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Via Electronic Mail and First Class Mail

Michael T. Higgins, Project Manager
New York State Department of Environmental Conservation
Division of Environmental Permits
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Re: Algonquin Gas Transmission, LLC / Permit ID 3-3730-00060/00013

Dear Mr. Higgins,

Clean Air Council (the “Council”), Earthworks, and Stop the Algonquin Pipeline Expansion (“SAPE”) (collectively “Organizations”) hereby submit the following comments in response to the New York State Department of Environmental Conservation’s (the “Department”) draft permit for Algonquin Gas Transmission’s (“Algonquin”) Algonquin Incremental Market (“AIM”) project with respect to the Southeast Compressor Station (“Southeast”), Permit ID 3-3730-00060/00013. Algonquin intends to increase the pipeline size and compressor station horsepower along its mainline, and install at Southeast two gas-fired turbine-driven compressors, a gas-fired emergency generator, one gas heater, a gas cooler for the new compressor units, and a remote reservoir parts washer.

The Council is a non-profit environmental organization headquartered at 135 South 19th Street, Suite 300, Philadelphia PA 19103. The Council has 8,000 members, including members in New York State. For more than 40 years, the Council has fought to improve air quality across the Mid-Atlantic Region. Its mission is to protect everyone’s right to breathe clean air.

Earthworks is a national non-profit organization dedicated to protecting communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions. Earthworks stands for clean air, water and land, healthy communities, and corporate accountability. We fulfill our mission through collaboration with organizations and grassroots groups and conduct research informed by sound science.

SAPE is a grassroots organization with a mission to educate our fellow citizens and elected officials about the negative impacts associated with the AIM Project. SAPE opposes the AIM gas expansion project because it may exacerbate climate change, endanger our safety and quality of life, contaminate water, air and soil, cause harm to domestic animals and wildlife, and threaten farmland and property values.

I. Background

Last month, New York made the bold decision to prohibit shale gas production because of concerns for health and the environment—concerns that are increasingly supported by scientific research and realities on the ground nationwide. The Department should place priority on these same considerations when deciding whether to issue a Title V air permit to expand operations at Southeast Compressor Station. Our organizations request that the Department reject Algonquin’s application for this permit since there is not enough baseline air monitoring and health data to fully analyze the potential risks posed to air quality and human health in both nearby communities and the surrounding region.

The *processing and transportation* of gas demands equal caution as gas production. A 2013 study by the RAND Corporation found that when compressor stations operate below capacity, they fall at the lower end of estimated emissions—but during times of frequent start-ups and shut-downs, actual emissions can be higher than estimates declared in permits.¹ In addition, the study found that more than half of the total costs of air quality damage from shale gas operations in Pennsylvania could be attributed directly to compressor stations.² Such considerations are particularly relevant for projects in areas already classified as “non-attainment” for federal ozone standards, as is the case for Putnam County, which hosts the Southeast Compressor Station.

In the event that the Department issues the Title V permit, the agency has a responsibility to ensure that operations do not degrade air quality or negatively impact the health of residents in Putnam, Rockland, and Westchester Counties. This is particularly important due to the existence of environmental justice areas near the Southeast Compressor Station (in particular the city of Peekskill), which by definition should not bear a disproportionate share of the negative environmental consequences of industrial projects or state policies.

Our Organizations also submit recommendations for (1) more protective monitoring requirements, (2) implementation of EPA Natural Gas STAR guidelines, (3) requiring accurate gas composition analysis from Algonquin, (4) correction of misleading statements made by Algonquin, and (5) setting more health-protective emissions limits.

Finally, our Organizations respectfully request that the Department hold an issues conference to address the many important considerations at hand regarding the Stony Point Compressor Station and larger AIM project.

¹ Aviva Litovitz *et al* 2013 *Environ. Res. Lett.* 8 014017.

² *Id.*

II. Our Organizations Commend the Department for Considering the Unity of the AIM and Atlantic Bridge Projects in its Permitting Analysis of the Southeast Compressor Station.

Our Organizations commend the Department for its proper consideration of Algonquin’s planned Atlantic Bridge project when analyzing the capacity and emissions of the Southeast Compressor Station. While Algonquin is planning the AIM project as part of an effort to increase gas transmission capacity to New York and New England, it is also developing the similar Atlantic Bridge project to increase gas transmission capacity to New England and the Canadian Maritime Provinces. Both projects involve the same pipeline and compressor stations.

