SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 | 601 WEST ROSEMARY STREET, SUITE 220 CHAPEL HILL, NC 27516-2356 | Facsimile 919-929-9421

November 20, 2017

VIA E-MAIL

North Carolina Department of Environmental Quality
Division of Air Quality
Attn: Charles McEachern
3800 Barrett Drive, Raleigh, NC, 27609
PublicComments@ncdenr.gov

RE: Comments on Draft Air Permit No. 10466ROO for the Northampton Compressor Station (Facility ID# 6600169) of the Atlantic Coast Pipeline

Dear Mr. McEachern:

The Southern Environmental Law Center offers the following comments on the draft air permit for Atlantic Coast Pipeline, LLC's ("Atlantic") proposed Northampton Compressor Station for the Atlantic Coast Pipeline ("ACP"). These comments are submitted on behalf of the Southern Environmental Law Center, North Carolina State Conference of Branches of the National Association for the Advancement of Colored People ("NAACP"), the Haliwa-Saponi Indian Tribe, North Carolina Environmental Justice Network, Sierra Club, Natural Resources Defense Council, Concerned Citizens of Tillery, North Carolina Conservation Network, Clean Air Carolina, the North Carolina Council of Churches, North Carolina Interfaith Power and Light, 350 Triangle, and the Rachel Carson Council.

These organizations respectfully request that the North Carolina Department of Environmental Quality's ("NCDEQ") Division of Air Quality ("DAQ") withdraw this draft permit, complete a thorough environmental justice and health assessment of the community that would be subject to the air pollution from this facility, and seek additional information from Atlantic. As set forth in more detail below:

- The draft permit does not follow DEQ's Environmental Equity Policy
- Compressor station pollution threatens the health of the surrounding community and requires additional scrutiny

- Errors in the Air Toxics permitting process require withdrawal of the draft permit
- Considering other sources of nearby pollution, DAQ must require modeling and ambient monitoring prior to issuing a permit
- As a major source of greenhouse gas emissions, the Northampton Compressor Station should be subject to greater scrutiny from DAQ
- Atlantic needs to supplement its application for an air permit with additional information
- DAQ should consider more stringent emissions controls

The Northampton Compressor Station Would Add a New Pollution Source in an Area Already Burdened by Air Pollution

Atlantic has proposed three compressor stations as integral parts of the ACP. Compressor stations are large, polluting facilities that use gas-fired turbines to maintain pressure in and allow gas to move through the pipeline. The proposed compressor station in Northampton County, North Carolina would be powered by three large turbines, capable of generating 22,000 horsepower.

According to the permit application, the Northampton Compressor Station would emit 19.2 tons per year of nitrogen oxide (NO_x), 18.4 tons per year of particulate matter (PM), nearly 130,000 tons per year of carbon dioxide equivalent emissions (CO_2E)—largely in the form of methane—and a number of different hazardous air pollutants.[1] It would also emit a significant amount of volatile organic compounds (VOCs) and ammonia. VOCs can cause serious health effects, including eye, nose and throat irritation, headaches, loss of coordination, nausea, damage to liver, kidney and central nervous system, and cancer.[2] Formaldehyde, one of the particular VOCs that would be emitted from the Northampton Compressor Station, is both an irritant and probable carcinogen.[3] Under North Carolina regulations, these VOCs and ammonia are listed as toxic air pollutants.[4]

The area around the proposed location of the compressor station, in the northwestern section of Northampton County, North Carolina, approximately two miles east of US 301 and

[1] Atlantic's Supplemental Application to DAQ for an Air Permit for the Northampton Compressor Station (July 20, 2017), https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/DEMLR/Atlantic-Coast-Pipeline/ACP%20Air%20Permit%20Application%20Part%202.pdf.
[2] Environmental Protection Agency, Volatile Organic Compounds Impact on Indoor Air Quality, https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality.
[3] Agency for Toxic Substances and Disease Registry (ATSDR), Toxic Substances Portal, Formaldehyde, https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=39.
[4] 15A N.C. Admin. Code 02Q .0711.

