

<p>NORTH CAROLINA DIVISION OF AIR QUALITY</p> <p style="text-align: center;">Application Review</p> <p>Issue Date: XX/XX/XXXX</p>		<p>General Title V Permit for New Air Curtain Incinerators</p>					
<p>This engineering review is applicable to new commercial air curtain incinerators that burn greater than 35 tons per day of 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste. <i>[Most all of this header info below comes from IBEAM but entered some default info for the greenfield ACIs subject NSPS CCCC]</i></p>							
<p style="text-align: center;">Facility Data</p> <p>Applicant (Facility's Name): Facility Name from IBEAM</p> <p>Facility Address: Facility Name And Address from IBEAM</p> <p>SIC: 4953 / Refuse Systems NAICS: 562213 / Solid Waste Combustors and Incinerators</p> <p>Facility Classification: Before: N/A After: General Title V Fee Classification: Before: N/A After: General Title V</p>		<p style="text-align: center;">Permit Applicability (this application only)</p> <p>SIP: 15A NCAC 02D .1904 NSPS: 15A NCAC 02D .0524 – 40 CFR 60 Subpart CCCC (only 40 CFR 60.2242 through 60.2260) NESHAP: N/A PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: 15A NCAC 02D .1806, 02Q .0509 (general authority), 02Q .0510 (multiple temporary sites)</p>					
Contact Data			Application Data				
<p style="text-align: center;">Facility Contact</p> <p style="text-align: center;">Facility Contact Name, Title, Phone and Address from IBEAM</p>	<p style="text-align: center;">Authorized Contact</p> <p style="text-align: center;">Authorized Contact Name, Title, Phone and Address from IBEAM</p>	<p style="text-align: center;">Technical Contact</p> <p style="text-align: center;">Technical Contact Name, Title, Phone and Address from IBEAM</p>	<p>Application Number: App. No. from IBEAM Date Received: Date from IBEAM Application Type: Greenfield Application Schedule: General Title V Existing Permit Data Existing Permit Number: N/A Existing Permit Issue Date: N/A Existing Permit Expiration Date: N/A</p>				
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
<No Inventory>							
<p>Review Engineer: Engineer's Name</p> <p>Review Engineer's Signature: Date: XX/XX/XXXX</p>				<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue: Permit No. from IBEAM Permit Issue Date: XX/XX/XXXX Permit Expiration Date: XX/XX/XXXX</p>			

I. Introduction:

An air curtain incinerator (ACI) means a stationary or portable incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. Air curtain incinerators are different from conventional combustion devices which typically have enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.

Section 129 of the Clean Air Act directs the Environmental Protection Agency's (EPA) Administrator to develop regulations under Section 111 of the Act limiting emissions of nine air pollutants (i.e., particulate matter, carbon monoxide, dioxins/furans, sulfur dioxide, nitrogen oxides, hydrogen chloride, lead, mercury, and cadmium) from four categories of solid waste incineration units: municipal solid waste; hospital, medical and infectious solid waste; commercial and industrial solid waste; and other solid waste.

EPA promulgated the New Source Performance Standards (NSPS) and Emission Guidelines (EG) to reduce air pollution from commercial and industrial solid waste incineration (CISWI) units, under Subparts CCCC and DDDD, respectively. Those standards and guidelines apply to incinerators, also known as CISWI units, used by commercial and industrial facilities to burn non-hazardous solid waste. NSPS Subpart CCCC applies to new CISWI units that commenced construction after June 4, 2010, or that commenced reconstruction or modification after August 7, 2013 while NSPS Subpart DDDD applies to existing CISWI units.

An air curtain incinerator is a CISWI unit that shall meet certain provisions of NSPS Subpart CCCC if the following conditions are met. Pursuant to 40 CFR 60.2020, air curtain incinerators that burn only the materials listed in paragraphs (1) through (3) below are only required to meet the requirements under “Air Curtain Incinerators” (40 CFR 60.2245 through 60.2260).

- (1) 100 percent wood waste: *Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include: Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands, construction, renovation, or demolition wastes, or clean lumber.*
- (2) 100 percent clean lumber: *Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.*
- (3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste: *Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.*

Also, the owner or operator of each CISWI and air curtain incinerator (ACI) shall apply for and obtain a Title V operating permit pursuant to 40 CFR 60.2242 as required by Section 129(e) and Title V of the Clean Air Act.

