

FINAL

**North Carolina
Clean Air Act Section 110(l)
Noninterference
Demonstration
For
Air Curtain Burners:
Opacity and Start-up Requirements**



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PREFACE:

This document contains North Carolina's Clean Air Act Section 110(l) noninterference demonstration for the relaxation of opacity and start-up requirements for Air Curtain Burners (Rule 15A NCAC 02D .1904), as submitted to EPA on October 14, 2004 for review and approval as part of the State Implementation Plan. The EPA reference number associated with this SIP submission is NC 110.

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Attachment A - October 14, 2004 Submissions: 15A NCAC 02D .1904 Air Curtain Burners

Attachment B - Public Notice Announcement

CLEAN AIR ACT SECTION 110(I) DEMONSTRATION

1.0 INTRODUCTION

Section 110(l) of the Federal Clean Air Act (CAA), as amended prohibits EPA from approving any proposed State Implementation Plan (SIP) revision that would interfere with the attainment and maintenance of the national ambient air quality standards (NAAQS) in effect at the time of the revision. The following “noninterference demonstration” is provided to show that the 2004 revisions to opacity and start-up requirements for air curtain burners (ACBs) does not interfere with North Carolina’s ability to attain or maintain compliance with the carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), particulate matter (PM), and lead NAAQS.

2.0 BACKGROUND

ACBs are regulated under the state’s authority in Chapter 15A North Carolina Administrative Code (NCAC) Section 02D .1904, Air Curtain Burners, for the control of open burning. The 02D .1904 Rule has been implemented since 1996.

On April 8, 2004, the Environmental Management Commission (EMC) adopted amendments to Rule 02D .1904, Air Curtain Burners. Among other edits, the EMC amended visible emission and start-up requirements in paragraph (b)(8). In a letter dated October 14, 2004, the Division of Air Quality (DAQ) submitted amendments to Rule 02D .1904 for EPA to review and approve as part of the SIP (see Attachment A).

The EPA has not yet taken formal action on this SIP submission (NC 110). It is currently being reviewed as part of a lengthy backlog that the agency is in the process of resolving. As part of this review process, EPA has informed the DAQ that the April 8, 2004 amendments to Rule 02D .1904 constitutes a relaxation in visible emission and start-up requirements, and the DAQ needs to submit a noninterference demonstration to ensure the change will not interfere with attainment and maintenance of NAAQS.

3.0 REVISIONS TO THE 02D .1904 RULES

3.1 What is the revision to the rule?

Revisions to Rule 02D .1904, paragraph (b)(8) in NC 110 consisted of the following key changes:

- ACBs subject to 40 CFR 60 Subpart CCCC¹ must comply with emission limitations specified in 40 CFR 60.2250 which consists of a 10% opacity limit and start-up duration of less than 30 minutes.
- For all other ACBs not subject to Subpart CCCC, the visible emission requirement was revised from 5% opacity to 10% opacity, which is equivalent to the federal regulations under Subpart CCCC. However, the duration of start-up period was revised from 30 minutes to 45 minutes.

In a subsequent revision to 02D .1904, submitted by DAQ on January 31, 2008 as NC 133, new requirements were added to paragraph (b)(8), to comply with federal opacity standards for those sources subject to 40 CFR Part 60 Subpart DDDD², EEEE³, and FFFF⁴.

The EPA is requiring a noninterference demonstration because the agency has determined the following:

- For ACBs subject to Subpart CCCC, the DAQ relaxed the opacity requirement by increasing the limit from 5% to 10%, despite the rule revision made to be consistent with federal regulations. These sources must also comply with the Subpart CCCC start-up duration of less than 30 minutes; therefore, the rule revision does not constitute a relaxation of the start-up requirement for ACBs subject to federal regulations.
- For all other ACBs not subject to Subpart CCCC, the DAQ relaxed the opacity requirement by increasing the limit from 5% to 10% and by increasing the start-up time duration from 30 minutes to 45 minutes.

3.2 How many facilities are affected?

There are currently seven affected ACB facilities. These ACBs are not routinely operational even though they are currently permitted. The primary reason for ACBs is for the mitigation of resultant debris after severe storms. These facilities are located in the eastern part of North Carolina in the Washington and Wilmington regions. One previously permitted facility in Onslow

¹ Title 40 Chapter I Part 60 Subpart CCCC - Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for which Construction Commenced after November 30, 1999 or for which Modification or Reconstruction is commenced on or after June 1, 2001.

² Title 40 Chapter I Part 60 Subpart DDDD - Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction on or before November 30, 1999.

