# North Carolina Renewable Power - Lumberton, LLC

# Hearing Officer's Report and Recommendations

Virtual Public Hearing
February 21, 2022

Public Comment Period: December 15, 2021 through February 24, 2022

Pertaining to Permit Application No. 7800166.17C
and draft Air Permit No. 05543T29 for:

North Carolina Renewable Power - Lumberton, LLC
1866 Hestertown Road
Lumberton, NC, Robeson County
Facility ID No. 7800166
Fee Class: Title V
PSD Class: Minor

Hearing Officer
William T. Wike, Jr., Compliance Supervisor, Raleigh Regional Office

## I. Background

North Carolina Renewable Power - Lumberton, LLC (NCRP or Facility) is a biomass to energy facility located at 1866 Hestertown Road, Lumberton, North Carolina. The Facility is currently operating under Title V Air Permit No. 05543T28, issued on July 29, 2021. The Facility burns wood, poultry litter, and poultry cake in two boilers (originally designed to burn coal) to generate steam that is used to generate electricity in the existing 25-megawatt (MW) turbine. The Facility also uses waste heat from the condensed steam to indirectly dry wood chips primarily for sale as offsite product.

A name and ownership change to NCRP was made with the issuance of Air Permit No. 05543T20, issued on February 20, 2015, with the Facility remaining Title V and a major source under Prevention of Significant Deterioration (PSD). On May 29, 2015, Air Permit No. 05543T21 was issued to NCRP to allow the Facility to fire only non-commercial, industrial, and solid waste incineration (non-CISWI) subject wood and poultry litter in its two stoker boilers (215 million Btu per hour (mmBtu/hr), each). Three belt dryers (ID Nos. ES-17, ES-18, and ES-19) were also added to Air Permit No. 05543T21. The modification to the boilers and the addition of the belt dryers under Air Permit No. 05543T21 are collectively referred to as "the PSD modification." As part of the modification, NCRP accepted facility-wide emissions limitations for carbon monoxide (CO), nitrogen oxides (NOx) and sulfur dioxide (SO2) of 250 tons per year (tpy), each, to establish the Facility as a minor source under PSD. Since the PSD modification, a fourth belt dryer (30 tons per hour), a drum dryer (33 tons per hour), a poultry litter warehouse and storage shed, and a fly ash storage pile have been added to the Facility but are not part of the PSD modification.

## II. Air Quality Permit Application and Review

The mission of the Division of Air Quality (DAQ) is to work with the state's citizens to protect and improve outdoor, or ambient, air quality in North Carolina for the health, benefit, and economic well-being of all. To accomplish this mission, DAQ requires facilities, in certain situations, to apply for and receive air quality permits prior to construction and operation or modification of its air pollution sources to ensure compliance with all applicable federal and state regulations.

On May 19, 2015, Air Permit No. 05543T21 was issued as the first step in a two step significant modification. Under this permit, coal and other materials were removed as fuel from the boilers (ID Nos. ES-1A and ES-1B) and non-CISWI poultry litter was added. Three new biomass belt dryers (ID Nos. ES-17, ES-18, and ES-19) were also added to the permit. The Facility also accepted several avoidance conditions to establish the Facility as a minor source under PSD.

On June 12, 2015, Air Permit No. 05433T22 was issued as an administrative amendment to correct a typographical error in the permit.

On March 8, 2016, Air Permit No. 05433T23 was issued under a "reopen for cause" permit application. Cross State Air Pollution Rule (CSAPR) Requirements were added to the permit. References to the Clean Air Interstate Rules (CAIR) were moved to Section 2.5, "Permit Shield for Non-Applicable Requirements."

On August 1, 2016, Special Order by Consent (SOC) 2016-002 (i.e., the First SOC) became effective. The SOC addressed higher than anticipated CO emissions from the boilers after permitting them to fire non-CISWI subject wood and poultry litter. The SOC allowed the Facility to restart boilers (ID Nos. ES-1A and ES-1B) following the completion of specified boiler maintenance.

On February 27, 2017, SOC 2017-001 (i.e., the Second SOC) became effective. The SOC was issued because emissions of carbon monoxide (CO) from the boilers exceeded limits specified in SOC 2016-002. The Facility was required to submit a PSD application within 30 days of the effective date of the SOC.

On March 29, 2017, a PSD permit application was received. The application was deemed incomplete because the required air dispersion modeling was not included.

On May 10, 2017, Air Permit No. 05433T24 was issued as a first step of a two step significant modification to add a fourth belt dryer (ID No. ES-21) and a drum dryer (ID No. ES-22) to the permit.

On September 14, 2017, Air Permit No. 05543T25 was issued. The following permit applications received during 2016 and 2017 were consolidated under this permit:

- Permit Application No. 7800166.16B – The 502(b)(10) notification was received on February 26, 2016. NCRP proposed to replace its two existing multiclones (ID Nos. CD-1A2 and CD-1B2) with two new, higher efficiency multiclones with 20, 24-inch tubes, each. NCRP also replaced the fly ash drag chains and removed the bottom ash silo (ID No. ES-4).
- Permit Application No. 7800166.16C – The 502(b)(10) notification was received on March 3, 2016. NCRP proposed to vent the poultry litter storage warehouse to the atmosphere rather than to the boilers (ID Nos. ES-1A and ES-1B).
- Permit Application No. 7800166.16D – This application was a state-only modification and was received on April 4, 2016. The application established the Senate Bill 3 (SB3) BACT limit for SO2 for non-CISWI subject wood.
- Permit Application No. 7800166.16F – This application was the second step of a two step significant modification under 15A NCAC 02Q .0501(c)(2) and was received on July 12, 2016. An amendment to the permit application was received on September 22, 2016 requesting to remove the requirement to monitor pressure drop across baghouses (ID Nos. CD-1A and CD-1B).