Therefore, air curtain incinerators shall be subject to Section 15A NCAC 02Q .0500, Title V Procedures. The owner or operator of a new ACI as defined above and in 40 CFR 60.2015 that meets the requirements in 40 CFR 60.2020(i) shall obtain a General Title V Operating Permit pursuant to 15A NCAC 02Q .0509 Permitting of Numerous Similar Facilities. Pursuant to 15A NCAC 02Q .0509, the Director may issue, after notice and opportunity for public participation provided in 15A NCAC 02Q .0521, a permit to cover numerous similar facilities or sources.

II. Purpose of this Engineering Evaluation:

The purpose of this engineering review is to evaluate this proposed ACI under the rules and standards applicable for a “new commercial air curtain incinerator” that burns greater than 35 tons per day while burning 100 percent wood waste, 100 percent clean lumber, or 100 percent mixture of only wood waste, clean lumber and/or yard waste.

This new (*commenced construction after December 9, 2004*) Firebox Model No. manufactured by Manufacturer, can burn Mfg. spec. XX tons per hour of clean wood waste consisting of trees, logs, large brush, stumps relatively free of soil, and clean lumber. The Firebox Model No. is a self-contained, completely assembled above ground firebox with a refractory lined burn-container for permanent applications that is ready for immediate use. The Firebox Model No. utilizes *Specify a Diesel Engine Info OR electricity* to power its fan. The Firebox Model No.’s firebox has the following dimensions: Firebox dimensions (L × W × H). The Firebox Model No. can be lifted onto the transport trailer by a crane. These skid-mounted systems are designed and constructed to optimize the air curtain concept. High velocity air is blown across and down at an optimum angle into the box creating the air curtain on top and rotational turbulence within the firebox. The high velocity air creating rotational turbulence provides an oxygen enriched environment in the combustion zone that accelerates the combustion process (similar to the effect of fanning a fire). The temperature within the firebox is usually above 2,000 °F. The high velocity air over the firebox creates an air curtain that traps unburned particulate until it is completely consumed. Nearly complete combustion is achieved with minimal amounts of escaped particulates, virtually eliminating smoke with proper operation of the unit.

An air dispersion modeling assessment (see Section IV, page 5 of this review) was completed to demonstrate compliance with applicable State Ambient Air Quality Standards (SAAQS) for total suspended particulate (TSP) and National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 micrometers or less (PM10) and particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM2.5).

III. Application Chronology

Date	Event
XX XX, XXXX	Received application
XX XX, XXXX	Sent acknowledgement letter with ePay option, and \$XXXX fee paid via ePay.
XX XX, XXXX	Sent info and site map for PM modeling to Air Quality Analysis Branch (AQAB) Supervisor.
XX XX, XXXX	Received PM modeling approval memo from AQAB Meteorologist.
XX XX, XXXX	Sent Draft permit and review to Supervisor, Applicant, Regional Office, SSCB.
XX XX, XXXX	Received XX comments from Supervisor.
XX XX, XXXX	Received XX comments from the applicant.
XX XX, XXXX	Received XX comments from the regional office.
XX XX, XXXX	Permit signed by Permitting Section Chief.