just south of the Virginia border, is already heavily burdened by multiple sources of air pollution. The Northampton Compressor Station would be located approximately seven miles northeast of the Enviva Wood Pellets facility (a major air pollution source); two miles northeast of the Pleasant Hill Compressor Station (a major air pollution source); approximately 1.75 miles east-southeast of the Georgia Pacific plywood manufacturing facility in Virginia (currently idled, but a permitted major air pollution source that could resume operations). There is also a gas-fired combined cycle power plant under construction in Greensville County, Virginia and an existing gas-fired power plant in Brunswick County, Virginia, each less than 30 miles from the site of the proposed compressor station. Mobile source air pollution comes from Interstate 95 and CSX rail lines that cut through the northwestern section of the county. In addition, the community would be at added risk of air pollution from gas-fired combustion facilities that might tap into the ACP in the future.

The Draft Permit Does Not Follow DEQ's Environmental Equity Policy

Consistent with NCDEQ's long-standing Environmental Equity Policy[5] and its obligations under Title VI of the Civil Rights Act of 1964, DAQ is required to consider the project's environmental harms to minority and low-income communities in permitting decisions regarding the Northampton Compressor Station. We appreciate DAQ's decision to hold a public hearing in Garysburg to allow the community to voice its concerns about this new source of air pollution. But more is required to comply with DAQ's obligations under NCDEQ's own Environmental Equity Policy and under federal law. In addition to using demographic data to determine whether there is a need for greater outreach, DAQ should use that information to determine whether there are "special health risks based on the nature of the population" and assess "the cumulative effects of permitted facilities."[6]

The demographic data demonstrate that this facility would most directly affect a predominantly African American community, many of whose residents live in poverty. The Northampton compressor station would be located in census block group 6 (a subset of census tract 9203). Within that census block group, 79.2 percent of the population is African American. Within census tract 9203, 32.3 percent of the population lives at or below the federal poverty line, nearly double the state average.

The Northampton Compressor Station would be located in an area where people are already struggling with health challenges that are exacerbated by air pollution. The local health department reports that a high percentage of Northampton County citizens suffer from chronic

[5] NC DENR Environmental Equity Initiative (October 19, 2000).
[6] *Id.*

diseases and that hospitalizations for asthma are higher than the state average.[7] 22 percent of surveyed residents reported having been diagnosed with asthma and 64 percent report high blood pressure. The three leading causes of death in Northampton County are cancer, diseases of the heart, and chronic lower respiratory disease, all conditions that are aggravated by air pollution.

The Northampton Compressor Station would be built on ancestral lands of the Haliwa-Saponi Indian Tribe, and just about 13 miles from the closest section of the Haliwa-Saponi State Designated Tribal Statistical Area.[8] There are enrolled tribal citizens who live outside the designated statistical area and are even closer to the proposed compressor station, some of whom work in Northampton County. DAQ's environmental justice review should also consider the possible effects on human health of members of the Haliwa-Saponi tribe. In addition, it would be inappropriate to issue a final permit to Atlantic before DAQ has engaged in meaningful government-to-government consultation with the Haliwa-Saponi Indian Tribe.[9]

The Environmental Equity Policy recognizes the potential for disproportionate environmental burdens to be imposed on low-income communities and communities of color. Given the other significant, polluting facilities close to the proposed Northampton Compressor Station, and given the high concentration of African American, low-income, and other vulnerable communities near the project site, DAQ needs more information about the effects of this pollution and the characteristics of the affected community before it can issue a permit. As will be shown in more detail below, DAQ should require modeling of the expected air pollution from this facility and monitoring of existing, nearby major sources of air pollution. These steps are necessary to ensure that low-income communities, Indian tribes, and people of color are not placed at risk of disproportionate, cumulative, harmful health effects from the added air pollution of this facility.

