

## CHAPTER 3

### FORSYTH COUNTY AIR QUALITY CONTROL<sup>1</sup>

#### SUBCHAPTER 3D - AIR POLLUTION CONTROL REQUIREMENTS

#### SECTION .0500 - EMISSION CONTROL STANDARDS

##### Section .0501 Compliance with Emission Control Standards

(a) Purpose and Scope. The purpose of this Rule is to assure orderly compliance with emission control standards found in this Section. This Rule shall apply to all air pollution sources, both combustion and non-combustion.

(b) In determining compliance with emission control standards, means shall be provided by the owner to allow periodic sampling and measuring of emission rates, including necessary ports, scaffolding and power to operate sampling equipment; and upon the request of the Forsyth County Environmental Affairs Department, data on rates of emissions shall be supplied by the owner.

(c) Testing to determine compliance shall be in accordance with the following procedures, except as may be otherwise required in Rules .0524, .0606, .1110, or .1111 of this Subchapter.

- (1) Method 1 of Appendix A of 40 CFR Part 60 shall be used to select a suitable site and the appropriate number of test points for the following situations:
  - (A) particulate testing,
  - (B) velocity and volume flow rate measurements;
  - (C) testing for acid mist or other pollutants which occur in liquid droplet form,
  - (D) any sampling for which velocity and volume flow rate measurements are necessary for computing final test results, and
  - (E) any sampling which involves a sampling method which specifies isokinetic sampling. (Isokinetic sampling is sampling in which the velocity of the gas at the point of entry into the sampling nozzle is equal to the velocity adjacent to the nozzle.)

Method 1 shall be applied as written with the following clarifications: Testing installations with multiple breechings may be accomplished by testing the discharge stack(s) to which the multiple breechings exhaust. If the multiple breechings are individually tested, then Method 1 shall be applied to each breeching individually. The Director or his designee may approve a test when test ports in a duct are located less than two diameters downstream from any disturbance (fan, elbow, change in diameter, or any other physical feature that may disturb the gas flow) or one-half diameter upstream from any disturbance, if the tester demonstrates to the Director, or his designee, that [the duct cannot be modified using all reasonable means possible]<sup>2</sup> to meet the

specifications of Method 1 or testing at an alternative location is not feasible.

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<sup>1</sup>**Cross references**--Buildings and building regulations, Ch. 7; erosion control, Ch. 9; fire prevention and protection, Ch. 10; zoning ordinance, Ch. 23.

**State law references**--Air pollution control, G.S. §143-215.105 *et seq.*; authority of Board of County Commissioners to establish, administer, and enforce a local air pollution control program. G.S. §143-215.112(c); authority to levy taxes to maintain and administer such program, G.S. §153A-149(c)(3).

<sup>2</sup>See 3B .0102(a)(3); “locating test ports beyond these distances are impossible because the duct cannot be modified” changed to “the duct cannot be modified using all reasonable means possible” in the County Code.

- (2) Method 2 of Appendix A of 40 CFR Part 60 shall be applied as written and used concurrently with any test method in which velocity and volume flow rate measurements are required.
- (3) Sampling procedures for determining compliance with particulate emission control standards shall be in accordance with Method 5 of Appendix A of 40 CFR Part 60. Method 17 of Appendix A of 40 CFR Part 60 may be used instead of Method 5 provided that the stack gas temperature does not exceed 320° F. The minimum time per test point for particulate testing shall be two minutes and the minimum time per test run shall be one hour. The sample gas drawn during each test run shall be at least 30 cubic feet. A number of sources are known to emit organic material (oil, pitch, plasticizers, etc.) which exist as finely divided liquid droplets at ambient conditions. These materials cannot be satisfactorily collected by means of the above Method 5. In these cases the Director may require the use of Method 5 as proposed on August 17, 1971, in the Federal Register, Volume 36, Number 159.
- (4) The procedures for determining compliance with sulfur dioxide emission control standards for fuel burning sources may be either by determining sulfur content with fuel analysis or by stack sampling. Combustion sources choosing to demonstrate compliance through stack sampling shall follow procedures described in Method 6 of Appendix A of 40 CFR Part 60. When Method 6 of Appendix A of 40 CFR Part 60 is used to determine compliance, compliance shall be determined by averaging six 20-minute samples taken over such a period of time that no more than 20 minutes elapses between any two consecutive samples. If a source chooses to demonstrate compliance by analysis of sulfur in fuel, sampling, preparation, and analysis of fuels shall be in accordance with the following American Society of Testing and Materials (ASTM) methods:
  - (A) coal:
    - (i) Sampling.
      - (I) Sampling Location. A source shall collect the coal

from a location in the handling or processing system that provides a sample representative of the fuel bunkered or burned during a boiler operating day. For the purpose of this method, a fuel lot size is defined as the weight of coal bunkered or consumed during each boiler operating day. For reporting and calculation purposes, the gross sample shall be identified with the calendar day on which sampling began. The Director may approve alternate definitions of fuel sizes if the alternative will provide a more representative sample.

- (II) Sample Increment Collection. A source shall use a coal sampling procedure that meets the requirements of ASTM D 2234 Type I, condition A, B, C and systematic spacing for collection of sample increments. All requirements and restrictions regarding increment distribution and sampling device constraints shall be observed.
- (III) Gross Samples. A source shall use ASTM D 2234, 7.1.2, Table 2 except as provided in 7.1.5.2 to determine the number and weight of increments (composite or gross samples).
  - (ii) Preparation. A source shall use ASTM D 2013 for sample preparation from a composite or gross sample.
  - (iii) Gross Calorific Value (GCV). A source shall use ASTM D 2015 or D 3286 to determine GCV on a dry basis from a composite or gross sample.
  - (iv) Moisture Content. A source shall use ASTM D 3173 to determine moisture from a composite or gross sample.
  - (v) Sulfur Content. A source shall use ASTM D 3177 or D 4239 to determine the percent sulfur on a dry basis from a composite or gross sample.
- (B) oil:
  - (i) sampling--A sample shall be collected at the pipeline inlet to the fuel burning unit after sufficient fuel has been drained from the line to remove all fuel that may have been standing in the line;
  - (ii) heat of combustion (Btu)--ASTM Method D 240 or D 2015;
  - (iii) sulfur content--ASTM Method D 129 or D 1552.

The sulfur content and Btu content of the fuel shall be reported on a dry basis. When the test methods described in Parts (A) or (B) of this Subparagraph are used to demonstrate that the ambient air quality standards for sulfur dioxide are being protected, the sulfur content shall be determined at least once per year from a composite of at least three or 24 samples taken at equal time intervals from the fuel being burned over a three-hour or 24 -hour period, respectively, whichever is the time period for which the ambient standard is most likely to be exceeded; this

requirement shall not apply to sources that are only using fuel analysis in place of continuous monitoring to meet the requirements of Section .0600 of this Subchapter.

- (5) Sulfuric acid manufacturing plants and spodumene ore roasting plants shall demonstrate compliance with Rules .0517 and .0527, respectively, of this Section by using Method 8 of Appendix A of 40 CFR Part 60. Compliance shall be determined by averaging emissions measured by three one-hour tests.
- (6) All industrial processes not covered under Subparagraph (5) of this Paragraph emitting sulfur dioxide shall demonstrate compliance by sampling procedures described in Method 6 of Appendix A of 40 CFR Part 60. Compliance shall be determined by averaging six 20-minute samples taken over such a period of time that no more than 20 minutes elapses between any two consecutive samples.
- (7) Sampling procedures to demonstrate compliance with emission standards for nitrogen oxides shall be in accordance with the procedures set forth in Method 7 of Appendix A of 40 CFR Part 60.
- (8) Method 9 of Appendix A of 40 CFR 60 shall be used when opacity is determined by visual observation.
- (9) Notwithstanding the stated applicability to new source performance standards or primary aluminum plants, the procedures to be used to determine fluoride emissions are:
  - (A) for sampling emissions from stacks, Method 13A or 13B of Appendix A of 40 CFR Part 60,
  - (B) for sampling emissions from roof monitors not employing stacks or pollutant collection systems, Method 14 of Appendix A of 40 CFR Part 60, and
  - (C) for sampling emissions from roof monitors not employing stacks but equipped with pollutant collection systems, the procedure under 40 CFR 60.8(b), except that the Director of the Forsyth County Environmental Affairs Department shall be substituted for the administrator.
- (10) Emissions of total reduced sulfur shall be measured by the test procedure described in Method 16 of Appendix A of 40 CFR Part 60 or Method 16A of Appendix A of 40 CFR Part 60.
- (11) Emissions of mercury shall be measured by the test procedure described in Method 101 or 102 of Appendix B of 40 CFR Part 61.
- (12) Each test (excluding fuel samples) shall consist of three repetitions or runs of the applicable test method. For the purpose of determining compliance with an applicable emission standard the average of results of all repetitions shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, and there is no way to obtain another sample; then compliance may be determined using the arithmetic average of the results of the two other runs.
- (13) In conjunction with performing certain test methods prescribed in this

Rule, the determination of the fraction of carbon dioxide, oxygen, carbon monoxide and nitrogen in the gas being sampled is necessary to determine the molecular weight of the gas being sampled. Collecting a sample for this purpose shall be done in accordance with Method 3 of Appendix A of 40 CFR Part 60:

- (A) The grab sample technique may also be used with instruments such as Bacharach Fyrite (trade name) with the following restrictions:
    - (i) Instruments such as the Bacharach Fyrite (trade name) may only be used for the measurement of carbon dioxide.
    - (ii) Repeated samples shall be taken during the emission test run to account for variations in the carb on dioxide concentration. No less than four samples shall be taken during a one-hour test run, but as many as necessary shall be taken to produce a reliable average.
    - (iii) The total concentration of gases other than carbon dioxide, oxygen and nitrogen shall be less than one percent.
  - (B) For fuel burning sources, concentrations of oxygen and nitrogen may be calculated from combustion relations for various fuels.
- (14) For those processes for which the allowable emission rate is determined by the production rate, provisions shall be made for controlling and measuring the production rate. The source shall ensure, within the limits of practicality, that the equipment or process being tested is operated at or near its maximum normal production rate or at a lesser rate if specified by the Director or his delegate. The individual conducting the emission test shall include with his test results, data which accurately represent the production rate during the test.
- (15) Emission rates for wood or fuel burning sources which are expressed in units of pounds per million Btu shall be determined by the "Oxygen Based F Factor Procedure" described in 40 CFR Part 60, Appendix A, Method 19, Section 2. Other procedures described in Method 19 may be used subject to the approval of the Director, Forsyth County Environmental Affairs Department. To provide data of sufficient accuracy to use with the F-factor methods, an integrated (bag) sample shall be taken for the duration of each test run. In the case of simultaneous testing of multiple ducts, there shall be a separate bag for each sampling train. The bag sample shall be analyzed with an Orsat analyzer in accordance with Method 3 of Appendix A of 40 CFR Part 60. (The number of analyses and the tolerance between analyses are specified in Method 3.) The specifications indicated in Method 3 for the construction and operation of the bag sampling apparatus shall be followed.
- (16) Particulate testing on steam generators that utilize soot blowing as a routine means for cleaning heat transfer surfaces shall be conducted so that the contribution of the soot blowing is represented as follows:
- (A) If the soot blowing periods are expected to represent less than 50 percent of the total particulate emissions, one of the test runs shall

include a soot blowing cycle.