³ Title 40 Chapter I Part 60 Subpart EEEE - Standards of Performance for Other Solid Waste Incineration Units for which Construction is Commenced after December 9, 2004, or for which Modification or Reconstruction is Commenced on or after June 16, 2006.

⁴ Title 40 Chapter I Part 60 Subpart FFFF - Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units that Commenced Construction on or before December 9, 2004.

County became eligible for permit exemption and the permit was rescinded. Table 1 lists these facilities, their location and their most recent emissions information.

Table 1. Affected Facilities and Particulate Matter Emission Inventory

| NC Facility ID | Facility Name | County | PM _{2.5} (TPY) | PM ₁₀ (TPY) | Year ³ | Exempt/Reg Granted? (Y/N) ² |
|----------------|---|-----------|-------------------------|------------------------|-------------------|--|
| 1000112 | Ike Williamson Sand Pit, ACB | Brunswick | 0 | 0 | 2011 | N |
| 1000118 | Carolina Tree and Landscaping | Brunswick | 0 | 0.31 | 2014 | N |
| 2400153 | Frank Horne Construction, Inc. | Columbus | 0 | 0 | 2015 | N |
| 2400161 | C & H Construction, Inc. | Columbus | 0 | 9.7 | 2014 | N |
| 2700033 | Green Acres Land Development - Air Curtain Burner | Currituck | 0 | 0 | 2011 | N |
| 6700161 | Coastal River Investments LLC | Onslow | 3.39 ¹ | 3.39 | 2015 | N |
| 6700152 | Humphrey Minerals and Recycling | Onslow | 0 | 0 | 2014 | Y, permit exempt |

¹Reported as a subset of PM₁₀

²Early in 2016, new rules allow facilities with actual emissions below five tons per year of each specified pollutant and total aggregate actual emissions less than 10 tons per year and that meet other eligibility requirements in the rule are exempt from permitting. Facilities that are not exempt and have total aggregate actual emissions greater than or equal to 5 tons and below 25 tons per year and meet other eligibility requirements in the rule, are eligible for registration instead of obtaining a permit. A facility may choose to keep its permit even though it qualifies for exemption or registration. The facility must continue to comply with all applicable state and federal regulations, and may be subject to state compliance assurance visits.

³Year of latest reported emissions inventory

4.0 NON-INTERFERENCE WITH THE NAAQS

Due to their size and construction commencement date, none of the ACB facilities listed in Table 1 are subject to federal regulations under Subpart CCCC. Therefore, the DAQ is concluding that there would be no change in emissions associated with the alignment of Rule 02D .1904 with federal regulations from such sources. The DAQ is also concluding that because there are no large sources subject to federal regulations, the rule revision does not interfere with the attainment or maintenance of any NAAQS.

The ACB facilities listed in Table 1 are subject to the state-only portion of Rule 02D .1904, paragraph (b)(8). For these sources, the opacity limit was relaxed from 5% to 10% and the start-up time was relaxed from 30 minutes to 45 minutes. The following discussion illustrates that this change has had no impact to air quality since the rule became effective in 2004, and that it will not interfere with the attainment and maintenance of NAAQS in future years.

4.1 Non-Interference with PM NAAQS

In 2014, the EPA Administrator determined that “no area in North Carolina violated the 2012 primary annual PM_{2.5} standard or contributes to a nearby violation of the standard.” North Carolina is in attainment with the 2012 PM_{2.5} NAAQS throughout the state. Three counties, Catawba, Davidson and Guilford are maintenance areas for the previous, less stringent 1997 annual standard. These three counties are in the middle to western part of the state. Since 2014, these areas have continued to attain the 2012 PM_{2.5} NAAQS as well as the 1997 24-hour PM_{2.5} or 2006 24-hour PM₁₀ NAAQS. None of the ACBs are in or near these three counties.

The table below contains the design values for counties in the eastern part of the state closest to the permitted facilities in the Washington and Wilmington regions. The 2015 PM_{2.5} design values are depicted alongside the 2004 design values for the year the EMC adopted amendments to NCAC 02D .1904. None of the permitted or permit exempt facilities are located in the counties where PM_{2.5} monitors are located; however, due to their proximity, it can be concluded that there are no PM_{2.5} attainment issues in this part of state.