Adequate monitoring of the bagfilters is assured after this change because the permit will continue to require monthly external inspections of the control devices and duct work for leaks and annual internal inspections for structural integrity to ensure compliance with the PM emission standard.

- Permit Application No. 7800166.16G –This permit application was a minor modification for repairs to the boilers and for the modification of the existing over fire air (OFA) systems.
- Permit Application No. 7800166.16H – The 502(b)(10) notification was received on October 13, 2016. NCRP proposed to add a poultry litter storage shed.
- Permit Application No. 7800166.17A – This permit application was for renewal of the Title V permit and was received on January 24, 2017.
- Permit Application No. 7800166.17B – This permit application was for renewal of the Acid Rain permit and was received on January 24, 2017.

On October 29, 2017, the required air dispersion modeling was received at which point, the PSD permit application was deemed technically complete.

On October 11, 2019, Air Permit No. 05433T26 was issued as an administrative amendment to add a condition to the permit for exemption of 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions, in accordance with 15A NCAC 02D .1806(d)(11). The exemption applies only if the permit specifies odor management practices to minimize objectionable odor beyond the property lines. Accordingly, procedures representing industry-wide best practices for managing odor from poultry litter were included in the permit.

On April 15, 2020, Air Permit No. 05433T27 was issued. The following permit applications were consolidated under this permit:

- Permit Application No. 7800166.19A – This application was received February 1, 2019 for a minor modification to add poultry cake as permitted fuel for the Facility's boilers (ID Nos. ES-1A and ES-1B).
- Permit Application No. 7800166.19B – This permit modification was a "re-open for cause" issued by NCDAQ in a letter dated February 26, 2019. The re-open for cause addressed PSD applicability for the fourth belt dryer (ID No. ES-21) at the Facility.
- Permit Application No. 7800166.19C – The 502(b)(10) notification was received on February 18, 2019. NCRP proposed to add a fly ash storage pile to the Facility.
- Permit Application No. 7800166.19D – The 502(b)(10) notification was received on May 24, 2019. NCRP proposed to add egg shells (source of calcium carbonate) for control of SO2 and acid gas emissions from the Facility's boilers (ID Nos. ES-1A and ES-1B). However, the addition of egg shells was not part of the PSD permit modification, and no emission reduction efficiency associated with the egg shells is included in the emissions calculations.

On July 29, 2021, Air Permit No. 05433T28 was issued as a minor modification to replace the existing two bagfilters (ID Nos. CD-1A and CD-1B) for the two boilers with a new common bagfilter (ID No. CD-1C) and to replace the two existing dry sorbent injection systems (DSI) (ID Nos. CD-1A4 and CD-1B4) with a new common system (ID No. CD-1C4).

On June 23, 2021, NCRP submitted an addendum to the PSD permit application to request authorization to conduct maintenance, repair, and replacement work on the boilers (ID Nos. ES-1A and ES-1B).

Betty Gatano, permitting section Engineer III for the DAQ in the Raleigh Central Office, reviewed the application for the PSD modification with implementation of Best Available Control Technology (BACT) with requested modifications submitted by NCRP and determined that the modifications would comply with all applicable federal and state air quality requirements. The permit application review is available on the DAQ website.

The Division is obligated to issue an air permit to NCRP if the applicant has met all federal and state laws, regulations, and rules for the protection of the environment, unless the public comments received during the public comment period reveal that DAQ was in error or incomplete in its evaluation of the biomass to energy plant from an air quality standpoint, or if after the 45-day EPA review period, the EPA objects to the permit as specified in 40 CFR 70.8(c)(1). The following hearing officer's responses to written and oral public comments will address issues raised in light of these requirements (Section IV).

## III. Notice of Public Hearing

The Division of Air Quality conducted a virtual public hearing to allow for public participation while protecting public health under guidance that was in place at the time of the hearing notice, to prevent the spread of COVID-19. The initial public hearing announcement was published in The Robesonian newspaper and the DAQ's website on December 15, 2021. Based on a public request, the public hearing was rescheduled to allow the public more time to review the materials. The rescheduled public hearing announcement was published in The Robesonian newspaper and the DAQ's website on January 19, 2022, granting an extension of the original 30-day comment period and rescheduling of the virtual public hearing. The public comment period ran from December 15, 2021 through February 24, 2022. The required duration for a comment period is 30 days per the 15A NCAC 2Q .0300 rules, and the comment period for this draft permit was a total of 71 days.

Copies of the permit application review, draft air permit, and draft Environmental Justice Report were also posted on the DAQ website for public review. Copies of the air quality permit application and related documents were available for public review

in DAQ's Raleigh Central Office (RCO) and Fayetteville Regional Office (FRO) throughout the public comment period. In addition to the public hearing, the DAQ accepted comments concerning the draft permit via mail, electronic mail, and voicemail during the public comment period. A designated email address and a phone number for comments were provided in the DAQ notice for the public hearing.