Until DAQ has completed an environmental justice and health assessment of this community, it should withdraw the draft permit.

---

[7] Northampton County Health Assessment, Northampton County Health Department (2015), https://www.northamptonhd.com/images/Northampton_County_2015_Community_Health_Assessment__51215.pdf.

[8] Haliwa-Saponi State Designated Tribal Statistical Area, https://www.census.gov/geo/maps-data/maps/block/2010/aianhh/dc10blk_sdtsa.html.

[9] The Haliwa-Saponi Indian Tribe made a formal request for such consultation as part of DEQ's Division of Water Resources 401 Clean Water Certification process, but no such consultation has yet occurred. Comment Letter from Haliwa-Saponi Indian Tribe to DEQ's Division of Water Resources Regarding 401 Certification (Aug. 18, 2017), http://edocs.deq.nc.gov/WaterResources/0/doc/573440/Page1.aspx?searchid=1864239e-bfcf-4168-9d20-e591886f72c4.

Compressor Station Pollution Threatens the Health of the Community and Requires Additional Scrutiny

Pollution from this facility would likely lead to adverse health effects to the surrounding population. In its Environmental Impact Statement for the ACP, the Federal Energy Regulatory Commission ("FERC") recognized the health risks from pollution from the ACP's compressor stations, which:

> include carbon monoxide (CO), carbon dioxide (CO2), methane, and nitrous oxide (NOx); volatile organic compounds (VOCs); and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM2.5). These air pollutants are known to increase the effects of asthma and may increase the risk of lung cancer….
>
> When considering the health impacts associated with compressor station emissions, increased rates of lung cancer were identified associated with the compounds emitted by compressor station operations. Studies have shown that several different cancer-related compounds and chemicals are present in the air in proximity to construction and operation of compressor stations, and that some of these have documented health effects on the general and vulnerable populations.[10]

The studies cited by the FERC found elevated concentrations of dangerous pollutants from samples collected near compressor stations. These include volatile organic compounds ("VOCs"), fine particulate matter, and gaseous radon. Some VOCs, such as benzene and formaldehyde, are carcinogens.

According to a recent report from Physicians for Social Responsibility, a "growing body of scientific evidence documents leaks of methane, toxic volatile organic compounds and particulate matter throughout [our country's natural gas] infrastructure. These substances affect [human] health."[11] People living near compressor stations suffer from a "range of symptoms ranging from skin rashes to gastrointestinal, respiratory, neurological and psychological

[10] Atlantic Coast Pipeline, Final Environmental Impact Statement, at 4-513 to 514.
[11] *Too Dirty Too Dangerous: Why Health Professionals Reject Natural Gas, Physicians for Social Responsibility* (Feb. 2017), http://www.psr.org/assets/pdfs/too-dirty-too-dangerous.pdf ["Too Dirty Too Dangerous"]. This report compiled new scientific studies that indicate additional potential pollution from natural gas infrastructure, including compressor stations.

problems."[12] Air samples collected around compressor stations have revealed elevated concentrations of many of the dangerous substances associated with gas extracted from hydraulic fracturing operations, or fracking. The ACP would transport such gas into Virginia and North Carolina from the Marcellus shale. These dangerous substances include "volatile organic compounds, particulate matter, and gaseous radon."[13] The federal Agency for Toxic Substances and Disease Registry examined air quality near a natural gas compressor station in Pennsylvania and discovered PM2.5 at dangerous levels.[14] Just this month, the NAACP, in cooperation with the Clean Air Task Force, released a new report about the threats to the health of communities of color from oil and gas infrastructure, including the proposed Atlantic Coast Pipeline and compressor stations.[15]

Though Atlantic's application reported likely emissions in averages, compressor stations have been observed to have highly variable emissions, including large spikes of VOC emissions.[16] One compressor station in Pennsylvania emitted dangerous amounts of ethylbenzene, butane, and benzene on some days and hardly detectable amounts on other days, resulting in averages that did not appropriately indicate the compressor station's threats to human health.[17]

---

[12] *Id.* (citing Brown, Weinberger, & Weinberger, *Human exposure to unconventional natural gas development: A public health demonstration of periodic high exposure to chemical mixtures in ambient air*, Journal of Environmental Science and Health, Part A, 50:5, 460-472 (2015). https://www.ncbi.nlm.nih.gov/pubmed/25734822).

