Rule applies shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500.

(k) When a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification to emit a pollutant, such as a restriction on hours of operation, then the provisions of this Rule shall apply to the source or modification as though construction had not yet begun on the source or modification.

(l) The provisions of 40 CFR 52.21(r)(2) regarding the period of validity of approval to construct are incorporated by reference except that the term "Administrator" is replaced with "Director".

(m) Volatile organic compounds exempted from coverage in 40 CFR 51.100(s) shall also be exempted when calculating source applicability and control requirements under this Rule.

(n) The degree of emission limitation required for control of any air pollutant under this Rule shall not be affected in any manner by:

(1) that amount of a stack height, not in existence before December 31, 1970, that exceeds good engineering practice; or

(2) any other dispersion technique not implemented before then.

(o) A substitution or modification of a model as provided for in 40 CFR 51.166(l) shall be subject to public comment procedures in accordance with the requirements of 40 CFR 51.102.

(p) Permits may be issued on the basis of innovative control technology as set forth in 40 CFR 51.166(s)(1) if the requirements of 40 CFR 51.166(s)(2) have been met, subject to the condition of 40 CFR 51.166(s)(3), and with the allowance set forth in 40 CFR 51.166(s)(4).

(q) If a source to which this Rule applies impacts an area designated Class I by requirements of 40 CFR 51.166(e), notice to EPA will be provided as set forth in 40 CFR 51.166(p)(1). If the Federal Land Manager presents a demonstration described in 40 CFR 51.166(p)(3) during the public comment period or public hearing to the Director and if the Director concurs with this demonstration, the permit application shall be denied. Permits may be issued on the basis that the requirements for variances as set forth in 40 CFR 51.166(p)(4), (p)(5) and (p)(7), or (p)(6) and (p)(7) have been satisfied.

(r) A permit application subject to this Rule shall be processed in accordance with the procedures and requirements of 40 CFR 51.166(q). Within 30 days of receipt of the application, applicants shall be notified if the application is complete as to initial information submitted. Commencement of construction before full prevention of significant deterioration approval is obtained constitutes a violation of this Rule.

(s) Approval of an application with regard to the requirements of this Rule shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of other rules of this Subchapter or Subchapter 02Q of this Title and any other requirements under local, state, or federal law.

(t) When a source or modification is subject to this Rule ~~may affect the visibility of a Class I area named in Paragraph (c) of this Rule,~~ the following procedures shall apply:

(1) When a source or modification may affect visibility of a Class I area named in Paragraph (c) of this Rule, ~~The~~ the Director shall provide written notification to all affected Federal Land Managers within 30 days of receiving the permit application or within 30 days of receiving advance notification of an application. The notification shall be at least 30 days prior to the publication of notice for public comment on the application. The notification shall include a copy of all information relevant to the permit application including an analysis provided by the source of the potential impact of the proposed source on visibility.

(2) The Director shall consider any analysis concerning visibility impairment performed by the Federal Land Manager if the analysis is received within 30 days of notification. If the Director finds that the analysis of the Federal Land Manager fails to demonstrate to his satisfaction that an adverse impact on visibility will result in the Class I area, the Director shall provide in the notice of public hearing on the application, an explanation of his decision or notice as to where the explanation can be obtained.

(3) The Director may require monitoring of visibility in or around any Class I area by the proposed new source or modification when the visibility impact analysis indicates possible visibility impairment.

(u) If the owner or operator of a source is using projected actual emissions to avoid applicability of prevention of significant deterioration requirements, the owner or operator shall notify the Director of the modification before beginning actual construction. The notification shall include:

(1) a description of the project,

(2) identification of sources whose emissions could be affected by the project,

(3) the calculated projected actual emissions and an explanation of how the projected actual emissions were calculated, including identification of emissions excluded by 40 CFR 51.166(b)(40)(ii)(c),

(4) the calculated baseline actual emissions and an explanation of how the baseline actual emissions were calculated, and

(5) any netting calculations if applicable.

If upon reviewing the notification, the Director finds that the project will cause a prevention of significant deterioration evaluation, then the Director shall notify the owner or operator of his findings. The owner or operator shall not make the modification until it has received a permit issued pursuant to this Rule. If a permit revision is not

required pursuant to this rule, the owner or operator shall maintain records of annual emissions in tons per year, on a calendar year basis related to the modifications for 10 years following resumption of regular operations after the change if the project involves increasing the emissions unit's design capacity or its potential to emit the regulated NSR pollutant; otherwise these records shall be maintained for five years following resumption of regular operations after the change. The owner or operator shall submit a report to the director within 60 days after the end of each year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a) through (c). The owner or operator shall make the information documented and maintained under this Paragraph available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).