IV. Regulatory Review:

A. 15A NCAC 02D .1904: AIR CURTAIN INCINERATORS

1. Air quality permits are required for the following:
 - a. New and existing air curtain incinerators subject to 40 CFR 60.2245 through 60.2260 that combust the following materials:
 - i. 100 percent wood waste;
 - ii. 100 percent clean lumber;
 - iii. 100 percent yard waste; or
 - iv. 100 percent mixture of only wood waste, clean lumber, and yard waste.
 - b. New and existing temporary air curtain incinerators used at industrial, commercial, institutional, or municipal sites where a temporary air curtain incinerator is an air curtain incinerator whose owner or operator moves the air curtain incinerator to another site and operates it for land clearing or right-of-way maintenance at that site at least once during the term of its permit.
2. Temporary-use air curtain incinerators used in disaster recovery are excluded from the requirements of 15A NCAC 02D .1904 if the following conditions are met:
 - a. the air curtain incinerator meets the definition of a temporary-use air curtain incinerators used in disaster recovery as defined in 15A NCAC 02D .1904(b)(7);
 - b. the air curtain incinerator meets all the requirements pursuant to 40 CFR 60.2969 or 60.3061, as applicable; and
 - c. the air curtain incinerator is operated in a manner consistent with the operations manual for the air curtain incinerator and the charge rate during all periods of operation is less than or equal to the lesser of 35 tons per day or the maximum charge rate specified by the manufacturer of the air curtain incinerator.
3. Air curtain incinerators shall be subject to 15A NCAC 02Q .0500 and the following requirements:
 - a. The owner or operator of a new or existing permanent air curtain incinerator shall obtain a General Title V Operating Permit pursuant to 15A NCAC 02Q .0509.
 - b. The owner or operator of a new or existing temporary air curtain incinerator shall obtain a General Title V Operating Permit pursuant to 15A NCAC 02Q .0510.
 - c. The owner or operator of an existing permanent or temporary air curtain incinerator shall complete and submit a permit application no later than September 1, 2020.
 - d. The owner or operator of a new permanent or temporary air curtain incinerator shall complete and submit a permit application 60 days prior to the date the unit commences operation.

- e. The owner or operator of an existing permanent or temporary air curtain incinerator that is planning to close rather than obtaining a permit pursuant to 15A NCAC 02Q .0509 or 15A NCAC 02Q .0510 shall submit a closure notification to the Director no later than September 1, 2020.
4. Air curtain incinerators shall comply with the following conditions and stipulations:
 - a. The operation of air curtain incinerators in particulate and ozone nonattainment areas shall cease in a county that the Department or the Forsyth County Office of Environmental Assistance and Protection has forecasted to be an Air Quality Action Day Code “Orange” or above during the 24-hour time period covered by that Air Quality Action Day;
 - b. The wind direction at the time that the burning is initiated and the wind direction as forecasted by the National Weather Service during the time of the burning shall be away from any area, including public roads within 250 feet of the burning as measured from the edge of the pavement or other roadway surface, which may be affected by smoke, ash, or other air pollutants from the burning;
 - c. No fires shall be started or material added to existing fires when the North Carolina Forest Service, Fire Marshal, or other governmental agency has banned burning for that area;
 - d. Burning shall be conducted only between the hours of 8:00 a.m. and 6:00 p.m. No combustible materials shall be added to the air curtain incinerator prior to or after this time period;
 - e. The air curtain incinerator shall not be operated more than the maximum source operating hours-per-day and days-per-week. The maximum source operating hours-per-day and days-per-week shall be set to protect the ambient air quality standard and prevention of significant deterioration (PSD) increment for particulate. The maximum source operating hours-per-day and days-per-week shall be determined using the modeling procedures in 15A NCAC .02D .1106(b), (c), and (f). This Subparagraph shall not apply to temporary air curtain incinerators;
 - f. Air curtain incinerators shall meet manufacturer's specifications for operation and upkeep to ensure complete burning of material charged into the pit. Manufacturer's specifications shall be kept on site and be available for inspection by Division staff;
 - g. The owner or operator of an air curtain incinerator shall allow the ashes to cool and water the ash prior to its removal to prevent the ash from becoming airborne.
 - h. Only distillate oil, kerosene, diesel fuel, natural gas, or liquefied petroleum gas may be used to start the fire; and
 - i. The location of the burning shall be at least 300 feet from any dwelling, group of dwellings, or commercial or institutional establishment, or other occupied structure not located on the property on which the burning is conducted. The regional office supervisor may grant exceptions to the setback requirements if a signed, written statement waiving objections to the air curtain burning is obtained from a resident or an owner of each dwelling, commercial or institutional establishment, or other occupied structure within 300 feet of the burning site.