- (B) If the soot blowing periods are expected to represent more than 50 percent of the total particulate emissions then two of the test runs shall each include a soot blowing cycle.

Under no circumstances shall all three test runs include soot blowing. The average emission rate of particulate matter is calculated by the equation:

$$E_{avg} = E_s \times S \left[ \frac{A + B}{A \times R} \right] + EN \left[ \frac{R - S}{R} - \frac{B \times S}{A \times R} \right]$$

EAVG equals the average emission rate in pounds per million Btu for daily operating time. ES equals the average emission rate in pounds per million Btu of sample(s) containing soot blowing. EN equals the average emission rate in pounds per million Btu of sample(s) with no soot blowing. A equals hours of soot blowing during sample(s). B equals hours without soot blowing during sample(s) containing soot blowing. R equals average hours of operation per 24 hours. S equals average hours of soot blowing per 24 hours. If large changes in boiler load or stack flow rate occur during soot blowing, other methods of prorating the emission rate may be considered more appropriate; for these tests the Director or his designee may approve an alternate method of prorating.

- (17) Emissions of volatile organic compounds shall be measured by the appropriate test procedure in Section .0900 of this Subchapter.
- (18) Upon prior approval by the Director or his delegate, test procedures different from those described in this Rule may be used if they will provide equivalent or more reliable results. Furthermore, the Director or his delegate may prescribe alternate test procedures on an individual basis when he considers that the action is necessary to secure reliable test data. In the case of sources for which no test method is named, the Director or his delegate may prescribe or approve methods on an individual basis.

- (d) All new sources shall be in compliance prior to beginning operations.

(e) In addition to any control or manner of operation necessary to meet emission standards in this Section, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards of Section .0400 of this Subchapter to be exceeded at any point beyond the premises on which the source is located. When controls more stringent than named in the applicable emission standards in this Section are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

(f) The Bubble Concept. A facility with multiple emission sources or multiple facilities within the same area may choose to meet the total emission limitation for a given pollutant through a different mix of controls than that required by the Rules in this Section or Section .0900 of this Subchapter.

- (1) In order for this mix of alternative controls to be permitted the Director shall determine that the following conditions are met:

- (A) Sources to which Rules .0524, .0530, .0531, .1110 or .1111 of this

Subchapter, the federal New Source Performance Standards (NSPS), the federal National Emission Standards for Hazardous Air Pollutants (NESHAP), regulations established pursuant to Section 111 (d) of the federal Clean Air Act, or state or federal Prevention of Significant Deterioration (PSD) requirements apply, shall have emissions no larger than if there were not an alternative mix of controls;

- (B) The facility (or facilities) is located in an attainment area or an unclassified area or in an area that has been demonstrated to be attainment by the statutory deadlines (with reasonable further progress toward attainment) for those pollutants being considered;
  - (C) All of the emission sources affected by the alternative mix are in compliance with applicable regulations or are in compliance with established compliance agreements; and
  - (D) The review of an application for the proposed mix of alternative controls and the enforcement of any resulting permit will not require expenditures on the part of the County in excess of five times that which would otherwise be required.
- (2) The owner(s) or operator(s) of the facility (facilities) shall demonstrate to the satisfaction of the Director that the alternative mix of controls is equivalent in total allowed emissions, reliability, enforceability, and environmental impact to the aggregate of the otherwise applicable individual emission standards; and
- (A) that the alternative mix approach does not interfere with attainment and maintenance of ambient air quality standards and does not interfere with the PSD program; this demonstration shall include modeled calculations of the amount, if any, of PSD increment consumed or created;
  - (B) that the alternative mix approach conforms with reasonable further progress requirements in any non-attainment area;
  - (C) that the emissions under the alternative mix approach are in fact quantifiable, and trades among them are even;
  - (D) that the pollutants controlled under the alternative mix approach are of the same criteria pollutant categories, except that emissions of some criteria pollutants used in alternative emission control strategies are subject to the limitations as defined in 44 FR 71784 (December 11, 1979), Subdivision D.1.c.ii. The Federal Register referenced in this Part is hereby incorporated by reference and does not include subsequent amendments or editions.

The demonstrations of equivalence shall be performed with at least the same level of detail as The North Carolina State Implementation plan for Air Quality demonstration of attainment for the area in question.

Moreover, if the facility involves another facility in the alternative strategy, it shall complete a modeling demonstration to ensure that air quality is protected. Demonstrations of equivalency shall also take into account differences in the level of reliability of the control measures or other uncertainties.

- (3) The emission rate limitations or control techniques of each source within the facility (facilities) subjected to the alternative mix of controls shall be specified in the facility's (facilities') permits(s).
- (4) Compliance schedules and enforcement actions shall not be affected because an application for an alternative mix of controls is being prepared or is being reviewed.
- (5) The Director may waive or reduce requirements in this Paragraph up to the extent allowed by the Emissions Trading Policy Statement published in the Federal Register of April 7, 1982, pages 15076-15086, provided that the analysis required by Paragraph (g) of this Rule shall support any waiver or reduction of requirements. The Federal Register referenced in this Paragraph is hereby incorporated by reference and does not include subsequent amendments or editions.

(g) In a permit application for an alternative mix of controls under Paragraph (f) of this Rule, the owner or operator of the facility shall demonstrate to the satisfaction of the Director that the proposal is equivalent to the existing requirements of the SIP in total allowed emissions, enforceability, reliability, and environmental impact. The Director shall provide for public notice with an opportunity for a request for public hearing following the procedures under Forsyth County Code, Subchapter 3Q .0300 or .0500, as applicable.

- (1) If and when a permit containing these conditions is issued under 3Q .0300 (non- Title V permits), it shall become a part of the state implementation plan (SIP) as an appendix available for inspection at the Forsyth County Environmental Affairs Department. Until the U.S. Environmental Protection Agency (EPA) approves the SIP revision embodying the permit containing an alternative mix of controls, the facility shall continue to meet the otherwise applicable existing SIP requirements.
- (2) If and when a permit containing these conditions is issued under 3Q .0500 (Title V permits), it shall be available for inspection at the Department. Until the U.S. Environmental Protection Agency (EPA) approves the Title V permit containing an alternative mix of controls, the facility shall continue to meet the otherwise applicable existing SIP requirements.

The revision shall be approved by EPA on the basis of the revision's consistency with EPA's "Policy for Alternative Emission Reduction Options Within State Implementation Plans" as promulgated in the Federal Register of December 11, 1989, pages 71780-71788, and subsequent rulings.

(h) The referenced ASTM test methods in this Rule are hereby incorporated by reference and include subsequent amendments and editions. Copies of referenced ASTM test methods or Federal Registers may be obtained from the Forsyth County Environmental Affairs Department, 537 N. Spruce St., Winston-Salem, NC 27101-1362, at a cost of ten cents (\$0.10) per page. (Ord. No. 9-94, 12-19-94; 8-14-95, 11-11-96, 7-28-97, 5-24-99, 5-14-01)

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| <b>Original Reg</b> | <b>JUN 14, 1990</b>              | <b>MAY 02, 1991</b>             | <b>56 FR 20140</b>          |

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|---------------------|---------------------|---------------------|--------------------|
| <b>1st Revision</b> | <b>MAR 7, 1994</b>  | <b>FEB 1, 1996</b>  | <b>61 FR 3586</b>  |
| <b>2nd Revision</b> | <b>NOV 29, 1995</b> | <b>MAY 23, 1996</b> | <b>61 FR 25789</b> |
| <b>3rd Revision</b> | <b>OCT 10, 1997</b> | <b>DEC 31, 1998</b> | <b>63 FR 72190</b> |
| <b>4th Revision</b> | <b>JUL 30, 1999</b> | <b>OCT 22, 2002</b> | <b>67 FR 64994</b> |

**Section .0502      Purpose**

The purpose of the emission control standards set out in this Sections is to establish maximum limits on the rate of emission of air contaminants into the atmosphere. All sources shall be provided with the maximum feasible control. (Ord. No. 9-94, 12-19-94)

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**Section .0503****Particulates from Fuel Burning Indirect Heat Exchangers**

- (a) For the purpose of this Rule the following definitions shall apply:
- (1) "Functionally dependent" means that structures, buildings or equipment are interconnected through common process streams, supply lines, flues, or stacks.
  - (2) "Indirect heat exchanger" means any equipment used for the alteration of the temperature of one fluid by the use of another fluid in which the two fluids are separated by an impervious surface such that there is no mixing of the two fluids.
  - (3) "Plant site" means any single or collection of structures, buildings, facilities, equipment, installations, or operations which:
    - (A) are located on one or more adjacent properties,
    - (B) are under common legal control, and
    - (C) are functionally dependent in their operations.
- (b) The definition contained in Subparagraph (a)(3) of this Rule does not affect the calculation of the allowable emission rate of any indirect heat exchanger permitted prior to April 1, 1999.
- (c) With the exceptions in Rule .0536 of this Section, emissions of particulate matter from the combustion of a fuel that are discharged from any stack or chimney into the atmosphere shall not exceed:

| Maximum Heat Input<br><u>In Million Btu/Hour</u><br>Up to and Including 10<br>100<br>1,000<br>10,000 and Greater | Allowable Emission<br>Limit For Particulate<br>Matter<br><u>In Lb/Million</u><br><u>Btu</u> 0.60<br>0.33<br>0.18<br>0.10 |
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For a heat input between any two consecutive heat inputs stated in the preceding table, the allowable emissions of particulate matter shall be calculated by the equation  $E = 1.090 \text{ times } Q \text{ to the } -0.2594 \text{ power}$ .  $E$ =allowable emission limit for particulate matter in lb/million Btu.