(v) The reference to the Code of Federal Regulations (CFR) in this Rule are incorporated by reference unless a specific reference states otherwise. The version of the Code of Federal Regulations incorporated in this Rule is that as of ~~June 13, *2007*~~ *2007.* ~~2007.~~ May 16, 2008 ~~*except those provisions noticed as stayed in 69 FR 40274, and does not include any subsequent amendments or editions to the referenced material.*~~ and does not include any subsequent amendments or editions to the referenced material.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3); 143-215.107(a)(5); 143-215.107(a)(7); 143-215.108(b); 150B-21.6;*
Eff. June 1, 1981;
Amended Eff. December 1, 1992; August 1, 1991;
Temporary Amendment Eff. March 8, 1994, for a period of 180 days or until the permanent rule is effective, whichever is sooner;
Amended Eff. _____; May 1, 2008; July 28, 2006; July 1, 1997; February 1, 1995; July 1, 1994.

NOTE: Text shown in italics reflects changes that are included in the proposed rule published 03-01-2010 on OAH's website for which the public comment period closes 04-30-2010.

15A NCAC 02D .0531 is proposed for amendment as follows:

15A NCAC 02D .0531 SOURCES IN NONATTAINMENT AREAS

(a) For the purpose of this Rule the definitions contained in 40 CFR 51.165(a)(1) and 40 CFR 51.301 shall apply except the definition of "baseline actual emissions."

(1) "Baseline actual emissions" means the rate of emissions, in tons per year, of a regulated new source review (NSR) pollutant, as determined in accordance with Parts (A) through (C) of this Subparagraph:

(A) For an existing emissions unit, baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding the date that a complete permit application is received by the Division for a permit required under this Rule. The Director shall allow a different time period, not to exceed 10 years immediately preceding the date that a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation. For the purpose of determining baseline actual emissions, the following shall apply:

(i) The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.

(ii) The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above any emission limitation that was legally enforceable during the consecutive 24-month period.

(iii) For an existing emission unit (other than an electric utility steam generating unit), the average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply. However, if the State has taken credit in an attainment demonstration or maintenance plan consistent with the requirements of 40 CFR 51.165(a)(3)(ii)(G) for an emission limitation that is part of a maximum achievable control technology standard that the Administrator proposed or promulgated under part 63 of the Code of Federal Regulations, the baseline actual emissions shall be adjusted to account for such emission reductions.

(iv) For an electric utility steam generating unit, the average rate shall be adjusted downward to reflect any emissions reductions under G.S. 143-215.107D and for which cost recovery is sought pursuant to G.S. 62-133.6.

(v) For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period shall be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24-month period for each regulated NSR pollutant.

(vi) The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by Subparts (ii) and (iii) of this Part.

(B) For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit's potential to emit.

(C) For a plantwide applicability limit (PAL) for a stationary source, the baseline actual emissions shall be calculated for existing emissions units in accordance with the procedures contained in Part (A) of this Subparagraph, and for a new emissions unit in accordance with the procedures contained in Part (B) of this Subparagraph.

(2) In the definition of "net emissions increase," the reasonable period specified in 40 CFR 51.165(a)(1)(vi)(C)(1) shall be seven years.

(3) Particulate matter $PM_{2.5}$ significant levels in 40 CFR 51.165(a)(1)(x)(A) are incorporated by reference except as otherwise provided in this Rule. A net emission increase or the potential of a source to emit nitrogen oxide emissions shall be significant if the rate of emissions would equal or exceed 140 tpy. Sulfur dioxide and nitrogen oxides are precursor to $PM_{2.5}$ in all nonattainment areas. Volatile organic compounds and ammonia are not significant precursors to $PM_{2.5}$.

(b) Redesignation to Attainment. If any county or part of a county to which this Rule applies is later designated in 40 CFR 81.334 as attainment ~~*for ozone or carbon monoxide*~~, all sources in that county subject to this Rule before the redesignation date shall continue to comply with this Rule.

(c) Applicability. 40 CFR 51.165(a)(2) is incorporated by reference. This Rule applies to *areas designated as nonattainment in 40 CFR 81.334, including any subsequent amendments or editions.*
~~*the following areas:*~~

~~*(1) Ozone Nonattainment Areas, to major stationary sources and major modifications of sources of volatile organic compounds or nitrogen oxides for which construction commences after the area in which the source is located is designated according to Part (A) or (B) of this Subparagraph:*~~

~~*(A) areas designated in 40 CFR 81.334 as nonattainment for ozone, or*~~

~~*(B) any of the following areas and in that area only when the Director notices in the North Carolina Register that the area is in violation of the ambient air quality standard for ozone:*~~

~~*(i) Charlotte/Gastonia, consisting of Mecklenburg and Gaston Counties; with the exception allowed under Paragraph (l) of this Rule;*~~