## IV. Public Comments

All comments were given equal consideration, whether they were made orally at the virtual public hearing, submitted in written form, via email, or left orally in the voice mail box designated for comment. Ninety-three (93) people in total were in attendance at the February 21, 2022 virtual public hearing via WebEx. Seventy-seven (77) attendees were members of the public and sixteen (16) from DEQ/DAQ. Thirty-six (36) people registered to speak at the virtual hearing, but only thirty-three (33) submitted oral comments. All thirty-three (33) commenters were against the issuance of the permit to NCRP in its draft form. During the public comment period from December 15, 2021 through February 24, 2022, seventeen (17) people submitted written comments via email. Of these written comments, all seventeen (17) were against the issuance of the permit in its draft form. Four people submitted both written and oral comments. No voicemails were submitted during the public comment period.

All email comments with attachments have been consolidated and saved to an Adobe file. There were no voicemail comments received so no transcription was made. The hearing was recorded, and the attendance list was saved to electronic file. These electronic documents are available by request.

The oral and written comments have been separated by subject matter as it relates to environmental concerns with the PSD modification and implementation of BACT in the draft permit. Note that the comments shown below are a summary of the full oral or written comment submitted.

### A. Comments suggesting HAP emissions from the belt dryers were underestimated.

Previous versions of the permit required NCRP to quantify emissions of volatile organic compounds (VOCs) from the belt dryers via an initial stack test. The VOC testing was performed in accordance with EPA guidance *Interim VOC Measurement Protocol for the Wood Products Industry – July 2007 (referred to as WPP1 VOC by EPA).*[1] WPP1 includes formaldehyde and methanol as components of VOCs. Although formaldehyde and methanol are the two primary

[1] "Interim VOC Measurement Protocol for the Wood Products Industry," July 2007, retrieved from https://www.epa.gov/sites/default/files/2020-08/documents/otm26.pdf

HAPs found in the wood products industry, four others including acrolein, acetaldehyde, phenol, and propionaldehyde are often emitted in lesser quantities for wood drying processes.

Comment:
The commenter used these values: formaldehyde at 3.42 tons per year (tpy) and methanol at 3.15 tpy and added them to the facility-wide potential to emit (PTE) of HAPs from drum dryer (0.62 tpy), boilers (16.32 tpy, with 10 tpy as hydrogen chloride (HCl)), and boiler starter fuel (0.19 tpy), to arrive at 23.7 tpy of HAPs. An additional calculation was made by the same commenter using the ratio of HAPs to VOCs at Enviva Sampson to show total HAPs may exceed 25 tpy at NCRP.

Hearing Officer's Response:
The formaldehyde (3.42 tpy) and methanol (3.15 tpy) included in the 23.7 tpy total that the commenter mentioned was in the Toxics Analysis section in Table 2 of the permit review. Emissions of formaldehyde and methanol were quantified using the non-detect level applied to annual throughput as a conservative estimate. For the purposes of determining the HAP major status of the Facility, using non-detect levels would be an overly conservative estimate. The testing was performed in accordance with WPP1 VOC methodology including the subsequent data evaluation.

Comment
The commenter indicated emissions from the belt dryers at NCRP may be similar to other wood dryer operations, such as those from the rotary dryer at Enviva Sampson. If so, HAP emissions are underestimated, and the Facility may be a major source of HAPs.

Hearing Officer's Response:
The direct-fired, rotary dryers at Enviva, which the commenters compared with the indirect-fired, belt dryers at NCRP, have significantly different operating conditions as summarized in the table below:

| **Measure** | **Belt Dryer** | **Rotary Dryer** |
|---|---|---|
| Air Flow | Larger | Smaller |
| Temperature | Lower<br>122$^{o}$F | Higher<br>300-600$^{o}$C (572 to 1112$^{o}$F) |
| Type | Indirect heat | Direct heat |
| Moisture Removal | 50 percent to 7 percent | 50 percent to 7 to 5 percent |

NCRP did not include HAP emissions from belt dryers in facility-wide totals (page A2.2 of the permit review) because methanol and formaldehyde were at non-detect levels during testing. For the purposes of determining the HAP major status of the Facility, using non-detect levels would be an overly conservative

estimate considering the high air flow rates and the relatively low HAP concentrations.

**Recommendation:** The permit should be edited to include a requirement for an emissions test for all six HAPs (formaldehyde, methanol, as well as acrolein, acetaldehyde, phenol, and propionaldehyde) from the belt dryers. This test will provide a better accounting of HAP emissions from the belt dryers. It will also allow the Facility to verify their HAP minor status with three belt dryers and allow a more informed decision of whether the Facility will remain HAP minor with the operation of the fourth belt dryer.

**B. Comments suggesting HAP emissions were miscalculated**

Comment:
One commenter noted that the PTE of HAPs from the boilers appeared to be miscalculated.

Hearing Officer's Response:
A review of the calculation indicates that DAQ did calculate the potential emissions correctly. The hourly emissions of HCl are estimated at 2.85 lb/hr, which results in overall HCl emissions of 12.5 tpy. The Facility has accepted an emission limit of 10 tpy for HCl, and the boiler emissions of 16.32 tpy of total HAPs based on this emission limit. Although the hourly emissions of HCl can vary and may reach 2.85 lb/hr on occasion, this value should not be extrapolated for the entire year because HCl emissions are limited on an annual basis to 10 tpy.