$Q$ =maximum heat input in million Btu/hour.

(d) This Rule applies to installations in which fuel is burned for the purpose of producing heat or power by indirect heat transfer. Fuels include those such as coal, coke, lignite, peat, natural gas, and fuel oils, but exclude wood and refuse not burned as a fuel. When any refuse, products, or by-products of a manufacturing process are burned as a fuel rather than refuse, or in conjunction with any fuel, this allowable emission limit shall apply.

(e) For the purpose of this Rule, the maximum heat input shall be the total heat content of all fuels which are burned in a fuel burning indirect heat exchanger, of which the combustion products are emitted through a stack or stacks. The sum of maximum heat input of all fuel burning indirect heat exchangers at a plant site which are in operation, under construction, or permitted pursuant to Forsyth County Code, Subchapter 3Q, shall be considered as the total heat input for the purpose of determining the allowable emission limit for particulate

matter for each fuel burning indirect heat exchanger. Fuel burning indirect heat exchangers constructed or permitted after February 1, 1983, shall not change the allowable emission limit of any fuel burning indirect heat exchanger whose allowable emission limit has previously been set. The removal of a fuel burning indirect heat exchanger shall not change the allowable emission limit of any fuel burning indirect heat exchanger whose allowable emission limit has previously been established. However, for any fuel burning indirect heat exchanger constructed after, or in conjunction with, the removal of another fuel burning indirect heat exchanger at the plant site, the maximum heat input of the removed fuel burning indirect heat exchanger shall no longer be considered in the determination of the allowable emission limit of any fuel burning indirect heat exchanger constructed

after or in conjunction with the removal. For the purposes of this Paragraph, refuse not burned as a fuel and wood shall not be considered a fuel. For residential facilities or institutions (such as military and educational) whose primary fuel burning capacity is for comfort heat, only those fuel burning indirect heat exchangers located in the same power plant or building or otherwise physically interconnected (such as common flues, steam, or power distribution line) shall be used to determine the total heat input.

(f) The emission limit for fuel burning equipment that burns both wood and other fuels in combination, or for wood and other fuel burning equipment that is operated such that emissions are measured on a combined basis, shall be calculated by the equation  $E_c = [(E_w)(Q_w) + (E_o)(Q_o)] / Q_t$ .

- (1)  $E_c$  = the emission limit for combination or combined emission source(s) in lb/million Btu.
- (2)  $E_w$  = plant site emission limit for wood only as determined by Rule .0504 of this Section in lb/million Btu.
- (3)  $E_o$  = the plant site emission limit for other fuels only as determined by Paragraphs (a), (b) and (c) of this Rule in lb/million Btu.
- (4)  $Q_w$  = the actual wood heat input to the combination or combined emission source(s) in Btu/hr.
- (5)  $Q_o$  = the actual other fuels heat input to the combination or combined emission source(s) in Btu/hr.
- (6)  $Q_t = Q_w + Q_o$  and is the actual total heat input to combination or combined emission source(s) in Btu/hr. (Ord. No. 9-94, 12-19-94, 5-24-99)

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| <b>1<sup>st</sup> Revision</b> | <b>JUL 30, 1999</b>              | <b>OCT 22, 2002</b>             | <b>67 FR 64994</b>          |

**Section .0504****Particulates from Wood Burning Indirect Heat Exchangers**

- (a) For the purpose of this Rule the following definitions shall apply:
- (1) "Functionally dependent" means that structures, buildings or equipment are interconnected through common process streams, supply lines, flues, or stacks.
  - (2) "Indirect heat exchanger" means any equipment used for the alteration of the temperature of one fluid by the use of another fluid in which the two fluids are separated by an impervious surface such that there is no mixing of the two fluids.
  - (3) "Plant site" means any single or collection of structures, buildings, facilities, equipment, installations, or operations which:
    - (A) are located on one or more adjacent properties,
    - (B) are under common legal control, and
    - (C) are functionally dependent in their operations.
- (b) The definition contained in Subparagraph (a)(3) of this Rule does not affect the calculation of the allowable emission rate of any indirect heat exchanger permitted prior to April 1, 1999.
- (c) Emissions of particulate matter from the combustion of wood shall not exceed:

| Maximum Heat Input<br><u>In Million Btu/Hour</u><br>Up to and Including 10<br>100<br>1,000<br>10,000 and Greater | Allowable Emission<br>Limit For Particulate<br>Matter<br><u>In Lb/Million</u><br><u>Btu</u> 0.70<br>0.41<br>0.25<br>0.15 |
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For a heat input between any two consecutive heat inputs stated in the preceding table, the allowable emissions of particulate matter shall be calculated by the equation  $E = 1.1698 (Q \text{ to the } - 0.2230 \text{ power})$ . E=allowable emission limit for particulate matter in lb/million Btu. Q=Maximum heat input in million Btu/hour.

- (d) This Rule applies to installations in which wood is burned for the primary purpose of producing heat or power by indirect heat transfer.
- (e) For the purpose of this Rule, the heat content of wood shall be 8,000 Btu per pound (dry- weight basis). The total of maximum heat inputs of all wood burning indirect heat exchangers at a plant site in operation, under construction, or with a permit shall be used to determine the allowable emission limit of a wood burning indirect heat exchanger. Wood burning indirect heat exchangers constructed or permitted after February 1, 1983, shall not change the allowable emission limit of any wood burning indirect heat exchanger whose allowable emission limit has previously been set.
- (f) The emission limit for fuel burning equipment that burns both wood and other fuels in combination or for wood and other fuel burning equipment that is operated such that emissions are measured on a combination basis shall be calculated by the procedure described in Paragraph (f) of Rule .0503 of this Section. (Ord. No. 9-94, 12-19-94, 5-24-99, 7-22-02)

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**Section .0506                      Particulates from Hot Mix Asphalt Plants**

(a) The allowable emission rate for particulate matter resulting from the operation of a hot mix asphalt plant shall not exceed the level calculated with the equation  $E = 4.9445(P)^{0.4376}$  calculated to two significant figures, where “E” equals the maximum allowable emission rate for particulate matter in pounds per hour and “P” equals the maximum process rate in tons per hour. The allowable emission rate shall be 60.0 pounds per hour for process weights equal to or greater than 300 tons per hour.

(b) All hot mix asphalt plants shall be equipped with a fugitive process dust control system for the drying, conveying, classifying, and mixing equipment which shall be operated and maintained in such a manner as to reduce to a minimum the emission of particulate matter from any point other than the stack outlet. Emissions from this equipment shall be controlled such that the applicable opacity standards in Rule .0521 or .0524 of this Section are not exceeded.

(c) Fugitive non-process dust emissions shall be controlled by Rule .0540 of this Section. (Ord. No. 9-94, 12-19-94, 9-14-98)

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| <b>1<sup>st</sup> Revision</b> | <b>NOV 6, 1998</b>               | <b>FEB 17, 2000</b>             | <b>65 FR 8053</b>           |

**Section .0507          Particulates from Chemical Fertilizer Manufacturing Plants**

(a)      The allowable emissions rate for particulate matter from the manufacture, mixing, handling, or other operations in the production of chemical fertilizer materials that are discharged from any stack or chimney into the atmosphere shall not exceed the level calculated with the equation  $E = 9.377(P)^{0.3067}$  calculated to three significant figures, where “E” equals the allowable emission rate for particulate matter in pounds per hour and “P” equals the process rate (the sum of the production rate and the recycle rate) in tons per hour. (Ord. No. 9-94, 12-19-94, 9-14-98)

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| <b>1st Revision</b> | <b>MAR 7, 1994</b>               | <b>FEB 1, 1996</b>              | <b>61 FR 3586</b>           |
| <b>2nd Revision</b> | <b>NOV 6, 1998</b>               | <b>FEB 17, 2000</b>             | <b>65 FR 8053</b>           |

**Section .0508****Particulates from Pulp and Paper Mills**

- (a) Emissions of particulate matter from the production of pulp and paper that are discharged from any stack or chimney into the atmosphere shall not exceed:
- (1) 3.0 pounds per equivalent ton of air dried pulp from a recovery furnace stack;
  - (2) 0.6 pounds per equivalent ton of air dried pulp from a dissolving tank vent; and
  - (3) 0.5 pounds per equivalent ton of air dried pulp from a lime kiln stack.
- (b) Emissions from any kraft pulp recovery boiler established after July 1, 1971, shall not exceed an opacity of 35 percent when averaged over a six-minute period. However, six-minute averaging periods may exceed 35 percent opacity if:
- (1) no six-minute period exceeds 89 percent opacity;
  - (2) no more than one six-minute period exceeds 35 percent opacity in any one hour; and
  - (3) no more than four six-minute periods exceed 35 percent opacity in any 24-hour period.

Where the presence of uncombined water vapor is the only reason for failure to meet this opacity limitation, this opacity limitation shall not apply. (Ord. No. 9-94, 12-19-94, 9-14-98)

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**Section .0509****Particulates from Mica or Feldspar Processing Plants**

(a) The allowable emission rate for particulate matter from the processing of mica or feldspar that are discharged from any chimney, stack, vent, or outlet into the atmosphere shall not exceed the level calculated with the equation  $E = 4(P)^{0.677}$  calculated to three significant figures for process rates less than or equal to 30 tons per hour. For process rates greater than 30 tons per hour but less than 1,000 tons per hour, the allowable emission rate for particulate matter shall not exceed the level calculated with the equation  $E = 20.421(P)^{0.1977}$  calculated to three significant figures. For process rates greater than or equal to 1,000 tons per hour but less than 3,000 tons per hour, the allowable emission rate for particulate matter shall not exceed the level calculated with the equation  $E = 38.147(P)^{0.1072}$  calculated to three significant figures. The allowable emission rate shall be 90.0 pounds per hour for process weight rates equal to or greater than 3,000 tons per hour. For the purpose of these equations, "E" equals the allowable emission rate for particulate matter in pounds per hour and "P" equals the actual process weight rate in tons per hour.

(b) Fugitive non-process dust emissions shall be controlled by Rule .0540 of the Section.

(c) The owner or operator of any mica or feldspar plant shall control process-generated emissions:

(1) from crushers with wet suppression, and

(2) from conveyors, screens, and transfer points,

such that the applicable opacity standards in Rule .0521 or .0524, of this Section are not exceeded. (Ord. No. 9-94, 12-19-94, 9-14-98)

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| <b>2<sup>nd</sup> Revision</b> | <b>NOV 6, 1998</b>               | <b>FEB 17, 2000</b>             | <b>65 FR 8053</b>           |

**Section .0510****Particulates from Sand, Gravel, or Crushed Stone Operations**

(a) The owner or operator of a sand, gravel, or crushed stone operation shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent exceeding the ambient air quality standards beyond the property line for particulate matter, both PM10 and total suspended particulates.