In case of a lease or rental agreement, the lessee or renter, and the property owner shall sign the statement waiving objections to the burning. The statement shall be submitted to and approved by the regional office supervisor before initiation of the burn. Factors that the regional supervisor shall consider in deciding to grant the exception include: all the persons who need to sign the statement waiving the objection have signed it; the location of the burn; and the type, amount, and nature of the combustible substances.
5. **Emission Limitations** [15A NCAC 02D .1904(f)]
 - a. The owner or operator of an existing air curtain incinerators shall meet the following opacity limits:
 - i. Maintain opacity to less than or equal to 35 percent opacity (as determined by the average of 3 1-hour blocks consisting of 10 6-minute average opacity values) during startup of the air curtain incinerator, where startup is defined as the first 30 minutes of operation.
 - ii. Maintain opacity to less than or equal to 10 percent opacity (as determined by the average of 3 1-hour blocks consisting of 10 6-minute average opacity values) at all times, other than during startup or during malfunctions.
 - b. The owner or operator of a new air curtain incinerator shall meet the opacity limits specified above within 60 days after air curtain incinerator reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.
6. **Testing** [15A NCAC 02Q .0508(f)]
 - a. All initial and annual opacity tests shall be conducted using 40 CFR 60 Appendix A-4 Test Method 9 to

- determine compliance with the opacity limitations specified in A.5.a. above.
- b. The owner or operator of an existing air curtain incinerator shall conduct an initial performance test for opacity as specified in 40 CFR 60.8 on or before 90 days after the effective date of this Rule.
 - c. The owner or operator of a new air curtain incinerator shall conduct an initial performance test for opacity as specified in 40 CFR 60.8 within 60 days after achieving the maximum charge rate at which the affected air curtain incinerator will be operated, but not later than 180 days after initial startup of the air curtain incinerator.
 - d. After the initial test for opacity, the owner or operator of a new or existing air curtain incinerator subject to 15A NCAC 02D .1904 shall conduct annual opacity tests on the air curtain incinerator no more than 12 calendar months following the date of the previous test.
 - e. The owner or operator of an existing air curtain incinerator that has ceased operations and is restarting after more than 12 months since the previous test shall conduct an opacity test upon startup of the unit.

Recordkeeping and Reporting [15A NCAC 02Q .0508(f)]

7. Prior to commencing construction of an air curtain incinerator, the owner or operator of a new air curtain incinerator shall submit the following information to the Director:
 - a. a notification of intent to construct an air curtain incinerator;
 - b. the planned initial startup date of the air curtain incinerator; and
 - c. the materials planned to be combusted in the air curtain incinerator.
8. The owner or operator of a new or existing air curtain incinerator shall do the following:
 - a. keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format for five years;
 - b. make all records available for submission to the Director or for an inspector's onsite review;
 - c. report the results of the initial and annual opacity tests as the average of 3 1-hour blocks consisting of 10 6-minute average opacity values;
 - d. submit initial opacity test results to the Division no later than 60 days following the initial test and submit annual opacity test results within 12 months following the previous report;
 - e. submit initial and annual opacity test reports to the Division as electronic or paper copy on or before the applicable submittal date; and
 - f. keep a copy of the initial and annual reports onsite for a period of five years.
9. In addition to complying with the requirements of 15A NCAC 02D .1904, an air curtain incinerator subject to 40 CFR Part 60, Subpart CCCC, shall also comply with 40 CFR 60.2245 through 60.2260.

15A NCAC 02D .1904 requirements will continue to apply unless NSPS 40 CFR Part 60 Subpart CCCC requirements apply as detailed in the rule. Compliance is expected with 02D .1904 assuming the operating, testing and recordkeeping requirements will be met with proper operation of the air curtain incinerator.

Pursuant to 15A NCAC 02D .1904(c)(5), the dispersion modeling analysis of the ACI's PM emissions was approved by the AQAB Meteorologist via memorandum dated XX XX, XXXX, shows compliance with the TSP SAAQS, and PM₁₀ and PM_{2.5} NAAQS as per 15A NCAC 02D Sections .0403, .0409, and .0410, respectively. No further restrictions will be required for the ACI based on the maximum daily operating hours of 10 hours (8am-6pm) per 15A NCAC 02D .1904(c)(4). (See Table 1 - Maximum Modeled PM Impacts and Modeled Emission Rates below).

Table 1.