**Recommendation:** Permit engineer to provide additional explanation that HAPs PTE calculated in the permit review are correct.

**C. Comments regarding the MACT avoidance limits**

Comment:
The commenter indicated that the Maximum Achievable Control Technology (MACT) Avoidance limits are not practically enforceable.

Hearing Officer's Response:
Since additional stack testing for four additional HAPs (acrolein, acetaldehyde, phenol, and propionaldehyde) from the belt dryers is recommended in Section IV.A of this report, these HAPs should be included in the MACT Avoidance condition in the draft permit.

Calculations of the facility HAP PTE have built in conservatism. However, if stack testing shows PTE of HAPs exceed 25 tpy total or 10 tpy individually then additional MACT avoidance limits on facility operations would need to be included or follow the requirements associated with being a major source of

HAPs, such as the application of the "NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters" (Boiler MACT Subpart 5D). Additionally, DAQ would evaluate whether Case-by-Case MACT for the belt dryers would apply.

HCl and chlorine compliance testing is already specified to assure under 10 tpy individual HAP from boiler emissions.

**Recommendation:** Include a limit in the permit that the fourth belt dryer cannot operate until approved compliance testing (added in IV.A above) results demonstrate that the Facility is HAP minor.

**D. Comments suggesting modeling analysis is incomplete and defective.**

Comment:
A commenter indicated the air toxic emissions from the belt dryers were underestimated because all six HAPs common in wood drying were not quantified during testing of the belt dryers. Acrolein was noted as having a particularly low TPER (Toxic Permitting Emission Rate in 15A NCAC 02Q .0711).

Hearing Officer's Response:
A modeling analysis was provided for twelve toxic air pollutants (TAPs) from facility emission sources not counting the belt dryers. All twelve pollutant emission rates were well under their TPERs and/or the modeled impacts were below the Acceptable Ambient Levels (AALs in 15A NCAC 02D .1100).

The Facility then estimated emissions of formaldehyde and methanol, as they were assumed to be the two most likely HAPs from the belt dryers. Non-detect levels from stack testing on August 22, 2018 were used as a worst-case estimate for air toxics consideration. Methanol is not a TAP, so no further evaluation was required. Formaldehyde emissions, using this conservative approach, were above the TPER. An air dispersion modeling exercise was then conducted by the Facility, which demonstrated the modeled impact was less than the AAL for formaldehyde.

The four remaining HAPs common to wood drying are acetaldehyde, acrolein, phenol, and propionaldehyde. Propionaldehyde is not a TAP, so no further air toxics evaluation is required.

**Recommendation:** A screening analysis should be performed in order to get a baseline level of assurance that TPERs and/or AALs are not exceeded at conservatively assumed emission rates for acetaldehyde, acrolein, and phenol. Finally, include a requirement in the permit that confirmatory air toxics modeling be performed after the required belt dryer testing (added in IV.A above) results

are approved if the emission rates are higher than estimated for the air toxics review.

**E. Comments suggesting the proposed BACT determinations are not supported in the record.**

Comment:
Commenter indicates that NCRP dismisses potentially feasible control technology without adequate justification. As an example, sister facilities, Georgia Renewable Power's Franklin and Madison power plants, utilize catalytic oxidation in their boilers for control of CO and VOCs.

Hearing Officer's Response:
The Georgia facilities are not comparable to NCRP because the Georgia facilities are new units, have double the heat generating capacity, and only burn biomass, not poultry litter. The BACT analysis for the boilers in the permit review correctly states that *the composition of the poultry litter is expected to vary, so the presence of compounds that could potentially act as catalyst poisons is unknown.* While chicken litter is considered a non-hazardous secondary material (NHSM), as described in more detail later in this report, the permit review states that small amounts of compounds like arsenic, iron, and sodium can damage the catalyst material, especially over time. Commenter wants a full accounting of all potential catalyst damaging compounds in the poultry litter and claims that the baghouse before a potential catalytic oxidation system would remove those damaging compounds. Additional restrictive monitoring of the poultry litter is prescribed by the commenter in an effort to make catalytic oxidation a viable technology.

The application of BACT for the Facility is consistent with how it was applied for other facilities in North Carolina. DAQ provided an independent look at the information provided by the Facility to assure nothing pertinent was overlooked. EPA guidance procedures were followed in all cases.

Next, the commenter claims BACT for VOC emissions from the belt dryers should be regenerative thermal oxidation (RTO) or catalytic oxidation instead of no control. EPA guidance from 1995 indicates that RTOs can control VOCs as low as 100 ppm or less. The Facility claims the VOC concentration from the belt dryers is an order of magnitude lower, or approximately 10 ppm VOCs. The commenter requests further explanation as to why an RTO was considered not appropriate. Is it technically feasible but not economically or environmentally feasible? The commenter provided a similar critique for why catalytic oxidation was considered not appropriate and asked for more explanation.

Lastly, it is noted that the EPA RACT/BACT/LAER Clearinghouse was reviewed by the Permit Engineer and no comparable entries for belt dryers was found for VOC control.

**Recommendation:** Permit Engineer to update air permit review with additional details of why particular technologies are not appropriate to address commenters suggestions.