(b) Fugitive non-process dust emissions from sand, gravel, or crushed stone operations shall be controlled by Rule .0540 of this Section.

(c) The owner or operator of any sand, gravel, or crushed stone operation shall control process-generated emissions:

(1) from crushers with wet suppression, and

(2) from conveyors, screens, and transfer points,

such that the applicable opacity standards in Rule .0521 or .0524, of this Section are not exceeded. (Ord. No. 9-94, 12-19-94, 9-14-98)

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| <b>2<sup>nd</sup> Revision</b> | <b>NOV 6, 1998</b>               | <b>FEB 17, 2000</b>             | <b>65 FR 8053</b>           |

**Section .0511****Particulates from Lightweight Aggregate Processes**

(a) The owner or operator of a lightweight aggregate process shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent the ambient air quality standards for particulate matter, both PM10 and total suspended particulates, from being exceeded beyond the property line.

(b) Fugitive non-process dust emissions from lightweight aggregate processes subject to this Rule shall be controlled by Rule .0540 of this Section.

(c) The owner or operator of any lightweight aggregate process shall control process-generated emissions:

(1) from crushers with wet suppression, and

(2) from conveyors, screens, and transfer points,

such that the applicable opacity standards in Rule .0521 or .0524, of this Section are not exceeded.

(d) Particulate matter from any stack serving any lightweight aggregate kiln or lightweight aggregate dryer shall be reduced by at least 95 percent by weight before being discharged to the atmosphere. The 95-percent reduction shall be by air pollution control devices. (Ord. No. 9-94, 12-19-

94, 9-14-98)

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**Section .0512****Particulates from Wood Products Finishing Plants**

A person shall not cause, allow, or permit particulate matter caused by the working, sanding, or finishing of wood to be discharged from any stack, vent, or building into the atmosphere without providing, as a minimum for its collection, adequate duct work and properly designed collectors, or such other devices as approved by the Director, and in no case shall the ambient air quality standards be exceeded beyond the property line. Collection efficiency shall be determined on the basis of weight. (Ord. No. 9-94, 12-19-94, 7-28-97, 9-14-98)

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| <b>2<sup>nd</sup> Revision</b> | <b>OCT 10, 1997</b>              | <b>DEC 31, 1998</b>             | <b>63 FR 72190</b>          |

**Section .0513                      Control of Particulates from Portland Cement Plants**

- (a)     Particulate matter from any Portland cement kiln shall:
- (1)     be reduced by at least 99.7 percent by weight before being discharged to the atmosphere; the 99.7-percent reduction shall be by air pollution control devices; and
- (2)     shall not exceed 0.327 pounds per barrel.
- (b)     The emissions of particulate matter from any stacks, vent or outlets from all processes except Portland cement kilns shall be controlled by Rule .0515 of this Section. (Ord. No. 9-94, 12-19-94, 9-14-98)
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**Section .0514****Control Particulates from Ferrous Jobbing Foundries**

Particulate emissions from any ferrous jobbing foundry cupola existing before January 2, 1972 shall not exceed:

| <u>Process<br/>Weight<br/>In Lb/Hour</u> | <u>Maximum Allowable Emission<br/>Rate For<br/>Particulate<br/>In Lb/Hour</u> |
|------------------------------------------|-------------------------------------------------------------------------------|
| 1,000                                    | 3.05                                                                          |
| 2,000                                    | 4.70                                                                          |
| 3,000                                    | 6.35                                                                          |
| 4,000                                    | 8.00                                                                          |
| 5,000                                    | 9.65                                                                          |
| 6,000                                    | 11.30                                                                         |
| 7,000                                    | 12.90                                                                         |
| 8,000                                    | 14.30                                                                         |
| 9,000                                    | 15.50                                                                         |
| 10,000                                   | 16.65                                                                         |
| 12,000                                   | 18.70                                                                         |
| 16,000                                   | 21.60                                                                         |
| 18,000                                   | 23.40                                                                         |
| 20,000                                   | 25.10                                                                         |

Any foundry existing before January 2, 1972, having a capacity greater than shown in the table and any new foundry, regardless of size, shall comply with the emission limits specified in paragraph (a) of Rule .0515 of this Section. (Ord. No. 9-94, 12-19-94, 9-14-98)

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**Section .0515****Particulates from Miscellaneous Industrial Processes**

(a) The allowable emission rates for particulate matter from any stack, vent, or outlet of any industrial process for which no other emission control standards are applicable shall not exceed the level calculated with the equation  $E = 4.10(P)^{0.67}$  calculated to three significant figures for process weight rates less than or equal to 60,000 pounds per hour. For process weight rates greater than 60,000 pounds per hour, the allowable emission rates for particulate matter shall not exceed the level calculated with

the equation  $E = 55.0(P)^{0.11} - 40$  calculated to three significant figures. For the purpose of these equations "E" equals the allowable emission rate for particulate matter in pounds per hour and "P" equals the process weight rate in tons per hour.

(b) Process weight per hour means the total weight of all materials introduced into any specific process that may cause any emission of particulate matter. Solid fuels charged are considered as part of the process weight, but liquid and gaseous fuels and combustion air are not. For a cyclical or batch operation, the process weight per hour is derived by dividing the total process weight by the number of hours in one complete operation from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle. For a continuous operation, the process weight per hour is derived by dividing the process weight for a typical period of time by the number of hours in that typical period of time. (Ord. No. 9-94, 12-19-94, 9-14-98)

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| <b>2<sup>nd</sup> Revision</b> | <b>NOV 6, 1998</b>               | <b>FEB 17, 2000</b>             | <b>65 FR 8053</b>           |

**Section .0516****Sulfur Dioxide Emissions from Combustion Sources**

(a) Emission of sulfur dioxide from any source of combustion that is discharged from any vent, stack, or chimney shall not exceed 2.3 pounds of sulfur dioxide per million Btu input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. Sulfur dioxide formed or reduced as a result of treating flue gases with sulfur trioxide or other materials shall also be accounted for when determining compliance with this standard.

(b) A source subject to an emission standard for sulfur dioxide in Rule .0524, .0527, .1110, or .1111 of this Subchapter shall meet that standard. (Ord. No. 9-94, 12-19-94; 8-14-95, 11-11-96)

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| <b>1<sup>st</sup> Revision</b> | <b>NOV 29, 1995</b>              | <b>MAY 23, 1996</b>             | <b>61 FR 25789</b>          |

**Section .0517                      Emissions from Plants Producing Sulfuric Acid**

Emissions of sulfur dioxide or sulfuric acid mist from the manufacture of sulfuric acid shall not exceed:

- (1)      27 pounds of sulfur dioxide per ton of sulfuric acid produced (Ord. No. 9-94, 12-19-94)

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**Section .0519****Control of Nitrogen Dioxide and Nitrogen Oxides Emissions**

- (a) The emissions of nitrogen dioxide shall not exceed:
    - (1) 0.6 pounds per million Btu of heat input from any oil or gas-fired boiler with a capacity of 250 million Btu per hour or more,
    - (2) 1.3 pounds per million Btu of heat input from any coal-fired boiler with a capacity of 250 million Btu per hour or more,
    - (3) 5.8 pounds per ton of acid produced from any nitric acid manufacturing plants,
    - (4) 5.8 pounds per ton of acid produced from any sulfuric acid manufacturing plant.
  - (b) The emissions of nitrogen oxides shall not exceed:
    - (1) 0.8 pounds per million Btu of heat input from any oil or gas-fired boiler with a capacity of 250 million Btu per hour or more,
    - (2) 1.8 pounds per million Btu of heat input from any coal-fired boiler with a capacity of 250 million Btu per hour or more.
  - (c) The emission limit for a boiler that burns both coal and oil or gas in combination shall be calculated by the equation  $E = [(E_e)(Q_c) + (E_o)(Q_o)] / Q_t$ .
    - (1) E = the emission limit for combination in lb/million Btu.
    - (2) E<sub>e</sub> = emission limit for coal only as determined by Paragraph (a) or (b) of this Rule in lb/million Btu.
    - (3) E<sub>o</sub> = emission limit for oil or gas as determined by Paragraph (a) or (b) of this Rule in lb/million Btu.
    - (4) Q<sub>c</sub> = the actual coal heat input to the combination in Btu/hr.
    - (5) Q<sub>o</sub> = the actual oil and gas heat input to the combination in Btu/hr.
    - (6) Q<sub>t</sub> = Q<sub>c</sub> + Q<sub>o</sub> and is the actual total heat input to the combination in Btu/hr. (Ord. No. 9-94, 12-19-94)
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## **.0520 Control and Prohibition of Open Burning**

(a) Purpose. This Regulation is for the purpose of preventing, abating, and controlling air pollution resulting from air contaminants released in the open burning of refuse or other combustible materials.

(b) Scope. This Regulation applies to all operations involving open burning except those specifically exempted by Paragraph (d) of this Regulation.