~~*(ii) Greensboro/Winston-Salem/High Point, consisting of Davidson, Forsyth, and Guilford Counties and that part of Davie County bounded by the Yadkin River, Dutchmans Creek, North Carolina Highway 801, Fulton Creek and back to Yadkin River; or*~~

~~*(iii) Raleigh/Durham, consisting of Durham and Wake Counties and Dutchville Township in Granville County.*~~

~~*Violations of the ambient air quality standard for ozone shall be determined according to 40 CFR 50.9.*~~

~~*(2) Carbon Monoxide Nonattainment Areas. This Rule applies to major stationary sources and major modifications of sources of carbon monoxide located in areas designated in 40 CFR 81.334 as nonattainment for carbon monoxide and for which construction commences after the area in which the source is located is listed in 40 CFR 81.334 as nonattainment for carbon monoxide.*~~

(d) This Rule is not applicable to:

(1) complex sources of air pollution regulated only under Section .0800 of this Subchapter and not under any other rule in this Subchapter;

(2) emission of pollutants at the new major stationary source or major modification located in the nonattainment area that are pollutants other than the pollutant or pollutants for which the area is nonattainment. (A major stationary source or major modification that is major for volatile organic compounds or nitrogen oxides is also major for ozone.);

(3) emission of pollutants for which the source or modification is not major;

(4) a new source or modification that qualifies for exemption under the provision of 40 CFR 51.165(a)(4); or

(5) emission of compounds listed under 40 CFR 51.100(s) as having been determined to have negligible photochemical reactivity except carbon monoxide.

(e) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500.

(f) To issue a permit to a source to which this Rule applies, the Director shall determine that the source meets the following requirements:

(1) The new major stationary source or major modification will emit the nonattainment pollutant at a rate no more than the lowest achievable emission rate;

(2) The owner or operator of the proposed new major stationary source or major modification has demonstrated that all major stationary sources in the State that are owned or operated by this person (or any entity controlling, controlled by, or under common control with this person) are subject to emission limitations and are in compliance, or on a schedule for compliance that is federally enforceable or contained in a court decree, with all applicable emission limitations and

standards of this Subchapter that EPA has authority to approve as elements of the North Carolina State Implementation Plan for Air Quality;

(3) The owner or operator of the proposed new major stationary source or major modification will obtain sufficient emission reductions of the nonattainment pollutant from other sources in the nonattainment area so that the emissions from the new major source and associated new minor sources will be less than the emissions reductions by a ratio of at least 1.00 to 1.15 for volatile organic compounds and nitrogen oxides and by a ratio of less than one to one for carbon monoxide. The baseline for this emission offset shall be the actual emissions of the source from which offset credit is obtained. Emission reductions shall not include any reductions resulting from compliance (or scheduled compliance) with applicable rules in effect before the application. The difference between the emissions from the new major source and associated new minor sources of carbon monoxide and the emission reductions shall be sufficient to represent reasonable further progress toward attaining the *National* Ambient Air Quality Standards. The emissions reduction credits shall also conform to the provisions of 40 CFR 51.165(a)(3)(ii)(A) through (G) and (J); and

(4) The North Carolina State Implementation Plan for Air Quality is being carried out for the nonattainment area in which the proposed source is located.

(g) New natural gas-fired electrical utility generating units *for which cost recovery is sought pursuant to G. S. 62-133.6* shall install lowest achievable emission rate technology for NO_X and ~~SO_2.~~ *SO_2, regardless of the applicability of the rest of this Rule.*

(h) 40 CFR 51.165(f) is incorporated by reference except that 40 CFR 51.165(f)(10)(iv)(A) is changed to read: "If the emissions level calculated in accordance with Paragraph (f)(6) of this Section is equal to or greater than 80 percent of the PAL level, the Director shall renew the PAL at the same level." 40 CFR 51.165(f)(10)(iv)(B) is not incorporated by reference.

(i) When a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation established after August 7, 1980, on the capacity of the source or modification to emit a pollutant, such as a restriction on hours of operation, then the provisions of this Rule shall apply to the source or modification as though construction had not yet begun on the source or modification.

(j) To issue a permit to a source of a nonattainment pollutant, the Director shall determine, in addition to the other requirements of this Rule, that an analysis (produced by the permit applicant) of alternative sites, sizes, production processes, and environmental control techniques for the source demonstrates that the benefits of the source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

(k) The provisions of 40 CFR 52.21(r)(2) regarding the period of validity of approval to construct are incorporated by reference except that the term "Administrator" is replaced with "Director".

(l) Approval of an application regarding the requirements of this Rule shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of other rules of this Chapter and any other requirements under local, state, or federal law.