**F. Comments suggesting the proposed BACT Limits are less stringent than comparable sources.**

Comment:
For particulate matter (PM) emissions, the Facility claims that a multiclone and fabric filter will achieve 99 to 99.9 percent control efficiency. The commenter indicates that the Facility assumes a lower PM control efficiency of 95 percent without providing any justification.

Hearing Officer's Response:
Baghouse performance is not set by control efficiency but rather through a manufacturer's guaranteed PM emission exit concentration (e.g., in units of grains/dry standard cubic feet). This is the appropriate standard, not removal efficiency, since removal efficiency is variable depending on loading rates, particle size distribution, etc. The PM BACT emission limit was established as the "New Source Standards for Industrial-Commercial-Institutional Steam Generating Units," (NSPS Subpart Db). As required by the Clean Air Act Amendments, BACT cannot be less stringent than any applicable standard of performance under the New Source Performance Standards (NSPS).

Comment:
The commenter then claimed that BACT limits for CO and NOx were initially lower, but then raised based on historic continuous emission monitoring system (CEMS) data. Further, it is claimed that this is a retroactive BACT analysis and *must be conducted "as though construction had not yet commenced on the source or modification." As such, using existing emissions data is fundamentally unlawful in setting BACT limits.*

Hearing Officer's Response:
In response, by going through the process of applying BACT, the Facility was able to demonstrate that facility operations are shown as protective of National Ambient Air Quality Standards (NAAQS). A one-hour CO emission limit is difficult to set due to short-term variability in the fuel stream (e.g., moisture content) and the prediction of emissions of the retrofitted boilers. A 95 percent confidence level was applied to historical CEMS data to set the limit for CO. That limit was then used for significant impact level (SIL) screening modeling in order to demonstrate that the CO emission limit is below the SIL and therefore protective of NAAQS.

**Recommendation:** Permit Engineer to update air permit review with additional detail of why BACT limits in the permit are appropriate to address commenters suggestions.

**G. Comments suggesting that the BACT Limits are not short-term limits and do not protect the NAAQS.**

Comment:
Monitoring for BACT (through CEMS) required on a 30-day basis but should be on an hourly basis to protect NAAQS or SILs.

Hearing Officer's Response:
The boiler BACT limits as they relate to the SILs modeling are sufficiently stringent to demonstrate the PSD project at NCRP will not cause or contribute to a modeled exceedance of the short-term NAAQS for nitrogen dioxide (NO2), SO2, and CO. Note that NOx is a combination of NO2 and NO; however, NAAQS modeling is performed for NO2. The 30-day rolling averaging period proposed for the BACT limits and applied in the modeled emission rates are also generally consistent with EPA modeling guidance concepts as discussed in section V.D.2 of EPA's April 2014 Guidance for 1-hour SO2 Nonattainment Area SIP Submissions.[2] The methodologies discussed in the guidance are relevant to attainment and nonattainment areas alike and, as such, provide a basis for demonstrating compliance with short-term NAAQS using 30-day rolling averaging periods in terms of mass of pollutant per unit of boiler heat input (e.g., lb/mmBtu).

Moreover, the 30-day rolling average lb/mmBtu BACT limits proposed by NCRP were multiplied by the maximum hourly boiler heat input capacity (i.e., 215 mmBtu/hr each boiler) to derive a maximum short-term modeled emission rate to demonstrate that the project emission increases were below the SILs. The 30-day BACT limits take into account the variability in biomass fuels and boiler fuel feeding rates assuming proper boiler maintenance and operation. The BACT limits in combination with the boiler maximum hourly heat input were considered sufficiently conservative and representative of worst-case short-term modeled emission rates given that the project impacts were below the SILs, which are also an additionally conservative threshold for determining the significant impacts for any PSD project. For example, the 1-hour NO2 SIL of 10 ug/m3 is only five percent of the 1-hour NO2 NAAQS of 188 ug/m3. As per EPA modeling guidance, the more stringent 1-hour NO2 SIL modeling uses the 5-year average maximum modeled 1-hour concentration, whereas the NAAQS modeling relies on

[2] "Guidance for 1-Hour SO2 Nonattainment Area SIP Submissions," April 23, 2014, retrieved from https://www.epa.gov/sites/default/files/2016-06/documents/20140423guidance_nonattainment_sip.pdf

the 5-year average eighth ($8^{th}$) highest maximum modeled concentration. This provides another level of conservatism to the SILs modeling, as applied here for NCRP, when evaluating significant impacts to ambient air quality and determining whether or not the project emissions increases would not cause or contribute to a modeled exceedance of the NAAQS. Furthermore, the SILs modeling shows worst-case impacts for 1-hour NO2, SO2, and 8-hour CO were 95, 83, and 11 percent of the SILs thresholds, respectively, whereas these emissions impacts correlate to only 5, 4, and 1 percent of the respective NAAQS.

In summary, the NO2, SO2, and CO SILs modeling demonstrations for the NCRP PSD project were sufficiently conservative and representative in this case based on the maximum short-term boiler heat input estimates and proposed 30-day BACT limits, more stringent SILs concentration thresholds as compared to the NAAQS, and the reliance on the maximum modeled short-term concentrations.