(c) A person shall not cause, allow, or permit open burning of refuse or other combustible material except those covered by a permit issued under the authority of the [Director]<sup>9</sup>

(d) Permissible Open Burning. While recognizing that open burning contributes to air pollution, the Director is aware that certain types of open burning may reasonably be allowed in the public interest. Therefore, the following types of open burning are permissible as specified if burning is not prohibited by ordinances and regulations of governmental entities having jurisdiction. The authority to conduct open burning under the provisions of this Regulation does not exempt or excuse any person from the consequences, damages or injuries which may result from this conduct. It does not excuse or exempt any person from complying with all applicable laws, ordinances, regulations and orders of the governmental entities having jurisdiction even though the open burning is conducted in compliance with this Regulation. Permission granted under the authority of the Director under this Regulation shall be subject to continuing review and may be withdrawn at any time. Permissible open burning is:

(1) fires purposely set for the instruction and training of fire-fighting personnel when conducted under the supervision of:

(A) the North Carolina Insurance Department,

(B) North Carolina technical institutes, or

(C) the North Carolina community colleges, including:

(i) the North Carolina Fire College and

(ii) the North Carolina Rescue College, which are conducted with the cooperation of one or both of these agencies;

(2) fires purposely set for the instruction and training of fire-fighting personnel at permanent fire-fighting training facilities when conducted by a fire department, but these fires will not be permitted if the primary purpose of setting the fires is refuse disposal or recovery of salvageable materials. Factors which may be considered in determination of primary purpose include type, amount, and nature of combustible substances;

(3) fires purposely set for the instruction and training of industrial fire-fighting personnel in training programs which are repetitious and continuous in nature. A plan containing program aspects related to possible air pollution including, but not limited to:

(A) nature and location of the exercise,

(B) nature of material to be burned,

(C) amount of each type of material to be burned,

(D) training objectives of the exercise, and

(E) insofar as it is known, a schedule of dates and times of the exercises, has been submitted to and has been approved by the director. These fires, however, will not be permitted if the primary purpose in setting the fire is refuse disposal or recovery of salvageable materials. Factors which may be considered in determination of primary purpose include type, amount and nature of combustible substances. Any deviations

from the dates and times of exercises, including additions, postponements, and deletions, submitted in the schedule in the approved plan will be communicated verbally to the [Forsyth County Environmental Affairs Department]<sup>10</sup> at least one hour before the change;

(4) fires purposely set for the instruction and training of public and industrial fire-fighting personnel not covered under Subparagraphs (1), (2), or (3) of this Paragraph, if the training program aspects related to possible air pollution effects are approved in advance by the [director]<sup>11</sup> and if these fire-fighting exercise conditions are met:

(A) The [Forsyth County Environmental Affairs Department]<sup>12</sup> shall be initially notified orally or in writing at least 48 hours in advance of any burning conducted in conjunction with a fire training exercise. If initial notice is given orally, a written notification shall also be submitted within 24 hours after the initial oral notification. The notification, either written or oral, shall include:

- (i) the nature and location of the exercise,
- (ii) date and time that the exercise is to be held,
- (iii) nature of materials to be burned,
- (iv) amount of each type of material to be burned, and
- (v) training objectives of the exercise.

(B) The burning of salvageable items, including but not limited to insulated wire and electric motors, shall not be exempted as a fire-training exercise, except as provided in Subpart (C) (iii) of this Subparagraph.

(C) The [Director]<sup>13</sup> may withhold approval for burnings purposely set for fire-fighting exercises, other than those described in Subparagraphs (1), (2), and

(3) of this Paragraph in the following cases:

(i) when the required notice has not been received 48 hours in advance of the proposed burning;

(ii) when the required notice does not include adequate details about:

- (I) the nature and location of the exercise,
- (II) date and time that the exercise is to be held,
- (III) nature of objects or materials to be burned,
- (IV) amount of each type of material to be burned, and
- (V) training objectives of the exercises;

(iii) when salvageable items are proposed to be burned in conjunction with the exercise, except that the Director allow an exercise involving the burning of a motor vehicle if the sole objective is instruction on the techniques of fighting such a fire; the number of motor vehicles burned over a period of time by any one training unit or by several related training units shall be considered in determining the objective of the exercises;

(iv) when the training unit has entered a formal or informal contractual relationship prior to any burning incorporated into a training

- exercise wherein the unit is compensated for conducting the burning;
- (5) fires purposely set by manufacturers of fire extinguishing materials or equipment, testing laboratories, or other persons approved by the commission, for the purpose of testing or developing these materials or equipment in accordance with a valid standard qualification program;
  - (6) fires purposely set to agricultural lands for disease and pest control and other accepted agricultural or wildlife management practices acceptable to the commission;
  - (7) fires purposely set to forest lands for forest management practices acceptable to the Division of Forestry and the Director;
  - (8) fires purposely set in rural areas for rights-of-way maintenance only in instances where there are no other practicable or feasible methods of disposal and under conditions acceptable to the Director;
  - (9) camp fires and fires used solely for outdoor cooking and other recreational purposes, or for ceremonial occasions, or for human warmth and comfort;
  - (10) open burning of leaves, tree branches or yard trimmings originating on the premises of private residences and burned on those premises in areas where no public pickup facilities are available. The burning shall be between 8:00 a.m. and 6:00 p.m. and shall not create a nuisance;
  - (11) open burning for land clearing or right-of-way maintenance in areas other than those zoned solely residential or used primarily for residential purposes, if the following conditions are met:

- (A) Prevailing winds at the time of burning shall be away from any city or town or built-up area, the ambient air of which may be significantly affected by smoke, fly-ash, or other air pollutants from the burning;
- (B) The location of the burning shall be at least 1,000 feet from any dwelling located in a predominantly residential area other than a dwelling structure located on the property on which the burning is done;
- (C) The amount of dirt on the material being burned shall be minimized;
- (D) Heavy oils, asphaltic materials, items containing natural or synthetic rubber, or any materials other than plant growth shall not be burned;
- (E) Initial burning shall generally begin only between the hours of 9:00 a.m. and 3:00 p.m., and no combustible material shall be added to the fire between 3:00 p.m. on one day and 9:00 a.m. on the following day, except that, under favorable meteorological conditions, deviation from these hours of burning may be granted by the air pollution control agency having jurisdiction. The owner or operator of the open burning operation shall be responsible for obtaining written approval for burning during periods other than those specified above in this Part;

(12) fires for the disposal of dangerous materials where there is no alternative method of disposal, and burning is conducted in accordance with procedures acceptable to the commission. (Ord. No. 9-94, 12-19-94)

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| <b>Original Reg</b> | <b>JUN 14, 1990</b>              | <b>MAY 2, 1991</b>              | <b>56 FR 20140</b>          |
| <b>1st Revision</b> | <b>MAR 7, 1994</b>               | <b>FEB 1, 1996</b>              | <b>61 FR 3586</b>           |

**Section .0521 Control of Visible Emissions**

(a) Purpose. The intent of this Rule is to prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can be reasonably expected to

occur, except during startup, shutdowns and malfunctions approved as such according to procedures approved under Rule .0535 of this Section.

(b) Scope. This Rule shall apply to all fuel burning sources and to other processes that may have a visible emission. However, sources subject to a visible emission standard in Rule .0508, .0524, .1110, or .1111 of this Subchapter shall meet that standard instead of the standard contained in this Rule. This rule does not apply to engine maintenance, rebuild, and testing activities where controls are infeasible, except it does apply to the testing of peak shaving and emergency generators. (In deciding if controls are infeasible, the Director shall consider emissions, capital cost of compliance, annual incremental compliance cost, and environmental and health impacts.)

(c) For sources manufactured as of July 1, 1971, visible emissions shall not be more than 40 percent opacity when averaged over a six-minute period. However, except for sources required to comply with Paragraph (g) of this Rule, six-minute averaging periods may exceed 40 percent opacity if:

- (1) No six-minute period exceeds 90 percent opacity;
- (2) No more than one six-minute period exceeds 40 percent opacity in any hour; and
- (3) No more than four six-minute periods exceed 40 percent opacity in any 24-hour period.

(d) For sources manufactured after July 1, 1971, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period. However, except for sources required to comply with Paragraph (g) of this Rule, six-minute averaging periods may exceed 20 percent opacity if:

- (1) No six-minute period exceeds 87 percent opacity;
- (2) No more than one six-minute period exceeds 20 percent opacity in any hour; and
- (3) No more than four six-minute periods exceed 20 percent opacity in any 24-hour period.

(e) Where the presence of uncombined water is the only reason for failure of an emission to meet the limitations of Paragraph (c) or (d) of this Rule, those requirements shall not apply.

(f) Exception from Opacity Standard in Paragraph (d) of this Rule. Sources subject to Paragraph (d) of this Rule may be allowed to comply with Paragraph (c) of this Rule if:

- (1) The owner or operator of the source demonstrates compliance with applicable particulate mass emissions standards; and
- (2) The owner or operator of the source submits necessary data to show that emissions up to those allowed by Paragraph (c) of this Rule will not violate any national ambient air quality standard.

The burden of proving these conditions shall be on the owner or operator of the source and shall be approached in the following manner. The owner or operator of a source seeking an exception shall apply to the Director requesting this modification in its permit. The applicant shall submit the results of a source test within 90 days of application. Source testing shall be by the appropriate procedure as designated by rules in this Subchapter. During this 90-day period the applicant shall submit data necessary to show that emissions up to those allowed by Paragraph (c) of this Rule will not contravene ambient air quality standards. This evidence shall include, as a minimum, an inventory of past and projected emissions from the facility. In its review of ambient air quality, the Forsyth County Environmental Affairs Department may require additional information that it considers necessary to assess the resulting ambient air quality. If the applicant can thus show that it will be in compliance both with particulate mass emissions standards and ambient air quality standards, the Director shall modify the permit to allow emissions up to those allowed by Paragraph (c) of this Rule.

(g) For sources required to install, operate, and maintain continuous opacity monitoring systems (COMS), compliance with the numerical opacity limits in this Rule shall be determined as follows: excluding startups, shutdowns, and malfunctions approved as such according to procedures

approved under Rule .0535 of this Section, the percent of excess emissions (defined as the percentage of monitored operating time in a calendar quarter above the opacity limit) shall not exceed 0.8 percent of the total operating hours. If a source operates less than 500 hours during a calendar quarter, the percent of excess emissions shall be calculated by including hours operated immediately previous to this quarter until 500 operational hours are obtained. (Ord. No. 9-94, 12-19-94, 11-11-96, 9-14-98, 5-14-01)

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| <b>1st Revision</b> | <b>MAR 7, 1994</b>               | <b>FEB 1, 1996</b>              | <b>61 FR 3586</b>           |
| <b>2nd Revision</b> | <b>NOV 6, 1998</b>               | <b>FEB 17, 2000</b>             | <b>65 FR 8053</b>           |

**.0523 Control of Conical Incinerators**

- (a) Purpose. The purpose of this Regulation is to set forth the requirements of the commission relating to the use of conical incinerators in the burning of wood and agricultural waste.
- (b) Scope. This Regulation shall apply to all conical incinerators which are designed to incinerate wood and agricultural waste.
- (c) A person shall not cause, allow, or permit the burning of wood or agricultural waste in a conical incinerator without taking reasonable precaution to prevent air pollutants from becoming airborne. As a minimum, each conical incinerator subject to this Regulation shall be equipped and maintained with:
  - (1) an underfire and an overfire forced air system and variable damper which is automatically controlled to ensure the optimum temperature range for the complete combustion of the amount and type of material waste being charge into the incinerator;
  - (2) a temperature recorder for continuously recording the temperature of the exit gas;
  - (3) a feed system capable of delivering the waste to be burned at a sufficiently uniform rate to prevent temperature from dropping below 800 degrees Fahrenheit during normal operation, with the exception of one startup and one shutdown per day.
- (d) The owner of the conical incinerator shall monitor and report ambient particulate concentrations in accordance with a method and schedule acceptable to the commission.
- (e) In no case shall the ambient air quality standards as defined in Section .0400 of this Subchapter be exceeded.
- (f) The conical incinerator shall not violate Regulation .0521 of this Section.
- (g) The distance a conical incinerator is located and/or operated from the nearest structure(s) in which people live or work shall be optimized to prevent air quality impact and shall be subject to approval by the commission.
- (h) New conical incinerators shall be in compliance with this Regulation on startup.  
(Ord. No. 9-94, 12-19-94)