[13] New York State Department of Health (2014). A public health review of high volume hydraulic fracturing for shale gas development. http://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf.

[14] *Id.* (citing Agency for Toxic Substances and Disease Registry, *Health Consultation: Exposure Investigation, Natural Gas Ambient Air Quality Monitoring Initiative Brigich Compressor Station, Chartiers Township, Washington County, Pennsylvania* (Jan. 29, 2016); Agency for Toxic Substances and Disease Registry, *Health Consultation: Brooklyn Township PM2.5, Brooklyn Township, Susquehanna County, Pennsylvania. U.S.* Department of Health and Human Services, Atlanta, GA. (April 22, 2016).

[15] Lesley Fleischman (Clean Air Task Force) & Marcus Franklin (NAACP), *Fumes Across the Fence-Line: The Health Impacts of Air Pollution from Oil & Gas Facilities on African American Communities*, p. 7 (Nov. 2017), http://www.naacp.org/wp-content/uploads/2017/11/Fumes-Across-the-Fence-Line_NAACP_CATF.pdf.

[16] Southeast Pennsylvania Health Project, *Summary on Compressor Stations and Health Impacts* (Feb. 24, 2015), http://www.environmentalhealthproject.org/files/Summary%20Compressor-station-emissions-and-health-impacts-02.24.2015.pdf.

[17] *Id.*, at p. 2.

Communities that are downwind and downhill from compressor stations likely suffer from elevated exposure to methane and related pollutants. This was the conclusion of a recently published analysis of methane emissions from compressor stations in New York and Pennsylvania, which found highly elevated levels of methane coming from those facilities.[18] In one example, the study authors found:

> This data indicates that the areas downwind of compressor stations …will be exposed to methane plumes, and any other co-emitted pollutants released by compressor stations. Residents and properties downwind under prevailing wind conditions will likely be subjected to a disproportionate burden of contaminants from compressor stations, especially those closer to the station under light prevailing wind conditions.[19]

As discussed above, in the case of the Northampton Compressor Station, these health effects would be felt most by nearby communities that are disproportionately African American. In the Final Environmental Impact Statement for the ACP, FERC acknowledged that "'African Americans have one of the highest rates of current asthma compared to other racial/ethnic groups'" and that "[p]revalence [of asthma] in children is highest in African Americans when compared to other racial/ethnic groups."[20] Black Americans are more than twice as likely as white Americans to live near sources of harmful pollution and suffer disproportionate respiratory sickness as a result.[21] Yet the FERC did not consider how the proposed Northampton compressor station would likely harm the predominantly African American community that surrounds the facility. DAQ cannot rely on the cursory environmental justice review that was included in the Final EIS when evaluating the health risks on this population from the facility.

Errors in the Air Toxics Permitting Process Require Withdrawal of the Draft Permit

1. Ammonia emissions require air toxics permit and air dispersion modeling.

---

[18] Bryce Payne, Jr., et al, *Characterization of methane plumes downwind of natural gas compressor stations in Pennsylvania and New York*, Science of the Total Environment, Vol. 580, pp. 1214–1221 (Feb. 2017).
[19] *Id.*
[20] Final EIS at 4-513 (quoting American Lung Association, 2010) and at 4-514 (citing Center for Disease Control and Prevention, 2013).
[21] *See, e.g.,* Emily Badger, *Pollution is segregated, too*, The Washington Post (April 15, 2015), https://www.washingtonpost.com/news/wonk/wp/2014/04/15/pollution-is-substantially-worse-in-minority-neighborhoods-across-the-u-s/?utm_term=.07c703f92dc0.