Table 2. Comparison of 2004 and 2015 PM_{2.5} Design Values in Eastern North Carolina

| County | AQS Site ID# | 2004 Design Value (µg/m ³) and (% of 1997 NAAQS) | | 2015 Design Value (µg/m ³) and (% of 2012 NAAQS) | |
|-------------|--------------|--|-----------|--|-----------|
| | | Annual | Daily | Annual | Daily |
| Duplin | 37-016-0002 | 9.9 (66) | 23 (35.3) | 7.3 (60.8) | 15 (42.8) |
| Lenoir | 37-107-0004 | 11.2 (74.7) | 26 (40) | ---- | ---- |
| Martin | 37-117-0001 | ---- | ---- | 6.9 (57.5) | 14 (40) |
| New Hanover | 37-129-0002 | 9.9 (66) | 23 (35.3) | 6.5 (54.1) | 14 (40) |
| Onslow | 37-133-0005 | 11.2 (74.7) | 24 (36.9) | ---- | ---- |
| Pitt | 37-147-0005 | 12.1 (80.7) | 28 (43.1) | 7.3 (60.8) | 15 (42.9) |

4.2 Non-Interference with Ozone, CO, SO₂, NO₂, and Lead NAAQS

All of North Carolina is designated attainment of the 1997 and 2008 8-hour ozone NAAQS. The new 2015 8-hour ozone NAAQS is 70 parts per billion (ppb). Based on ozone ambient monitoring data from 2014 through 2016 (preliminary data), all of North Carolina is meeting the 2015 8-hour ozone standard.

The 2010 1-hour NO₂ NAAQS is set at 100 ppb, based on the 3-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations. The annual standard of 53 ppb is based on the annual mean concentration. All NO₂ monitors in the state are measuring below the annual NO₂ standard, and all near-road monitors are measuring below the 1-hour NO₂ standard.

One of the two current NAAQS established by EPA for CO is an 8-hour standard of 9 ppm, measured using the annual second-highest maximum 8-hour concentration for two consecutive years as the design value. The other CO standard is a 1-hour average of 35 ppm, using the second-highest 1-hour average within a given year. All CO monitors in the state are measuring less than 20% of the CO standards.

All monitored areas in the state are attaining the 2010 1-hour SO₂ NAAQS set at 100 ppb. For large SO₂ sources subject to the SO₂ Data Requirements Rule, North Carolina is on track to demonstrate compliance through modeling or monitoring.

The 2008 lead NAAQS is set at 0.15 micrograms per cubic meter (µg/m³), measured as a 3-month rolling average. On November 8, 2011, EPA designated the entire state of North Carolina as unclassifiable/attainment with the standard. In October 2016, the EPA completed its review of the 2008 standard and decided to retain the 2008 standard without any changes. North Carolina's ambient lead levels since the 2008 standard was adopted have remained, and are expected to continue to remain, well below the standard. As explained in North Carolina's 2016-2017 Annual Monitoring Network Plan, the state no longer is required to monitor for lead under EPA monitoring criteria.⁵

The purpose of the revisions to Rule 02D .1904, paragraph (b)(8) was to address visible emissions in the form of particulate matter. Due to their relatively small size and infrequent operations, currently permitted ACB facilities in North Carolina are not believed to be large contributors of NO₂, CO or SO₂ emissions. Based on this reasoning and the fact that all monitors are measuring below the NAAQS, the DAQ has determined that it is unlikely that revisions to Rule 02D .1904, paragraph (b)(8) will result in a violation of the ozone, CO, SO₂, NO₂, or lead NAAQS.

5.0 CONCLUSION

One purpose for the revision to Rule 02D .1904, paragraph (b)(8) was to ensure that ACB facilities subject to federal regulations under Subpart CCCC comply with their corresponding federal requirements. The EPA's stated relaxation in opacity requirement from 5% to 10% (albeit the rule change was to align the state rule with federal requirements), does not affect air quality because no ACB facilities were or are subject to federal regulations.

For ACB facilities not subject to federal regulations, the second purpose of the rule revision was to change the opacity requirement from 5% to 10% and the duration of start-up period from 30 minutes to 45 minutes.

⁵ 2016-2017 Annual Monitoring Network Plan for the North Carolina Division of Air Quality, Volume 1, Network Descriptions, July 1, 2016, pages 112-115, https://ncdenr.s3.amazonaws.com/s3fs-public/Air%20Quality/monitor/monitoring_plan/new_plan/NC%20Network%20Plan.pdf.

North Carolina is in attainment for the 2010 SO₂ NAAQS, 2010 NO₂ NAAQS, 2012 PM_{2.5} and PM₁₀ NAAQS, 2008 Lead NAAQS, 2011 CO NAAQS, 2008 Ozone NAAQS and the 2015 Ozone NAAQS. It is conceivable that the rule revision could result in minor changes to emissions from very small sized facilities that operate intermittently. However, in the twelve years since the rule has been effective, ambient air quality concerns have not surfaced in the areas where ACB facilities are located. Therefore, the DAQ has determined that the rule revision will not interfere with the attainment or maintenance of the NAAQS.