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| <b>1st Revision</b> | <b>MAR 7, 1994</b>               | <b>FEB 1, 1996</b>              | <b>61 FR 3586</b>           |

**Section .0527                      Emissions from Spodumene Ore Roasting**

Emission of sulfur dioxide and sulfuric acid mist from any one kiln used for the roasting of spodumene ore shall not exceed:

- (1)      9.7 pounds of sulfur dioxide per ton of ore roasted.  
(Ord. No. 9-94, 12-19-94)
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| <b>Original Reg</b>            | <b>DEC 17, 1984</b>              | <b>DEC 19, 1986</b>             | <b>51 FR 45468</b>          |
| <b>1<sup>st</sup> Revision</b> | <b>JUN 14, 1990</b>              | <b>MAY 02, 1991</b>             | <b>56 FR 20140</b>          |
| <b>Original Reg</b>            | <b>MAR 7, 1995</b>               | <b>FEB 1, 1996</b>              | <b>61 FR 3586</b>           |

**Section .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 as amended March 15, 1996.

(b) For the purposes of this Rule the definitions contained in 40 CFR 51.166(b) and 40 CFR 51.301 shall apply. The reasonable period specified in 40 CFR 51.166(b)(3)(ii) shall be seven years. The limitation specified in 40 CFR 51.166(b)(15)(i) shall not apply.

(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 by extension in 40 CFR 51.166(j) through (o). 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 County 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) Forsyth County Code, Subchapter 3Q .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 Forsyth County Code, Subchapter 3Q .0300 or .0500.

(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 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.

(j) Volatile organic compounds exempted from coverage in Subparagraph (c)(5) of Rule

.0531 of this Section shall also be exempted when calculating source applicability and control requirements under this Rule.

(k) 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.

(l) 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.

(m) 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).

(n) 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.

(o) 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 will 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.

(p) 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 Chapter and any other requirements under local, state, or federal law.

(q) When a source or modification 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) 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.

(r) Revisions of the North Carolina State Implementation Plan for Air Quality shall comply with the requirements contained in 40 CFR 51.166(a)(2).

(s) The version of the Code of Federal Regulations incorporated in this Rule is that as of March 15, 1996, and does not include any subsequent amendments or editions to the referenced material. (Ord. No. 9-94, 12-19-94; 8-14-95, 7-28-97)

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| <b>1st Revision</b> | <b>MAR 7, 1994</b>               | <b>FEB 1, 1996</b>              | <b>61 FR 3586</b>           |
| <b>2nd Revision</b> | <b>NOV 29, 1995</b>              | <b>MAY 23, 1996</b>             | <b>61 FR 25789</b>          |
| <b>3rd Revision</b> | <b>OCT 10, 1997</b>              | <b>DEC 31, 1998</b>             | <b>63 FR 72190</b>          |

## Section .0531 Sources in Nonattainment Areas

(a) Applicability.

- (1) Ozone Nonattainment Areas. This Rule applies 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 and that are located in:

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

(B) [Forsyth County]<sup>5</sup> only when the Director of the N.C. Division of Air Quality notices in the North Carolina Register that the area is in violation of the ambient air quality standard for ozone [ ]<sup>6</sup>.

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.

- (3) Redesignation to Attainment. If any county or part of a county in 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.

- (b) For the purpose of this Rule the definitions contained in 40 CFR 51.165(a)(1) and 40

CFR 51.301 shall apply. The reasonable period specified in 40 CFR 51.165(a)(1)(vi)(C)(1) shall be seven years.

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

- (d) Forsyth County Code, Subchapter 3Q .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 Forsyth County Code, Subchapter 3Q .0300 or .0500.

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

- (1) The source will emit the nonattainment pollutant at a rate no more than the lowest achievable emission rate;

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<sup>5</sup>See 3B .0102(a)(8); "any of the following areas and in that area" changed to "Forsyth County" in the County Code.

<sup>6</sup>See 3B. 0102(a)(8); Wording change d or deleted because it applied to are a(s) outside the jurisdiction of Forsyth County.

- (2) The owner or operator of the proposed new or modified source has demonstrated that all major stationary sources in the County 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 source 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 lesser than 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 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
- (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.

- (f) 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.

(g) 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 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.

(h) 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.

(i) When 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) 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 only issue permits to those sources whose emissions will be consistent with making reasonable progress towards 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 non-air 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.

(j) The version of the Code of Federal Regulations incorporated in this Rule is that as of January 1, 1989, and does not include any subsequent amendments or editions to the referenced material.

(k) Paragraphs (e) and (g) 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 (a)(1)(B) of this Rule and before the area is designated in 40 CFR 81.334 as nonattainment for ozone if the [Urban Airshed Model (UAM) demonstrates that the new source or modification will not contribute to or cause a violation. The Department shall handle the modeling efforts after the permit application has been submitted to the Department. ]<sup>7</sup> 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. (Ord. No. 9-94, 12-19-94; 11-13-95, 11-11-96, 9-14-98)

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| <b>1<sup>st</sup> Revision</b> | <b>NOV 6, 1998</b>               | <b>FEB 17, 2000</b>             | <b>65 FR 8053</b>           |

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<sup>7</sup>See 3B .0102(a)(9); “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 N.C. Division of Air Quality. The N.C. Division of Air Quality shall only run the model after the permit application has been submitted.” was not adopted in the County Code.

## Section .0532

## Sources Contributing to an Ambient Violation

(a) This Rule applies to new major stationary sources and major modifications which are located in an area which is designated by the U.S. Environmental Protection Agency (EPA) to be an attainment or unclassifiable area as of May 1, 1983, and which would contribute to a violation of a national ambient air quality standard but which would not cause a new violation.

(b) For the purpose of this Rule the definitions contained in Section II.A. of Appendix S of 40 CFR Part 51 shall apply.

(c) The Rule is not applicable to:

- (1) complex sources of air pollution that are regulated only under Section .0800 of this Subchapter and not under any other Rule of this Subchapter;
- (2) emission of pollutants for which the area in which the new or modified source is located is designated as nonattainment;
- (3) emission of pollutants for which the source or modification is not major;
- (4) emission of pollutants other than sulfur dioxide, total suspended particulates, nitrogen oxides, and carbon monoxide;
- (5) a new or modified source whose impact will increase not more than:
  - (A)  $1.0 \text{ ug/m}^3$  of  $\text{SO}_2$  on an annual basis,
  - (B)  $5 \text{ ug/m}^3$  of  $\text{SO}_2$  on a 24-hour basis,
  - (C)  $25 \text{ ug/m}^3$  of  $\text{SO}_2$  on a 3-hour basis,
  - (D)  $1.0 \text{ ug/m}^3$  of total suspended particulates on an annual basis,
  - (E)  $5 \text{ ug/m}^3$  of total suspended particulates on a 24-hour basis,
  - (F)  $1.0 \text{ ug/m}^3$  of  $\text{NO}_2$  on an annual basis,
  - (G)  $0.5 \text{ mg/m}^3$  of carbon monoxide on an 8-hour basis,
  - (H)  $2 \text{ mg/m}^3$  of carbon monoxide on a one-hour basis,
  - (I)  $1.0 \text{ ug/m}^3$  of  $\text{PM}_{10}$  on an annual basis, or
  - (J)  $5 \text{ ug/m}^3$  of  $\text{PM}_{10}$  on a 24-hour basis,at any locality that does not meet a national ambient air quality standard;
- (6) sources which are not major unless secondary emissions are included in calculating the potential to emit;
- (7) sources which are exempted by the provision in Section II.F. of Appendix S of 40 CFR Part 51;
- (8) temporary emission sources which will be relocated within two years; and
- (9) emissions resulting from the construction phase of the source.

(d) Forsyth County Code, Subchapter 3Q .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 Forsyth County Code, Subchapter 3Q .0300 or .0500.

(e) To issue a permit to a new or modified source to which this Rule applies, the Director shall determine that the source will meet the following conditions:

- (1) The sources 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 or modified source has demonstrated that all major stationary sources in the County which 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 which is federally enforceable or contained in a court decree, with all applicable emission limitations and standards of this Subchapter which EPA has authority to approve as elements of the North Carolina State Implementation Plan for Air Quality.

(3) The source will satisfy one of the following conditions:

(A) The source will comply with Part (e)(3) of Rule .0531 of this Section when the source is evaluated as if it were in the nonattainment area; or

(B) The source will have an air quality offset, i.e., the applicant will have caused an air quality improvement in the locality where the national ambient air quality standard is not met by causing reductions in impacts of other sources greater than any additional impact caused by the source for which the application is being made. The emissions reductions creating the air quality offset shall be placed as a condition in the permit for the source reducing emissions. The requirements of this Part may be partially waived if the source is a resource recovery facility burning municipal solid waste, the source must switch fuels due to lack of adequate fuel supplies, or the source is required to be modified as a result of EPA regulations and no exemption from such regulations is available and if:

(i) the permit applicant demonstrates that it made its best efforts to

obtain sufficient air quality offsets to comply with this Part;

(ii) the applicant has secured all available air quality offsets; and

(iii) the applicant will continue to seek the necessary air quality offsets and apply them when they become available.

(f) At such time that 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.