DAQ determined that an air toxics permit was not needed for the facility's ammonia emissions because it used the emission rates for facilities "where *all* emission release points are unobstructed and vertically oriented," pursuant to 15A N.C. Admin. Code 2Q.0711(b). But DAQ identified sources of toxic air pollutants from sources at the facility that would likely be obstructed or non-vertically oriented, such as storage tanks. Atlantic did not include diagrams in its application that would show the emissions points from storage tanks. DAQ cannot assume that such emissions points from storage tanks are vertically oriented or unobstructed. Thus, the facility should have been subject to the 2Q.0711(a) regulations, which have lower thresholds of toxic air pollutants and apply to "any facility where one or more emission release points are obstructed or non-vertically oriented . . . ." The Atlantic facility's projected emissions of 2.83 pounds per hour of ammonia, for example, are far above the .68 pounds per hour threshold for requiring a toxic air permit under subsection (a). By the same token, the facility's anticipated formaldehyde emissions would be over the subsection (a) limits.

Regardless, even if all emissions release sources are unobstructed and vertically oriented, the emissions from the three turbines (2.83 lb/hr) are a mere .01 pound per hour below the emission rate threshold for ammonia (2.84 lb/hr) for a source subject to 15A NCAC 2Q.0711(b). When a source is so close to the limit, and given the real-world uncertainty of the actual emissions, including any possible fugitive ammonia emissions from the storage tank, DAQ should have required an air toxics permit for ammonia.

2. Atlantic's Permit Application reveals sources of benzene emissions other than from combustion, requiring an air toxics permit.

In its revised permit application, Atlantic reported that the only source of benzene would be from natural gas combustion from turbines and that the heat input value for those engines would be less than 450 million British thermal units ("BTUs") per hour. DAQ accepted the company's conclusion and applied the regulation that exempts combustion sources below that heat input "that are the **only** source of benzene at the facility" from requiring an air toxics permit. 15A N.C. Admin Code 2Q.0702(25) (emphasis supplied).

But the company's application shows that there is at least one additional source of benzene emissions at the facility, and thus, the cited exception should not have applied to this facility. One of the storage tanks—listed as "I-TK-2—hydrocarbon waste storage tank" in the draft permit—is listed as a source of toxic air pollutants. In the revised permit application, Atlantic reports that this tank will also emit benzene.[22] This tank would store used oil on the

[22] Tank 1 Emissions, p. 3, Atlantic's Revised Northampton compressor station air permit application (July 20, 2017).

facility, a known source of benzene.[23] Benzene is a known carcinogen that has been linked to a number of other blood disorders and reproductive and developmental toxicity.[24] Because there is a source of benzene emissions other than the combustion turbines, the exception in 2Q.0702(25) does not apply, and DAQ should have required an air toxics permit for the facility.

DAQ Must Require Modeling and Ambient Monitoring Prior to Issuing a Permit

DAQ also has an independent obligation to limit the potential for adverse health effects from this facility, taking into account emissions from other nearby sources.[25] DAQ has not performed the analysis necessary to make this determination, and given the numerous other major sources of air pollution nearby, must do so before it can issue a permit. Given the air toxics issues identified above, DAQ should require air dispersion modeling as part of the air toxics permit. Atlantic supplied modeling data to FERC for the Northampton compressor station, but that information was not submitted to DAQ in Atlantic's permit application. Importantly, that modeling was itself flawed in that it did not include background levels of air pollution from this community, but instead from monitoring stations as far away as Roanoke, Charlottesville, and Harrisonburg Virginia.[26] Background levels for hazardous or toxic air pollutants were not considered at all. New modeling should be performed that includes accurate information about the background sources of existing pollution in the relevant area.