(m) Except as provided in 40 CFR 52.28(c)(6), ~~When~~ for a source or modification subject to this Rule ~~may affect the visibility of a Class I area named in Paragraph (c) of Rule .0530 of this Section,~~ the following procedures shall be followed:

(1) The owner or operator of the source shall provide an analysis of the impairment to visibility that would occur because of the source or modification and general commercial, industrial and other growth associated with the source or modification;

(2) When a source or modification may affect the visibility of in a Class I area named in Paragraph (c) of Rule .0530 of this Section, ~~The~~ the Director shall provide written notification to all affected Federal Land Managers within 30 days of receiving the permit application or within 30 days of receiving advance notification of an application. The notification shall be at least 30 days before the publication of the notice for public comment on the application. The notification shall include a copy of all information relevant to the permit application including an analysis provided by the source of the potential impact of the proposed source on visibility;

(3) The Director shall consider any analysis concerning visibility impairment performed by the Federal Land Manager if the analysis is received within 30 days of notification. If the Director finds that the analysis of the Federal Land Manager fails to demonstrate to his satisfaction that an adverse impact on visibility will result in the Class I area, the Director shall provide in the notice

of public hearing on the application, an explanation of his decision or notice where the explanation can be obtained;

(4) The Director shall issue permits only to those sources whose emissions will be consistent with making reasonable progress toward the national goal of preventing any future, and remedying any existing, impairment of visibility in mandatory Class I areas when the impairment results from manmade air pollution. In making the decision to issue a permit, the Director shall consider the cost of compliance, the time necessary for compliance, the energy and nonair quality environmental impacts of compliance, and the useful life of the source; and

(5) The Director may require monitoring of visibility in or around any Class I area by the proposed new source or modification when the visibility impact analysis indicates possible visibility impairment.

The requirements of this Paragraph shall not apply to nonprofit health or nonprofit educational institutions.

~~*(n) Paragraphs (f) and (j) of this Rule shall not apply to a new major stationary source or a major modification of a source of volatile organic compounds or nitrogen oxides for which construction commences after the area in which the source is located has been designated according to Part (c)(1)(B) of this Rule and before the area is designated in 40 CFR 81.334 as nonattainment for ozone if the owner or operator of the source demonstrates, using the Urban Airshed Model (UAM), that the new source or modification will not contribute to or cause a violation. The model used shall be that maintained by the Division. The Division shall run the model only after the permit application has been submitted. The permit application shall be incomplete until the modeling analysis is completed. The owner or operator of the source shall apply such degree of control and obtain such offsets necessary to demonstrate the new source or modified source will not cause or contribute to a violation.*~~

~~*(o)*~~ *(n)* If the owner or operator of a source is using projected actual emissions to avoid applicability of nonattainment new source review, the owner or operator shall notify the director of the modification before beginning actual construction. The notification shall include:

(1) a description of the project,

(2) identification of sources whose emissions could be affected by the project,

(3) the calculated projected actual emissions and an explanation of how the projected actual emissions were calculated, including identification of emissions excluded by 40 CFR 51.165(a)(1)(xxviii)(B)(3),

(4) the calculated baseline actual emissions and an explanation of how the baseline actual emissions were calculated, and

(5) any netting calculations if applicable.

If upon reviewing the notification, the Director finds that the project will cause a nonattainment new source review evaluation, then the Director shall notify the owner or operator of his findings. The owner or operator shall not make the modification until it has received a permit issued pursuant to this Rule. If a permit revision is not required pursuant to this Rule, the owner or operator shall maintain records of annual emissions in tons per year on a calendar year basis related to the modifications for 10 years following resumption of regular operations after the change if the project involves increasing the emissions unit's design capacity or its potential to emit the regulated NSR pollutant; otherwise these records shall be maintained for five years following resumption of regular operations after the change. The owner or operator shall submit a report to the director within 60 days after the end of each year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.165(a)(6)(v)(A) through (C). The owner or operator shall make the information documented and maintained under this Paragraph available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).

~~*(p)*~~*(o) The reference to the Code of Federal Regulations (CFR) in this Rule are incorporated by reference unless a specific reference states otherwise. Except for 40 CFR 81.334,* ~~**The**~~ *the* **version of the** ~~**Code of Federal Regulations**~~ CFR **incorporated in this Rule is that as of** ~~**June 13, *2007***~~ ***2007.*** ~~2007.~~ May 16, 2008 ~~***except those provisions noticed as stayed in 69 FR 40274, and does not include any subsequent amendments or editions to the referenced material.***~~ and does not include any subsequent amendments or editions to the referenced material.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5); 143-215.108(b);*
Eff. June 1, 1981;
Amended Eff. December 1, 1993; December 1, 1992;
Temporary Amendment Eff. March 8, 1994 for a period of 180 days or until the permanent rule is effective, whichever is sooner;
Amended Eff. _____: May 1, 2008; May 1, 2005; July 1, 1998; July 1, 1996; July 1, 1995; July 1, 1994.