(g) The version of the Code of Federal Regulations incorporated in this Rule is that as of January 1, 1989, and does not include any subsequent amendments or editions to the referenced material. (Ord. No. 9-94, 12-19-94)

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**56 FR 20140**  
**61 FR 3586**

**Section .0533****Stack Height**

- (a) For the purpose of this Rule, the following definitions apply:
- (1) "Stack" means any point in a source designed to emit solids, liquids, or gases into the air, including a pipe or duct but not including flares.
  - (2) "A stack in existence" means that the owner or operator had:
    - (A) begun, or caused to begin, a continuous program of physical on-site construction of the stack; or
    - (B) entered into binding agreements or contractual obligations, which could not be canceled or modified without substantial loss to the owner or operator, to undertake a program of construction of the stack to be completed in the time that is normally required to construct such a stack.
  - (3) "Dispersion technique"
    - (A) "Dispersion technique" means any technique which attempts to affect the concentration of a pollutant in the ambient air by:
      - (i) using that portion of a stack which exceeds good engineering practice stack height,
      - (ii) varying the rate of emission of a pollutant according to atmospheric conditions or ambient concentrations of that pollutant, or
      - (iii) increasing final exhaust gas plume rise by manipulating source process parameters, exhaust gas parameters, stack parameters, or combining exhaust gases from several existing stacks into one stack; or other selective handling of exhaust gas streams so as to increase the exhaust gas plume rise.
    - (B) "Dispersion technique" does not include:
      - (i) the reheating of a gas stream, following use of a pollution control system, for the purpose of returning the gas to the temperature at which it was originally discharged from the facility generating the gas stream;
      - (ii) the using of smoke management in agricultural or silvicultural prescribed burning programs;
      - (iii) the merging of exhaust gas streams where:
        - (I) The facility owner or operator demonstrates that the source was originally designed and constructed with such merged gas streams;
        - (II) After July 8, 1985, such merging is part of a change in operation at the facility that includes the installation of pollution controls and is accompanied by a net reduction in the allowable emissions of a pollutant. This exclusion from the definition of "dispersion techniques" shall apply only to the emission limitation for the pollutant affected by such change in operation; or
        - (III) Before July 8, 1985, such merging was part of a change in operation at the source that included the

installation of emissions control equipment or was carried out for sound economic or engineering reasons. Where there was an increase in the emission limitation or in the event that no emission limitation as in existence prior to the merging, an increase in the quantity of pollutants actually emitted prior to the merging, the Director shall presume that merging was significantly motivated by an intent to gain emissions credit for greater dispersion. Absent a demonstration by the source owner or operator that merging was not significantly motivated by such intent, the Director shall deny credit for the effects of such merging in calculating the allowable emissions for the source;

- (iv) Episodic restrictions on residential wood burning and open burning or;
  - (v) Techniques under Subpart (A)(iii) of this Subparagraph which increase final exhaust gas plume rise where the resulting allowable emissions of sulfur dioxide from the facility do not exceed 5,000 tons per year.
- (4) "Good engineering practice (GEP) stack height" means the greater of:
- (A) 65 meters measured from the ground-level elevation at the base of the stack;
  - (B) 2.5 times the height of nearby structure(s) measured from the ground-level elevation at the base of the stack for stacks in existence on January 12, 1979 and for which the owner or operator had obtained all applicable permit or approvals required under Forsyth County Code, Subchapter 3Q and 40 CFR Parts 51 and 52, provided the owner or operator produces evidence that this equation was actually relied on in establishing an emission limitation;
  - (C) for stacks not covered under Part (B) of this Subparagraph, the height of nearby structure(s) measured from the ground-level elevation at the base of the stack plus 1.5 times the lesser dimension (height or projected width) of nearby structure(s) provided that the Director may require the use of a field study or fluid model to verify GEP stack height for the source; or
  - (D) the height demonstrated by a fluid model or a field study approved by the Director, which ensures that the emissions from a stack do not result in excessive concentrations of any air pollutant as a result of atmospheric downwash, wakes, or eddy effects created by the source itself, nearby structures or nearby terrain features.
- (5) "Nearby" means, for a specific structure or terrain feature:
- (A) under Parts (4)(B) and (C) of this Paragraph, that distance up to five times the lesser of the height or the width dimension of a structure but not greater than one-half mile. The height of the structure is measured from the ground-level elevation at the base of the stack.

(B) under Part (4)(D) of this Paragraph, not greater than one-half mile, except that the portion of a terrain feature may be considered to be nearby which falls within a distance of up to 10 times the maximum height  $[H_t]$  of the feature, not to exceed two miles if such feature achieves a height  $[h_t]$  one-half mile from the stack that is at least 40 percent of the GEP stack height determined by Part (4)(C) of this Paragraph or 26 meters, whichever is greater, as measured from the ground-level elevation at the base of the stack. The height of the structure or terrain feature is measured from the ground-level elevation at the base of the stack.

(6) "Excessive concentrations" means, for the purpose of determining good engineering practice stack height under Part (4)(D) of this Paragraph:

(A) for sources seeking credit for stack height exceeding that established under Part (4)(B) or (C) of this Paragraph, a maximum ground-level concentration due to emissions from a stack due in whole or part to downwash, wakes, and eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and which contributes to a total concentration due to emissions from all sources that is greater than an ambient air quality standard. For sources subject to Rule .0530 of this Section, an excessive concentration alternatively means a maximum ground-level concentration due to emissions from a stack due in whole or part to downwash, wakes, or eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and greater than a prevention of significant deterioration increment. The allowable emission rate to be used in making demonstrations under this part shall

be prescribed by the new source performance standard that is applicable to the source category unless the owner or operator demonstrates that this emission rate is infeasible. Where such demonstrations are approved by the Director, an alternative emission rate shall be established in consultation with the source owner or operator;

(B) for sources seeking credit after October 11, 1983, for increases in existing stack heights up to the heights established under Part (4)(B) or (C) of this Paragraph:

(i) a maximum ground-level concentration due in whole or part to downwash, wakes or eddy effects as provided in Part (A) of this Subparagraph, except that the emission rate specified by any applicable Rule in this Subchapter (or, in the absence of such a limit, the actual emission rate) shall

- be used, or
    - (ii) the actual presence of a local nuisance (odor, visibility impairment, or pollutant concentration) caused by the existing stack, as determined by the Director; and
  - (C) for sources seeking credit after January 12, 1979, for a stack height determined under Part (4)(B) or (C) of this Paragraph where the Director requires the use of a field study or fluid model to verify GEP stack height, for sources seeking stack height credit after November 9, 1984 based on the aerodynamic influence of cooling towers, and for sources seeking stack height credit after December 31, 1970 based on the aerodynamic influence of structures not adequately represented by Part (4)(B) or (C) of this Paragraph, a maximum ground-level concentration due in whole or part to downwash, wakes, or eddy effects that is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects.
- (7) "Emission limitation" means a requirement established by this Subchapter [ ]<sup>8</sup> that limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirements that limit the level of opacity, prescribe equipment, set fuel specifications, or prescribe operation or maintenance procedures for a source to assure continuous emission reduction.
  - (b) With the exception stated in Paragraphs (c) and (d) of this Rule, the degree of emission limitations required by any Rule in this Subchapter shall not be affected by:
    - (1) that amount of a stack height that exceeds good engineering practice; or
    - (2) any other dispersion technique.
  - (c) Paragraph (b) shall not apply to:
    - (1) stack heights in existence or dispersion techniques implemented before December 31, 1970, except where pollutants are being emitted from such stacks or using such dispersion techniques by sources, as defined in Section 111(a)(3)

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<sup>8</sup>See 3B .0102(a)(10); "or a local air quality program certified by the Commission" deleted from the County Code.

- of the Clean Air Act, which were constructed, or reconstructed, or for which major modifications, as defined in Rules .0530(b) and .0531(b) of this Section were carried out after December 31, 1970; or
  - (2) coal-fired steam electric generating units, subject to provisions of Section 118 of the federal Clean Air Act, which began operation before July 1, 1957, and whose stacks were constructed under a construction contract awarded before February 8, 1974.

However, these exemptions shall not apply to a new stack that replaces a stack that is exempted by Subparagraphs (1) and (2) of this Paragraph. These exemptions shall not apply to a new source using a stack that is exempted by Subparagraphs (1) and (2) of this Paragraph.

- (d) This Rule shall not restrict the actual stack height of any source. (Ord. No. 9-94,

12-19-94)

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## Section .0535

## Excess Emissions Reporting and Malfunctions

(a) For the purpose of this Rule the following definitions apply:

- (1) "Excess Emissions" means an emission rate that exceeds any applicable emission limitation or standard allowed by any Rule in Sections 3D-0500, 0900, 1200, or 1400; or by a permit condition; or that exceeds an emission limit established in a permit issued under Forsyth County Code, Subchapter 3Q-0700.
- (2) "Malfunction" means any unavoidable failure of air pollution control equipment, process equipment, or process to operate in a normal and usual manner that results in excess emissions. Excess emissions during periods of routine start-up and shut-down of process equipment shall not be considered a malfunction. Failures caused entirely or in part by poor maintenance, careless operations or any other upset condition within the control of the emission source are not considered a malfunction.
- (3) "Start-up" means the commencement of operation of any source that has shut-down or ceased operation for a period of time sufficient to cause temperature, pressure, process, chemical, or pollution control device imbalance that would result in excess emission.
- (4) "Shut-down" means the cessation of the operation of any source for any purpose.

(b) This Rule does not apply to sources to which Sec. 0524, 1110, or 1111 applies unless excess emissions exceed an emission limit established in a permit issued under Forsyth County Code, Section 3Q-0700 that is more stringent than the emission limit set by Sec. 3D-0524, 1110, or 1111.

(c) (Paragraph (c) is not included in Forsyth County's portion of the State Implementation Plan.)

(d) All electric utility boiler units shall have a malfunction abatement plan approved by the Director as satisfying the requirements of Subparagraphs (1) through (3) of this Paragraph. In addition, the Director may require any other source to have a malfunction abatement plan approved by the Director as satisfying the requirements of Subparagraphs (1) through (3) of this Paragraph. If the Director requires a malfunction abatement plan for a source other than an electric utility boiler, the owner or operator of that source shall submit a malfunction abatement plan within 60 days after receipt of the Director's request. The malfunction abatement plans of electric utility boiler units and of other sources required to have them shall be implemented when a malfunction or other breakdown occurs. The purpose of the malfunction abatement plan is to prevent, detect, and correct malfunctions or equipment failures that could result in excess emissions. A malfunction abatement plan shall contain:

- (1) a complete preventive maintenance program including:
  - (A) the identification of individuals or positions responsible for inspecting, maintaining and repairing air cleaning devices;
  - (B) a description of the items or conditions that will be inspected and maintained;
  - (C) the frequency of the inspection, maintenance services, and repairs; and
  - (D) an identification and quantities of the replacement parts that shall be maintained in inventory for quick replacement;
- (2) an identification of the source and air cleaning operating variables and

- outlet variables, such as opacity, grain loading, and pollutant concentration, that may be monitored to detect a malfunction or failure; the normal operating range of these variables and a description of the method of monitoring or surveillance procedures and of informing operating personnel of any malfunctions, including alarm systems, lights or other indicators; and
- (3) a description of the corrective procedures that the owner or operator will take in case of a malfunction or failure to achieve compliance with the applicable rule as expeditiously as practicable but no longer than the next boiler or process outage that would provide for an orderly repair or correction of the malfunction or 15 days, whichever is shorter. If the owner or operator anticipates that the malfunction would continue for more than 15 days, a case-by-case repair schedule shall be established by the Director with the source.