The Southeast Compressor Station is slated for additional capacity under the Atlantic Bridge project. The Department correctly took the position that increased capacity added to the Southeast Compressor Station as part of the AIM project—that is, breaking the increase in capacity to the Southeast Compressor Station into two phases, within only a few years, and analyzing each separately—would not accurately take into account the full impact of the planned upgrades to the Southeast Compressor Station, and the linkages between the two Algonquin projects.

Our Organizations commend the Department for its consideration in the permitting process of all planned and anticipated related impacts, and urges that it continue to do so in future project analyses.

III. The Department Should Develop a Monitoring Protocol and Require Fenceline Monitoring for Hazardous Air Pollutants and Continuous Emissions Monitoring for Any Regulated Air Pollutants.

In order to correct for significant shortcomings in air emission assessments, it is necessary to conduct continuous monitoring close to facilities and at the homes of nearby residents, coupled with baseline and recurring health impact surveys and exposure assessments. Fenceline monitoring systems are integral for ensuring the protection of public health of communities located adjacent to compressor stations. The closest communities are located as near as 1,000 feet away from Southeast Compressor Station. Our Organizations recommend below that the Department require: (1) continuous stack monitoring; (2) fenceline monitoring; and (3) a baseline health study.

Continuous stack monitoring systems ensure that the facility is compliant with applicable NAAQS. Current stack tests requirements average emissions over time and could completely miss spikes in air pollution or episodic emission events that could significantly impact public health. While this approach may comport with current state and federal requirements, it fails to account for actual air pollution exposures, including spikes in pollution, experienced on the community or individual level. Reporting emissions every one, two, or three years, or just once during the lifetime of the permit, is inadequate. Emerging environmental health research confirms that spikes in air pollution and episodic emission events can cause health impacts

immediately or in as little as 1-2 hours.³ Continuous monitoring data would give the Department and Algonquin the opportunity to correct practices that cause spikes in air pollution and potentially harm health. For example, corrections can be made through new permit requirements for methane capture, fewer blowdowns, or tighter valve seals.

Due to the close proximity of the compressor stations (mere hundreds of feet) to residential areas, our Organizations recommend that Algonquin perform continuous stack monitoring for nitrogen oxides and sulfur oxides and report the data to the Department quarterly. The Southeast Compressor Station draft permit currently states that performance tests will be performed annually and makes no mention of continuous emissions monitoring systems, only intermittent emission testing.

Our Organizations also recommend fenceline monitoring. Ideally, monitoring would be managed by state or county Departments of Health and of Environmental Conservation, funded by Algonquin, and conducted by independent third parties, such as research organizations or academic institutions. Public participation is a critical element to ensure that air monitoring occurs in locations that would yield accurate results and where populations are most at risk (e.g., nearby homes and communities downwind of the compressor stations).

To ensure accurate data collection from fenceline monitoring systems, at least three to four monitors should be placed in different locations downwind of the proposed facility, and also at the north, east, south, and west fencelines of the proposed facility. These monitors should be placed in positions that take into account site layout, topography, meteorological conditions, and the position of surrounding communities. Each monitor should be capable of measuring concentrations of the following pollutants: speciated VOCs and HAPs via canisters, xylene, ethane, isobutene, methane, propane, nitrogen oxides, carbon monoxides, and sulfur dioxide, as well as wind direction and weather conditions.

In order to measure fluctuations in area exposure, a combination of continuous measurement of pollutants, a continuous screening based on local weather conditions, and canister measurements to detect individual components of chemical mixtures should be used.⁴ Continuous measurements averaged hourly are important for providing better data resolution. When taking measurements from fenceline systems, these actions should be performed on a daily basis: (1) calibration of sensing equipment, (2) visual inspection and repair of equipment, (3) daily recovery of canisters, and (4) recording and averaging of equipment data.

Lastly, there should be health studies. In the absence of initiative by state regulatory agency or funding from operators, non-profit organizations have stepped in to develop and implement health survey and monitoring projects, including two currently underway near compressor stations in New York (Hancock in Delaware County and Minisink in Orange County) and one under development (Georgetown in Madison County). A leader in these efforts has been the

³ David Brown, Beth Weinberger, Celia Lewis and Heather Bonaparte, "Understanding exposure from natural gas drilling puts current air standards to the test," *Rev. Environ. Health* 2014, available at <http://www.environmentalhealthproject.org/wp-content/uploads/2014/04/reveh-2014-0002-Brown-et-al.pdf>.