**Recommendation:** No edits to the draft permit are recommended.

**H. Environmental Justice and Cumulative Impacts.**

EJ and Cumulative Impacts – The vast majority of commenters mentioned Environmental Justice (EJ) in some capacity. Since there was much overlap and repetition, a summary of five comments captures the significant issues raised.

Comment:
The Facility impacts a potentially underserved community, and this community is not treated fairly if the adverse impacts that are disproportionately borne by communities of color and low income are ignored.

Hearing Officer's Response:
The Department is committed to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. DAQ considered Environmental Justice and equity through the Draft Environmental Justice Report to inform the inclusive and meaningful engagement conducted for this permit application. The only NCDEQ Division program with the authority to require permit modifications or denial based on the data mentioned is the Division of Waste Management's Solid Waste Section under NCGS Section §130A-294(a)(4)c.9.

Comment:
In a recent executive order [EO246], Governor Cooper noted the importance of considering cumulative impacts. There's nothing in the draft Environmental Justice report suggesting the agency ever evaluated the cumulative impact, the facilities operating in or around, etc.

Hearing Officer's Response:
The DAQ went above and beyond the requirements of the permit application to look at community demographic and socioeconomic composition through the Draft EJ Report. The Draft EJ Report included data on race and ethnicity, poverty, disability, age and sex, household income, per capita income, the ability to speak English, county health statistics, nearby industrial facilities and surrounding sensitive receptors. While NCDEQ is committed to EJ and equity, there is no direct legislative authority that either mandates or directs NCDEQ to perform the more expansive type of cumulative impact analysis envisioned by the commenters.

Comment:
We often hear that the agency has limited authority, but for other agencies the law allows the disapproval of an applicant's permit to operate in an underserved community.

Hearing Officer's Response:
Regardless of where a facility has chosen to locate, the DAQ requires different levels of permitting as required by applicable law, depending on the level of criteria pollutants. In this case, NC Renewable Power has submitted an application that, based on their projected emission levels, will install emission control technology consistent with the application of PSD BACT. All types of air quality permits have standards that are protective of human health and the environment. The only NCDEQ Division program with the authority to require permit modifications or denial based on the data mentioned is the Division of Waste Management's Solid Waste Section under NCGS Section §130A-294(a)(4)c.9.

Comment:
Environmental Justice is not achieved solely through notice, not solely through outreach, not solely through meaningful involvement, but rather requires final decisions that reflect consideration of how to avoid or mitigate the cumulative and discriminatory impact.

Hearing Officer's Response:
The Department is committed to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. DAQ has considered Environmental Justice and equity by conducting the Draft Environmental Justice Report to inform the inclusive and meaningful engagement conducted for this permit application. The only NCDEQ Division program with the authority to require permit modifications or denial based on the data mentioned is the Division of Waste Management's Solid Waste Section under NCGS Section §130A-294(a)(4)c.9.

Comment:
Regarding the draft Environmental Justice report, seven potentially limited English proficiency in language groups were identified during the initial screening of demographic data, Spanish or Spanish Creole, French, Vietnamese and other Asian languages. However, none of the language groups identified reach the 5 percent. If the larger LEP groups are identified during the permit process or specific translation requests are received, DAQ will revisit the safe harbor guidelines. Has DAQ revisited the safe harbor guidelines and to whom in these language groups has translation been provided?

Hearing Officer's Response:
The DAQ and Departmental EJ Program did not receive any additional data indicating a larger population for any of the languages identified through initial screening, nor specific requests to provide translation or interpretation services for any particular language. Therefore, no translations were conducted for this permit application or associated materials.

**Recommendation:** No edits to the draft permit are recommended.

**I. Several commenters suggested the Facility was expanding**

Comment:
Several commenters suggested not approving the "plant expansion."

Hearing Officer's Response:
This application does not expand the capacity of the Facility. There may have been some confusion with the boiler maintenance project included in the application amendment.

**Recommendation:** No edits to the draft permit are recommended. Recommend that the Permit Engineer clarify in the final permit review that the boiler maintenance project does not increase the capacity of the Facility.

**J. Comments regarding sufficiency of monitoring.**

Comment:
Several commenters suggested the permit included an insufficient level of monitoring at the Facility.

Hearing Officer's Response:
The draft (and current) permit requires CEMS for NOX, CO, and SO2 and Continuous Opacity Monitoring (COMS) for visible emissions from the boilers. The draft permit also requires stack testing for HCl and chlorine, PM, and other pollutants within 180 days of restart after completing the boiler maintenance project.

**Recommendation:** No edits to the draft permit are recommended.

**K. Comments regarding constituents in chicken feed.**

Comment:
One commenter indicated there were metals/contaminants in the chicken feed.

Hearing Officer's Response:
Before the Facility could use poultry litter as a fuel in its boilers, a non-hazardous secondary material (NHSM) determination was required to ensure that poultry litter was not CISWI solid waste. The poultry litter supplier submitted information to the DAQ showing the results of litter analysis. The results were reviewed by the Permitting Section personnel, and Applicability Determination No. 2131 was issued on March 8, 2013. The Applicability Determination concluded the following: *"Used poultry litter is a non-hazardous secondary material (NHSM) within the meaning of Title 40, Part 241 of the Code of Federal Regulations (40 CFR Part 241). The used poultry litter described in your correspondence referenced above will be processed by PPUSA. It meets the legitimacy criteria provided in 40 CFR 241.3. The NC DAQ has determined, therefore, that the combustion of this material would not be subject to the requirements of the Commercial and Industrial Solid Waste Incineration (CISWI) emission standard. This determination relies on the language of the recently published Federal rules defining NHSM, and 40 CFR Part 60 Subpart CCCC."*

**Recommendation:** No edits to the draft permit are recommended.

**L. Comments regarding the Facility operation and climate change**

Comment:
Several commenters indicated that operation of the Facility is inconsistent with Governor Cooper's Executive Order on climate change.