The owner or operator shall maintain logs to show that the operation and maintenance parts of the malfunction abatement plan are implemented. These logs shall be subject to inspection by the Director or his designee upon request during business hours.

(e) The owner or operator of any source required by the Director to have a malfunction abatement plan shall submit a malfunction abatement plan to the Director within six months after it has been required by the Director. The malfunction abatement plan and any amendment to it shall be reviewed by the Director or his designee. If the plan includes the objectives described by Paragraph (d) of this Rule, the Director shall approve it. If the plan does not carry out the objectives described by Paragraph (d) of this Rule, the Director shall disapprove the plan. The Director shall state his reasons for the disapproval. The person who submits the plan shall submit an amendment to the plan to satisfy the reasons for the Director's disapproval within 30 days of receipt of the Director's notification of disapproval. Any person having an approved malfunction abatement plan shall submit to the Director for his approval amendments reflecting changes in any element of the plan required by Paragraph (d) of this Rule or amendments when requested by the Director. The malfunction abatement plan and amendments to it shall be implemented within 90 days upon receipt of written notice of approval.

(f) The owner or operator of a source of excess emissions that last for more than four hours and that results from a malfunction, a breakdown of process or control equipment or any other abnormal conditions, shall:

- (1) notify the Director or his designee of any such occurrence by 9:00 a.m. Eastern time of the Office's next business day of becoming aware of the occurrence and describe:
  - (A) name and location of the facility,
  - (B) the nature and cause of the malfunction or breakdown,
  - (C) the time when the malfunction or breakdown is first observed,
  - (D) the expected duration, and
  - (E) an estimated rate of emissions;
- (2) notify the Director or his designee after the corrective measures have been accomplished;
- (3) submit to the Director within 15 days after the request a written report that includes:
  - (A) name and location of the facility,
  - (B) identification or description of the processes and control devices involved in the malfunction or breakdown,

- (C) the cause and nature of the event,
- (D) time and duration of the violation or the expected duration of the excess emissions if the malfunction or breakdown has not been fixed,
- (E) estimated quantity of pollutant emitted,
- (F) steps taken to control the emissions and to prevent recurrences and if the malfunction or breakdown has not been fixed, steps planned to be taken, and
- (G) any other pertinent information requested by the Director.

After the malfunction or breakdown has been corrected, the Director may require the owner or operator of the source to test the source in accordance with Rule .0501 of this Section to demonstrate compliance.

(g) (Paragraph (g) is not included in Forsyth County's portion of the State Implementation Plan.)

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**Section .0536****Particulate Emissions from Electric Utility Boilers**

(a) The purpose of this Rule is to establish particulate and visible emission limits for the listed units by utilizing control technology to protect the public health and welfare of the County and its citizens.

(b) Notwithstanding Rule .0503 of this Section, emissions of particulate matter from the utility boiler units specified in the following table shall not exceed the maximum emission rate in the table as measured by a stack test conducted in accordance with Rule .0501 of this Section. The results of any stack test shall be reported within 30 days, and the test report shall be submitted within 60 days after the test. In addition to limitations contained in Rule .0521 of this Section, visible emissions from the utility boiler units specified in the table shall not exceed the annual average opacity limits in the table. Each day an annual average opacity value shall be calculated for each unit for the most recent 365-day period ending with the end of the previous day. The average is the sum of the measured non-overlapping six-minute averages of opacity determined only while the unit is in operation divided by the number of such measured non-overlapping six-minute averages. Start-up, shut-down, and non-operating time shall not be included in the annual average opacity calculation, but malfunction time shall be included, Rule .0535 of this Section notwithstanding. The director may approve an alternate method of calculating the annual average opacity if:

- (1) the alternate method is submitted by the electric utility company,
- (2) the director concludes that the alternate method will not cause a systematic or unacceptable difference in calculated values from the specified method, and
- (3) it is mutually agreed that the values calculated using the alternate method can be used for enforcement purposes.

The owner or operator of each unit shall submit a report to the Director by the 30th day following the end of each month. This report shall show for each day of the previous month the calculated annual average opacity of each unit and the annual average opacity limit. If a violation occurs, the owner or operator of the unit shall immediately notify the director.

| <b>Facility</b>           | <b>Boiler<br/>/<br/>Unit</b> | <b>Maximum Emission<br/>Rate (Lbs./Million Btu<br/>of Heat Input)</b> | <b>Annual Average<br/>Opacity Limit<br/>(Percent)</b> |
|---------------------------|------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------|
| <b>Duke Power Company</b> |                              |                                                                       |                                                       |
| Allen                     | 1                            | 0.25                                                                  | 20                                                    |
|                           | 2                            | 0.25                                                                  | 20                                                    |
|                           | 3                            | 0.25                                                                  | 13                                                    |
|                           | 4                            | 0.25                                                                  | 14                                                    |
|                           | 5                            | 0.25                                                                  | 17                                                    |
| Belews Creek              | 1                            | 0.15                                                                  | 17                                                    |

| <b>Facility</b> | <b>Boiler<br/>/<br/>Unit</b> | <b>Maximum Emission<br/>Rate (Lbs./Million Btu<br/>of Heat Input)</b> | <b>Annual Average<br/>Opacity Limit<br/>(Percent)</b> |
|-----------------|------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------|
|                 | 2                            | 0.15                                                                  | 17                                                    |
| Buck            | 5                            | 0.15                                                                  | 10                                                    |
|                 | 6                            | 0.15                                                                  | 10                                                    |
|                 | 7                            | 0.15                                                                  | 6                                                     |
|                 | 8                            | 0.15                                                                  | 8                                                     |
|                 | 9                            | 0.15                                                                  | 10                                                    |
| Cliffside       | 1                            | 0.25                                                                  | 8                                                     |
|                 | 2                            | 0.25                                                                  | 12                                                    |
|                 | 3                            | 0.25                                                                  | 8                                                     |
|                 | 4                            | 0.25                                                                  | 8                                                     |
|                 | 5                            | 0.25                                                                  | 16                                                    |
| Dan River       | 1                            | 0.15                                                                  | 7                                                     |
|                 | 2                            | 0.15                                                                  | 9                                                     |
|                 | 3                            | 0.25                                                                  | 20                                                    |
| Marshall        | 1                            | 0.20                                                                  | 20                                                    |
|                 | 2                            | 0.20                                                                  | 20                                                    |
|                 | 3                            | 0.18                                                                  | 20                                                    |
|                 | 4                            | 0.18                                                                  | 20                                                    |
| Riverbend       | 4                            | 0.12                                                                  | 8                                                     |
|                 | 5                            | 0.12                                                                  | 8                                                     |
|                 | 6                            | 0.12                                                                  | 8                                                     |
|                 | 7                            | 0.12                                                                  | 8                                                     |

| <b>Facility</b>                       | <b>Boiler<br/>/<br/>Unit</b> | <b>Maximum Emission<br/>Rate (Lbs./Million Btu<br/>of Heat Input)</b> | <b>Annual Average<br/>Opacity Limit<br/>(Percent)</b> |
|---------------------------------------|------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------|
| <b>Carolina Power<br/>&amp; Light</b> |                              |                                                                       |                                                       |

|              |   |      |    |
|--------------|---|------|----|
| Asheville    | 1 | 0.12 | 10 |
|              | 2 | 0.12 | 5  |
| Cape Fear    | 5 | 0.20 | 1  |
|              | 6 | 0.20 | 15 |
| Lee          | 1 | 0.25 | 18 |
|              | 2 | 0.13 | 11 |
|              | 3 | 0.25 | 15 |
| Roxboro      | 1 | 0.25 | 15 |
|              | 2 | 0.16 | 20 |
|              | 3 | 0.10 | 25 |
| Sutton       | 1 | 0.11 | 14 |
|              | 2 | 0.11 | 14 |
|              | 3 | 0.11 | 20 |
| Weatherspoon | 1 | 0.14 | 8  |
|              | 2 | 0.14 | 10 |
|              | 3 | 0.15 | 23 |

(c) For the purpose of this Rule, the heat input shall be the total heat content of all fuels burned in the unit during the period of time for which the compliance determination is being made.

(d) Stack tests shall be conducted in accordance with Rule .0501 of this Section, and six-minute average opacity readings shall be recorded during the tests. If a stack test and opacity data are acceptable to the Director, the results shall be used by the owner or operator to update and refine the mass-opacity curve for that unit at least annually or when otherwise requested by the director. The owner or operator of a unit shall notify the director whenever an alteration in the equipment, method of operation, fuel, or other factors, may cause a systematic change in the mass-opacity curve expected to last more than one month.

(e) The owner or operator of units listed in Paragraph (b) of this Rule shall produce each year for each unit at least one stack test conducted in accordance with Rule .0501 of this Section, the results of which are submitted to and accepted by the director and which demonstrate achievement of the maximum emission rate for that unit.

(f) Whenever a stack test shows emissions of particulate matter exceeding the maximum emission rate listed in Paragraph (b) of this Rule, all necessary steps shall be taken to ensure that the emissions of particulate matter do not continue to exceed the maximum emission rate and a retest shall be conducted before the 45th operating day following the day the excess was measured.

(g) Opacity shall be measured using an opacity monitoring system that meets the performance specifications of Appendix B of 40 CFR Part 60. The opacity monitoring system

shall be subjected to a quality assurance program approved by the Director. The owner or operator of each unit subject to this Rule shall have on file with the Director an approved quality assurance program, and shall submit to the Director within the time period of his request for his approval a revised quality assurance program, including at least procedures and frequencies for calibration, standards traceability, operational checks, maintenance, auditing, data validation, and a schedule for implementing the quality assurance program.

(h) The owner or operator of each unit subject to this Rule shall have on file with the Director an approved malfunction abatement plan, and shall submit to the Director within the time period of his request for his approval a revised malfunction abatement plan, in accordance with Rule .0535 (d) and (e) of this Section. The owner or operator shall submit each month for each malfunction and other equipment failures that occurred at each unit during the preceding month a report that meets the requirements of Rule .0535 (f)(3) of this Section. (Ord. No. 9-94, 12-19-94)

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