As a Major New Source of Greenhouse Gas Emissions, the Northampton Compressor Station Should Be Subject to Greater Scrutiny

The compressor station would be a major new source of greenhouse gas pollution, with nearly 130,000 tons per year of carbon dioxide equivalent emissions (significantly over the 100,000 tons per year threshold for major source review). It is not clear from the draft permit whether DAQ considered additional methane emissions from leaks and blowdowns, which can be more frequent and less predictable than indicated in the application. The draft permit should be withdrawn and those additional methane emissions considered in the total carbon dioxide equivalent calculations.

---

[23] One of the reasons used oil is regulated is because it contains harmful contaminants, such as benzene. *See, e.g.*, Transportation Environmental Resource Center, Used Oil, http://www.tercenter.org/pages/oilused.cfm.
[24] EPA Fact Sheet, Benzene, https://www.epa.gov/sites/production/files/2016-09/documents/benzene.pdf.
[25] 15A N.C. Admin. Code 2D.1107.
[26] Final EIS, p. 4-560.

Given Governor Roy Cooper's commitment to addressing the present danger to North Carolina from climate change and his decision to join the U.S. Climate Alliance, DAQ should hold the permit to greater scrutiny given that it would be a major new source of greenhouse gas pollution.

Additional Issues in the Draft Permit Require Atlantic to Supplement Its Application

According to Atlantic's revised application, this facility would release at least 21.2 tons per year of VOCs. In its first application, however, it indicated that the facility would release nearly twice that amount of VOCs, 41.1 tons per year. DEQ should require further verification of whether the previous number was more accurate.

The facility would also emit formaldehyde, which DAQ regulations consider to be merely an "acute irritant," not a carcinogen. As a consequence, the Department places a maximum hourly limit for formaldehyde, but does not regulate total annual exposure from sources such as the Northampton compressor station. Particularly given the other sources of formaldehyde pollution nearby—including from another compressor station in Pleasant Hill—the department should ensure that the community is not going to be exposed to dangerous levels of this carcinogen on an annual basis.

The draft permit contains a requirement for Atlantic to control odor, prohibiting the company from operating 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." But there is nothing in the permit application indicating how the company will comply with this requirement. The draft permit should be withdrawn and Atlantic should be required to demonstrate its management practices or control equipment that will prevent odorous emissions from the facility.

DAQ Should Inquire About the Possibility of More Stringent Emissions Controls

Atlantic purports to use "best in class" emission controls for the compressor station's turbines. The company proposed using Selective Catalytic Reduction (SCR) to control nitrogen oxide (NOx) emissions. Oxidation catalysts are proposed to control carbon monoxide (CO) and formaldehyde. According to the draft air permit, the applicant's SCR will have a control efficiency of 80 percent for the Centaur 40 turbine, but would drop to 44 percent for the Centaur 50L and Taurus 70 turbines.

The term "best in class" is a relative term and should not be confused with "Best Available Control Technology" or "BACT." BACT reflects the *best* demonstrated control

technology subject to economic and technical constraints, and was not required by DAQ. If BACT had been required, it is likely all the SCR for all three turbines would be approximately 80 percent, and as a result, would improve local air quality. In addition, BACT analysis may have led to the identification of more efficient oxidation catalysts to control carbon monoxide and formaldehyde. Even if not required for this facility, the Department should seek further information from Atlantic about the possibility of improved emissions control technologies for the Northampton Compressor Station.

Conclusion

Because of the errors in the draft permit, unanswered questions about risks to human health, carbon pollution, and environmental justice, the Department should withdraw the draft permit and require supplemental information from Atlantic.

Sincerely,

David L. Neal
Senior Attorney
Southern Environmental Law Center

On behalf of:
North Carolina State Conference of Branches of the NAACP
Haliwa-Saponi Indian Tribe
North Carolina Environmental Justice Network
Sierra Club
Natural Resources Defense Council
Concerned Citizens of Tillery
North Carolina Conservation Network
Clean Air Carolina
North Carolina Council of Churches
North Carolina Interfaith Power and Light
350 Triangle
Rachel Carson Council
Southern Environmental Law Center