⁴ *Id.*

Southwest Pennsylvania Environmental Health Project (SWPA-EHP), a non-profit environmental health organization made up of a team of health practitioners and public health scientists, and created to assist residents whose health has been impacted by natural gas drilling and infrastructure.⁵ SWPA-EHP has expressed interest in applying their established air and health monitoring protocol to the areas around the Southeast Compressor Station. The SWPA-EHP air and health monitoring protocol is attached to this comment. In addition, researchers with the Institute for Health and the Environment at the University of Albany have indicated their possible participation in a monitoring project. Discussions regarding this potential collaboration will take place separately.

Since air modeling of the proposed facility exceeded significance levels in an environmental justice neighborhood, our Organizations also urge the Department to require Algonquin to perform an exposure assessment of potential health impacts from the proposed facility. The assessment should use EPA methodologies designed to assess risk from individual facilities and provide a full analysis of the risk factors for hazardous air pollutants. The assessment should also include dispersion modeling for HAPs and should assess potential cumulative impacts.

IV. The Department Should Provide Limits to Blowdown and Purge Emissions Based on EPA Natural Gas STAR Guidelines.

As the Department is aware, pipeline quality natural gas is over 90% methane, both a powerful greenhouse gas and a valuable commodity. Our Organizations urge that the Department require Algonquin, when technically feasible, to implement the applicable EPA Natural Gas STAR guidelines, in particular: (1) the guidance on PRO Fact Sheet No. 401, “Inject Blowdown Gas into Low Pressure Mains or Fuel Gas System”⁶ and (2) the guidance on PRO Fact Sheet No. 403, “Use Inert Gases and Pigs to Perform Pipeline Purges.”⁷ The first guideline counsels that to the extent the Algonquin pipelines are connected to or nearby a low-pressure gas system, Algonquin should redirect gas into that system rather than venting it into the atmosphere during blowdowns. The second guideline encourages the venting of inert gas into the atmosphere during purges rather than venting and wasting the natural gas itself.

The Department should also require Algonquin to develop a notification system for blowdowns or other large emissions and/or noise events that would allow sufficient time (e.g., 72 hours) for residents to either leave the area or take measures to limit their exposure. New projects like the AIM project should incorporate these less wasteful and polluting best practices as specific permit conditions.

V. The Department Should Require Algonquin to Provide Gas Analysis for Gas Extracted by Hydraulic Fracturing.

The last few years have seen a growing awareness of the magnitude of fugitive gas emissions from natural gas production, transmission, and distribution infrastructure. A recent study by the

⁵ See <http://www.environmentalhealthproject.org/>.

⁶ See <http://www.epa.gov/gasstar/documents/injectblowdowngas.pdf>.

⁷ See <http://www.epa.gov/gasstar/documents/useinertgases.pdf>.

National Oceanic and Atmospheric Administration estimates methane waste as a byproduct of the shale gas extraction process could be as high as 9%, as opposed to earlier estimates of 2.4% by EPA.⁸ Methane, however, is not the only component of natural gas leaked into the atmosphere in fugitive emissions. Volatile organic compounds (VOCs), for example, are present in natural gas and leak along with the methane, causing localized pollution and public health impacts.

In calculating projected fugitive pipeline emissions in its application, Algonquin relied on “an extended gas analysis taken from an operation in Thomaston, Texas in November 2005” rather than any analysis of the gas composition from gas extracted from the Marcellus Shale, the principal source of the gas flowing through Algonquin’s system. The only concession Algonquin made to this difference is by “scaling” the numbers “to be representative of gas” at the compressor station.

As Algonquin is aware, different types of gas have different concentrations of regulated contaminants. For example, the U.S. Geological Survey determined in a 2012 study that Pennsylvania fracked gas contains elevated levels of radon.⁹ Algonquin’s admission that the 2005 study was of gas with different VOC content indicates that Algonquin has some undisclosed sense of the content of the fracked gas traveling through its pipelines. Nonetheless, Algonquin has not presented any analysis of the composition of fracked gas from the Marcellus Shale. Therefore, the fugitive emissions projections Algonquin presents are simply not accurate and could impact emissions projections.