Maximum Modeled PM Impacts

Pollutant	Averaging Period	Background Concentration (µg/m ³)	Modeled Impact (µg/m ³)	Total (µg/m ³)	AAQS (µg/m ³)	% AAQS
PM2.5	24-hour	XX	XX	XX	XX	XX
	Annual	XX	XX	XX	XX	XX
PM10	24-hour	XX	XX	XX	XX	XX
TSP	24-hour	--	XX	XX	XX	XX
	Annual	--	XX	XX	XX	XX

[ALL MODELING TABLE DATA XX FROM AQAB METEROLOGIST'S MEMO]

Table 2. Modeled Release Parameters for Point Sources

Model ID	Source Description	X-utm (m)	Y-utm (m)	Elev. (m)	Release Ht. (m)	Exit Temp. (K)	Exit Vel. (m/s)	Stack Diam. (m)	CAPped or HORIZontal?
ACI	ACI	XX	XX	XX	XX	XX	XX	XX	XX

Table 3. Modeled Emission Rates (lb/hr)

Model ID	Description	PM _{2.5} 24-hour	PM _{2.5} Annual	PM ₁₀ 24-hour	TSP 24-hour	TSP Annual
ACI	ACI	XX	XX	XX	XX	XX

B. 15A NCAC 02D .0524 – New Source Performance Standards (NSPS)

Air curtain incinerators also classified as Commercial and Industrial Solid Waste Incineration (CISWI) units are subject to 15A NCAC 02D .0524 - NSPS 40 CFR 60 Subpart CCCC for those ACIs that commence construction after June 4, 2010, or for those ACIs units that commence modification or reconstruction on or after August 7, 2013.

1. 15A NCAC 02D .0524: NSPS 40 CFR PART 60 SUBPART CCCC — Standards of Performance for Commercial and Industrial Solid Waste Incineration Units

- a. The Permittee shall comply with all applicable provisions, including the notification, testing, monitoring, recordkeeping and reporting requirements contained in Environmental Management Commission Standard 15A NCAC 02D .0524 "New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60 Subpart CCCC, including Subpart A "General Provisions."
 - i. Air curtain incinerators that burn only the materials listed in subparagraphs (a)(i)(1) through (3) below are only required to meet the requirements under “Air Curtain Incinerators” (40 CFR 60.2245 through 60.2260).
 - (1) 100 percent wood waste: *Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include: Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands, construction, renovation, or demolition wastes, or clean lumber.*
 - (2) 100 percent clean lumber: *Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.*
 - (3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste: *Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.*
[15A NCAC 02D .0524, 40 CFR 60.2020]
 - ii. An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. *(Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)*
[15A NCAC 02D .0524, 40 CFR 60.2245]

Emission Limitations [15A NCAC 02D .0524, 40 CFR 60.2250]

- b. Visible emissions from the air curtain incinerator shall not be more than 10 percent opacity (as determined

by the average of three 1-hour blocks consisting of ten 6-minute average opacity values), except as described in paragraph c. below.

- c. Visible emissions from the air curtain incinerator shall not be more than 35 percent opacity (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values) during the startup period that is within the first 30 minutes of operation.

Testing [15A NCAC 02D .0524, 40 CFR 60.2255]

- d. Within 60 days after your air curtain incinerator reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, the Permittee shall conduct the following performance tests:
 - i. Use Method 9 of Appendix A of 40 CFR Part 60 and in accordance with General Condition JJ to determine compliance with the opacity limitations.
 - ii. Conduct an initial test for opacity as specified in 40 CFR 60.8.
- e. After the initial test for opacity, the Permittee shall conduct annual tests no more than 12 calendar months following the date of your previous test.
If the results of these tests are above the limit given in Section B.1.b and c. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Recordkeeping/Reporting [15A NCAC 02D .0524, 40 CFR 60.2260]

- f. The Permittee shall record, maintain and report the following:
 - i. Prior to commencing construction on your air curtain incinerator, submit the three items described in subparagraphs (f)(i)(1) through (3) below.
 - (1) Notification of your intent to construct the air curtain incinerator.
 - (2) Planned initial startup date.
 - (3) Types of materials you plan to burn in your air curtain incinerator.
 - ii. Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 years.
 - iii. Make all records available for submittal to the Administrator or for an inspector's onsite review.
 - iv. Submit the results (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values) of the initial opacity tests no later than 60 days following the initial test. Submit annual opacity test results within 12 months following the previous report.
 - v. Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date.
 - vi. Keep a copy of the initial and annual reports onsite for a period of 5 years.