Hearing Officer's Response:
Governor Cooper's Executive Order 80 (EO80) sets emission reduction goals for the state of North Carolina to strive to achieve. Those goals include a reduction in statewide greenhouse gas (GHG) emissions of 40 percent below 2005 levels, an increase in zero emission vehicles, and energy consumption reductions in state owned buildings of 40 percent from 2002-2003 levels. It also requires state agencies to develop plans for becoming more resilient to climate change impacts. The NC Climate Change Interagency Council is charged with developing holistic approaches and programs so that North Carolina can strive to accomplish all the goals in EO80 while ensuring that North Carolina's vibrant economy continues to expand. All of the work products specifically directed in EO80 have been published and are publicly available.

The North Carolina Clean Energy Plan (CEP) was published by DEQ in October of 2019. This plan includes 39 stakeholder-developed recommendations to expand the use of clean energy and energy efficiency in the electricity sector through policy, administrative, and voluntary actions. It also established a goal of reducing GHGs by 70 percent from 2005 levels by 2030 and a second goal of net zero GHG emissions by 2050. Since its publication, several public and private entities as well as DEQ have begun working on implementation of various recommendations, including the GHG goals.

The CEP stated that using biomass for energy production has been defined as "renewable energy" in both Federal and State policy. The CEP further goes on to say that North Carolina's wood products industries utilize low cost or free waste wood to generate electricity for onsite use. These low-cost fuels provide for less price volatility compared to other traditional fuels. Using the waste biomass for energy production can divert it from landfills and can offset production and consumption of traditional fossil fuels. Finally, since the fuel can be stored for use, biomass electric production is dispatchable and can be scheduled for optimal timing when the resource is most needed.

It acknowledged that biomass combustion releases carbon into the atmosphere at a faster pace than if the forests were left intact to absorb and sequester carbon dioxide emitted from anthropogenic sources. The method for accounting this complex issue has been studied by EPA and other national experts, and the latest accepted methodology was employed in the development of the NC GHG Inventory. EPA's Science Advisory Board remains deadlocked after years of debate on the best way to advise regulators on how to account for emissions from burning biomass.

The DEQ also published the North Carolina Climate Risk Assessment and Resilience Plan in June of 2020. This plan includes both a state-level climate science report as well as specific hazards and vulnerabilities to climate change identified by state agencies along with some sector specific resilience strategies. The plan also includes 25 recommendations to sequester carbon and build resilience using North Carolina's natural and working lands. The forestry recommendations were developed by 18 expert members representing 1) federal and state governmental units including the North Carolina Forest Service, 2) university experts, 3) forestry consultants, and 4) conservation organizations such as The Nature Conservancy and the Dogwood Alliance. There are seven recommendations pertaining to forestry and one of the plan's key findings is that sustainable management and financial support of the 14 million acres of forest land owned by North Carolina's private forest landowners must be a cornerstone of any actions taken by the State. The plan specifically recommends 1) modernizing forest policy and tax incentives to reduce the threat of converting forests to other land uses by encouraging landowners to invest in management and

restoration rather than harvesting prematurely or even selling the land for financial gain, and 2) creating economic incentives for the use of wood products that store the carbon for long periods of time (+20 years), which could result in creating less favorable economics for using the wood as fuel.

**Recommendation:** No edits to the draft permit are recommended.

**M. General comments not directly related to the expressed intent of the public hearing.**

Comment:
Many commenters submitted emails and spoke at the public hearing to express their opposition to the Facility operation and did not address specific concerns with the current draft air quality permit or the permitting process involved in drafting the permit. The following consolidated list of comments were noted, in particular:

- Shut this plant down and/or do not approve the permit.
- Despite the name, it is not a renewable energy facility.
- NCRP is accused of "greenwashing".
- Parent company not NC based, but from Georgia.
- The Facility is "government subsidized."
- The Facility is built on a brownfield hazardous waste site.

Hearing Officer's Response:
Although these comments are not directly related to the draft air quality permit for the NCRP, they reveal the passion many in the community feel about issues related to the proposed project. Of the fifty (50) comments (four duplicates) received, none were in support of NCRP.

**N. Compliance History and Violations**

Comment:
Many comments were made concerning the Facility's track record with compliance.

Hearing Officer's Response:
NCRP has had the following compliance issues within the past six years:

- On June 29, 2016, NCRP was issued a Notice of Violation/Notice of Recommendation for Enforcement (NOV/NRE) for exceeding SB3 limits for PM2.5, SO2, and NOx; for having excessive COMS downtime in violation of NSPS Subpart Db, and for failing to conduct source testing within 180 days of startup of the boilers.
- On August 1, 2016, Special Order of Consent (SOC) 2016-002 was issued to address violations cited in the NOV/NRE on June 29, 2016. The order also addressed issues relating to CO emissions. NCRP paid $9,000 as an

upfront penalty for these violations under the SOC. NCRP also paid an additional $6,000 on January 31, 2017 in stipulated penalties for violating the terms of the SOC.