Compliance is expected with 15A NCAC 02D .0524 NSPS Subpart CCCC assuming the opacity limits, testing, recordkeeping and reporting requirements will be met with proper operation of the air curtain incinerator.

2. NSPS 40 CFR Part 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

[Engineer's note: use one of the following 2 MACT statements:]

If this ACI utilizes a diesel engine, then use next statement [Diesel engine statement 1]

NSPS Subpart IIII does apply to this ACI that utilizes **Enter diesel engine info and specs from mfg.** considered to be an insignificant activity to power its fan. Compliance is expected.

If this ACI is powered by electricity, then use next statement [Electricity statement 2]

NSPS Subpart IIII does not apply to this ACI that utilizes electricity to power its fan.

C. 15A NCAC 02D .1111 – Maximum Achievable Control Technology (MACT)

[Engineer's note: use one of the following 2 MACT statements:]

If this ACI utilizes a diesel engine, then use next statement [Diesel engine statement 1]

MACT Subpart ZZZZ would normally apply to this ACI that utilizes **Enter diesel engine info and specs from mfg.** to power its fan; however, the facility will be an area source for hazardous air pollutants (HAPs).

Therefore, Generally Available Control Technology (GACT) Subpart ZZZZ will apply to this ACI that is an insignificant activity. Compliance is expected.

If this ACI is powered by electricity, then use next statement [Electricity statement 2]

MACT Subpart ZZZZ does not apply to this ACI that utilizes electricity to power its fan.

D. 15A NCAC 02D .1806 – Control and Prohibition of Odorous Emissions (State-Enforceable Only Requirement)

Air curtain incinerators may have some objectionable odors beyond the facility's boundary, and therefore are subject to 15A NCAC 02D .1806 for control and prohibition of odorous emissions. The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary. Compliance is expected with 02D .1806 with proper operation of the air curtain incinerator.

E. 15A NCAC 02Q .0700 - Toxic Air Pollutant Procedures (State-only requirement)

This new ACI is subject to EPA promulgated NSPS to reduce air pollution from CISWI units under Subpart CCCC. Those standards apply to incinerators, also known as CISWI units, used by other facilities to burn non-hazardous solid waste. ACIs can be CISWI units. However, pursuant to 40 CFR 60.2020(1) ACIs that burn only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste are only subject to 40 CFR 60.2245 through 60.2260 of the NSPS that focus on opacity limitation and are exempt from all other requirements of the subpart that are focused on the limitation of criteria pollutants (e.g. carbon monoxide, particulate matter), and hazardous air pollutants (HAP) (e.g. cadmium, dioxins/furans).

The Federal NSPS air quality concern for ACIs burning only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste, is for opacity only. Similarly, the State rule for air curtain burners (15A NCAC 02D .1904) burning only collected land clearing and yard waste materials focuses only on opacity as well and refers to the specific Federal NSPS requirements for opacity if they apply.

The Federal NSPS requirements for ACIs burning only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste are for opacity only (not HAP), and there is not a Federal MACT that regulates ACIs. The State rule for Toxic Air Pollutants (TAPs) would not be of concern for ACIs burning only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste.

Therefore, ACIs burning only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste would not need to demonstrate compliance with the State-only TAP requirements.

F. North Carolina General Statute 143-215.108: Control of Sources of Air Pollution; Permits Required (State-Enforceable Only)

Prior to construction and operation of the facility under this permit, the Permittee shall comply with all lawfully adopted local ordinances, including those cited in the determination, that apply to the facility at the time of construction or operation of the facility. The local zoning authority shall have the responsibility of enforcing all lawfully adopted local zoning or subdivision ordinances. [NCGS 143-215.108(f)]

G. 15A NCAC 02Q .0509: Permitting of Numerous Similar Facilities

Air curtain incinerators that burn only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste are very similar facilities with regard to operation and resulting emissions and may be granted a General Title V Permit by the Director in accordance with 15A NCAC 02Q .0509.