- On September 12, 2016, NCRP was issued a Notice of Deficiency for failure to submit a Notice of Compliance Status within 120 days of initial tune-up of the boilers.
- On October 28, 2016, the Facility submitted a "Compliance Plan" as required by SOC 2016-002. The Plan stated that the Facility intends to submit a PSD application.
- On November 16, 2016, the Facility was issued an NOV/NRE for exceeding the PSD avoidance limit for CO emissions.
- On February 27, 2017, SOC 2017-001 was issued to address exceedances of the PSD avoidance limit for CO emissions. The Facility was required to submit a PSD permit application within 30 days of issuance of the SOC. NCRP paid $15,000 as an upfront penalty for these violations under the SOC. NCRP also paid an additional $12,000 on August 2, 2017 in stipulated penalties for violating the terms of the SOC.
- On March 13, 2017, an NOV/NRE was issued for exceeding SB3 limits for NOx and for having excessive COMS downtime in violation of NSPS Subpart Db during the second half of 2016. The Facility also experienced three (3) exceedances of the PSD avoidance limit for CO (250 tons per twelve-month rolling total).
- On June 30, 2017, an NOV was issued to the Facility for numerous monitoring and recordkeeping violations observed during the compliance inspection on June 8, 2017 and subsequent record review on June 13, 2017.
- A civil penalty in the amount of $11,555, including costs, was assessed on July 25, 2017 for exceeding SB3 limits for $NO_X$ and for having excessive COMS downtime in violation of NSPS Subpart Db. The penalty was paid in full on September 8, 2017.
- On November 27, 2018, NCRP was issued an NOV/NRE for exceeding SB3 limits for NOx.
- On February 28, 2019, a civil penalty was assessed in the amount of $8,596, including costs, for the violations cited in the NOV/NRE dated November 27, 2018. The civil penalty was paid in full on April 5, 2019.
- On April 16, 2020, an NOV/NRE was issued for CEMS downtime as reported by the Facility on the semi-annual monitoring report for the fourth quarter of 2019. On September 18, 2020, a civil penalty was assessed in the amount of $3,449, including costs, for these violations. The civil penalty was paid in full on October 20, 2020.
- On December 9, 2020, an NOV/NRE was issued for excess emissions from the continuous opacity monitor (COM) during first, second, and third quarters of 2020. On April 26, 2021, a civil penalty was assessed in the amount of $10,407, including costs, for these violations. The civil penalty was paid in full on May 24, 2021.

- On February 23, 2022, NCRP was issued a Notice of Deficiency for late submittal of semiannual reporting requirements.

The Facility has resolved the violations noted above. The issuance of the PSD permit will resolve the SOC requirements. The DAQ Fayetteville Regional Office and Raleigh Central Office CEMS review group is successfully identifying and addressing compliance issues for the NCRP facility through their onsite inspections, emissions testing requirements and observations, and review of required monitoring, recordkeeping, and submitted reports. However, if the Facility continues to elicit violations for non-compliance, then additional measures will be taken in accordance with the DAQ's Tiered Enforcement Guidelines.

**Recommendation:** No edits to the draft permit are recommended.

## V. Summary of Recommended Edits to the Draft Permit

The following edits are recommended to be made to the draft air permit before issuance:

- The permit should be edited to include a requirement for an emissions test for all six HAPs (formaldehyde, methanol, as well as acrolein, acetaldehyde, phenol, and propionaldehyde) from the belt dryers.
- Include a limit in the permit that the fourth belt dryer cannot operate until approved compliance testing results demonstrate that the Facility is HAP minor.
- A screening analysis should be performed in order to get a baseline level of assurance that TPERs and/or AALs are not exceeded at conservatively assumed emission rates for acetaldehyde, acrolein, and phenol. Finally, include a requirement in the permit that confirmatory air toxics modeling be performed after the required belt dryer testing (added in IV.A above) results are approved if the emission rates are higher than estimated for the air toxics review.

These edits to the air permit are recommended in order to address quantification of some of the known HAPs/TAPs that may not have been fully accounted for. This is to confirm that the Facility is HAP minor as indicated by the Facility.

## VI. Conclusions and Recommendations

All the public comments regarding whether or not the Division of Air Quality should issue the PSD modification permit with implementation of BACT to North Carolina Renewable Power Lumberton, LLC, a biomass to energy facility located at 1866 Hestertown Road, Lumberton, Robeson County, North Carolina, have been considered. It is the recommendation of the hearing officer that the Director issue the

Air Quality permit, if after the 45-day EPA review period, the EPA does not object to the permit as specified in 40 CFR 70.8(c)(1), and after considering the following:

Add the three recommended air permit modifications as described in Section V above.

William T. Wike, Jr., Hearing Officer

4/01/2022
Date

# SUPPORTING DOCUMENTS

(The following supporting documents are located on the DAQ SharePoint site)

- Air Quality Permit Application Review and Draft Permit
- Audio Recording of February 21, 2022 Digital Public Hearing
- Summary of Digital Public Hearing Comments
- Emails received during the Public Comment Period
- Environmental Justice Snapshot