1. 15A NCAC 02Q .0509: Permitting of Numerous Similar Facilities

- a. The Director may issue, after notice and opportunity for public participation provided in 15A NCAC 02Q .0521 of this Section (Title V Procedures), a permit to cover numerous similar facilities or sources.
- b. The Director shall not issue a permit under this Rule unless the following conditions are met:
 - i. There is no unique difference that would require special permit conditions for any individual facility; and
 - ii. No unique analysis is required for any facility covered under the permit.
- c. A permit issued under this Rule shall comply with all the requirements of this Section.
- d. A permit issued under this Rule shall identify criteria by which facilities or sources may qualify for the permit. To facilities or sources that qualify, the Director shall grant the terms and conditions of the permit.
- e. The facility or source shall be subject to enforcement action for operating without a permit if the facility or source is later determined not to qualify for the terms and conditions of the permit issued under this Rule.
- f. Sources subject to Title IV shall not be eligible for a permit issued under this Rule.
- g. The owner or operator of a facility or source that qualifies for a permit issued under this Rule shall apply for coverage under the terms of the permit issued under this Rule or shall apply for a regular permit under this Section.
- h. The Division need not repeat the public participation procedures required under 15A NCAC 02Q .0521 of this Section (Title V Procedures) when it grants a request by a permit applicant to operate under a permit issued under this Rule.

The air curtain incinerator meets the above criteria, and the Director has granted the terms and conditions for a General Title V Permit for air curtain incinerators that burn only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste.

H. 15A NCAC 02Q .0510: Permitting of Facilities at Multiple Temporary Sites

Air curtain incinerators that burn only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste are similar operations that may operate at multiple temporary locations, and therefore may be issued a single General Title V Permit authorizing emissions at multiple temporary sites by the Director in accordance with 15A NCAC 02Q .0510.

1. 15A NCAC 02Q .0510: Permitting of Facilities at Multiple Temporary Sources

- a. The Director may issue a single permit authorizing emissions from similar operations by the same facility owner or operator at multiple temporary sites based on the following factors:
 - i. No facility shall qualify for a permit for multiple temporary sites unless the operation involves at least one change of site during the term of the permit.
 - ii. Sources subject to Title IV shall not be eligible for a permit pursuant to 15A NCAC 02Q .0510.
 - iii. Permits for facilities at multiple temporary sites shall include:
 - (1) identification of each site;
 - (2) conditions that will assure compliance with all applicable requirements at all authorized locations;
 - (3) requirements that the permittee notify the Division at least 10 days in advance of each change of location;
 - (4) conditions that assure compliance with all other provisions of this Section.
- b. The Permittee shall notify the Division in writing at least 10 days in advance of each change of location.

If the air curtain incinerator meets the above criteria, and the Director may issue a General Title V Permit for air curtain incinerators that burn only 100 percent wood waste, 100 percent clean lumber, and 100 percent mixture of only wood waste, clean lumber and/or yard waste at multiple temporary sites.

V. PSD, Attainment Status, 112(r), CAM

PSD

This facility is currently minor for PSD purposes.

[Engineer's note: use one of the following 3 Increment statements:]

[(Increment statement 1) - For counties that have triggered PSD increment tracking with no increases in the pollutants that have been triggered use this paragraph:]

XXXXX County has triggered increment tracking under PSD for **[list pollutant(s)]**. However, this permit modification/renewal does not consume or expand increments for any pollutants.

[(Increment statement 2) - For counties that have triggered PSD increment tracking WITH emission increases in only the pollutants that have been triggered]

XXXXX County has triggered increment tracking under PSD for [list pollutant(s)]. This modification/renewal will result in an increase in YYYY pounds per hour of pollutant A, ZZZZ pounds per hour of pollutant B, etc. [list emissions for each triggered pollutant]

[(Increment statement 3) - For counties that have NOT triggered PSD increment tracking]

XXXXX County has not triggered increment tracking under PSD for any pollutants, so no tracking is required.

Attainment Status

This facility is in XXsite County which is currently in attainment for all pollutants.

112(r)

This facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule.

CAM

40 CFR 64 requires that a compliance assurance monitoring plan be developed for all equipment located at major facilities that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. This facility does not utilize a control device to meet compliance with an emission limit or a standard for a federally regulated pollutant, nor does the source have uncontrolled potential emissions greater than 100 tons. Therefore, CAM is not applicable to this facility.

VI. Facility Emissions Review:

The emissions summary is based on emission factors from the San Joaquin Valley Air Pollution Control District (SJVAPCD) ACI Emission Factor Determination (2017), and the maximum firing rate of the unit being XX from ACI mfg. tons/hour¹, XX from mfg. tons/day, and productXX,XXX tons/year of clean wood waste (e.g., tree debris) brought to the site based on a maximum operating schedule of 10 hours/day², 7 days/week, and 52 weeks/yr. The actual emissions are based on an average firing rate of XX from owner tons/week with some days being greater than XX from owner tons/day, and XX from owner weeks/year yielding productX,XXX tons/year of clean wood waste that is summarized below.

[XX values in table below have to calculated by engineer.]

Pollutant	Uncontrolled Actual Emissions (tpy)	Uncontrolled Potential Emissions (tpy)
PM/TSP ³	XX	XX
PM-10 ⁴	XX	XX
PM-2.5 ⁴	XX	XX
SO ₂	XX	XX
NO _x	XX	XX
VOC(NMHC)	XX	XX
CO	XX	XX

Notes:

1. Based on manufacturer's maximum rated capacity of the unit (Firebox Model & max rate from application tons/hour)
2. Maximum hourly throughput multiplied by 10 hours per day (per 15A NCAC 02D .1904(c)(4) that states burning is only allowed between 8:00 am and 6:00 pm).
3. The emission factor (1.4 lb/ton) selected for PM/TSP is conservatively assumed to be equivalent to the maximum valid PM₁₀ factor from Table 2 of the SJVAPCD) document (April 2017)
4. The emission factors for PM-10 and PM-2.5 (0.55 lb/ton) were calculated as the average of PM-10 emission factors in Table 1 of the 2017 SJVAPCD document, excluding unrepresentative U.S. EPA test results (see discussion below for more details)

“As discussed in the SJVAPCD document, the AP-42 emission factors are based on a pilot scale study from 1968, and the firebox did not reach temperatures necessary for proper operation of an ACI. Additionally, the study on combustion of storm-generated debris was conducted on materials that had been salt-laden from contact with salt water for extended periods of time and was not representative of combusting clean wood.”

Based on the emissions summary, this facility would be classified as a small source; however, the facility is classified as General Title V for fee purposes pursuant to 02D .1904(e) as required by Section 129(e) and Part 70 (Title V) of the Clean Air Act.

VI. Statement of Compliance

DAQ expects this facility to operate in compliance with Air Quality standards and regulations. Future compliance is expected.

VII. Public Notice / EPA and Affected State Review

No additional public notice nor EPA and Affected State review will be required at this time since the updated General Title V Permit template for new air curtain incinerators was sent to public notice pursuant to 15A NCAC 02Q .0521 and EPA on April 24, 2020 with no comments being received by the end of the respective comment periods (May 24, 2020 and June 8, 2020). DAQ need not repeat the public participation procedures required under 15A NCAC 02Q .0521 when it grants a request by a permit applicant to operate under the General Title V Permit that will be issued.

VIII. Conclusions, Comments, and Recommendations

1. A professional engineer’s seal was not required for this modification.
2. A zoning consistency determination was required for this modification.

[Engineer’s note: use one of the following 2 Zoning statements:]

If this facility is located in an area with no zoning regulations, then use next statement [No zoning statement 1]

There were no zoning ordinances at the site location in **Site/Town/City/County**. Therefore, in accordance with the 15A NCAC 02Q .0113, **Facility name** erected proper signage at the site that has remained in place. **Facility name** also placed an appropriate legal classified ad for public notice in the local paper (“**Paper name**”) on **Publication date** and submitted the official affidavit with the permit application.

If this facility is located in an area with zoning regulations, then use next statement [Zoning statement 2]

Local Zoning Planning Officer info for the **Site/Town/City/County** confirmed that the local zoning ordinances are appropriate for this ACI in a letter dated **enter date**.

3. Therefore, this engineer recommends the issuance of General Title V Permit **Enter Permit No. XXXXXGXX** for this air curtain incinerator at **Enter Facility Name**.