Our Organizations thus urge the Department to require Algonquin to provide this gas analysis and rerun the emissions numbers based on this new, more representative data. In the absence of accurate representations of the content of the gas that will be leaking from its facilities, the Department should invoke 6 NYCRR 621.13, whereby the Department may modify, suspend, or revoke a permit where the permittee has made “materially false or inaccurate statements in the permit application or supporting papers.”

VI. Algonquin Has Falsely Portrayed the AIM Project as Reducing Compressor Station Emissions.

Algonquin has made public statements about its AIM project giving the false impression that, because of its replacing older compressor units with new technology, the project will reduce emissions at the compressor stations.¹⁰ Such statements are intended to quell protest by impacted

⁸ Miller, Scot M., et al. “Anthropogenic Emissions of Methane in the United States.” *Proceedings of the National Academy of Sciences*, 18 Oct. 2013. See also Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) Study Report, at Section 3.4.2. Prepared for the Pennsylvania Department of Environmental Protection, January 2015, available at http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-105822/PA-DEP-TENORM-Study_Report_Rev_0_01-15-2015.pdf.

⁹ Rowan, E.L., and Kraemer, T.F., 2012, Radon-222 Content of natural gas samples from Upper and Middle Devonian sandstone and shale reservoirs in Pennsylvania: Preliminary data: U.S. Geological Survey Open-File Report 2012–1159, 6 p., <http://pubs.usgs.gov/of/2012/1159>. (Available only online.)

¹⁰ See, e.g., Spectra Energy Corp comments to the New York Energy Highway Request for Information, available at <http://www.nyenergyhighway.com/Content/documents/51.pdf>.

neighbors of the compressor stations. These statements are misleading and inaccurate. While newer technology will be used as part of the AIM project, the compressor stations will be ramping up their operations and consequently emitting more of certain air pollutants than they used to. A comparison of the actual emissions data from the stations compared to the emissions limits contained in the draft permit reveals this increase.

The 2013 actual emissions data reveal that the Southeast Compressor Station released less CO than the draft permit would allow it to emit going forward. Specifically, Southeast in 2013 emitted less than 7.5 tons of CO, whereas the draft permit allows the compressor station to emit over 52 tons of CO.

The Department should ensure that local residents living near the compressor stations are apprised of the likely increase of certain types of emissions at the compressor stations and given a renewed opportunity to comment.

VII. The Department Should Set Permitted Emissions Levels Lower to Adequately Protect Health and Comply with 6 NYCRR 211.1.

The draft permit requires Algonquin to comply with 6 NYCRR 211.1, which bans causing or allowing “emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property.

Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others” (emphasis supplied). This is a separate and independent requirement from the other requirements the Department set forth in the draft permit, and it is the Department’s interpretation of the Legislature’s will as expressed in the Environmental Conservation Law, which created the Department.

Primary NAAQS for criteria pollutants must be set at a level adequate to protect public health with an adequate margin of safety. 42 U.S.C. § 7409(b). However, despite decades of implementation of the Clean Air Act, air pollution still kills approximately 200,000 Americans every year.¹¹ There is substantial evidence that significant health effects are experienced as a result of criteria pollutants even in attainment areas.¹² Air quality tested by Earthworks and other organizations around Pennsylvania compressor stations did not reach the levels of pollutants allowed in the draft permits for the Southeast facility.¹³ Yet for years, residents living near those Pennsylvania compressor stations have experienced changes in their health consistent with

¹¹ Caiazzo, F., Ashok, A., Waitz, I. A., Yim, S. H. L., and Barrett, S. R. H. 2013. “Air pollution and early deaths in the United States. Part I: Quantifying the impact of major sectors in 2005.” *Atmospheric Environment* 79:198–208.

¹² DiBattista, Carmine and Brown, David R. (2003) “Quality of Life and the Attainment of National Ambient Air Quality Standards (NAAQS). Are They Compatible? More Questions Than Answers. The Challenge for Risk Assessment.” *Human and Ecological Risk Assessment: An International Journal*, 9:4, 637-640.

¹³ Earthworks, *Blackout in the Gas Patch: How Pennsylvanians are Kept in the Dark on Health and Enforcement*. 2014. <http://blackout.earthworksaaction.org>.

exposure to the detected pollutants, including dizziness, headaches, nosebleeds, and neurological damage.¹⁴

Following 6 NYCRR 211.1, the Department retains the discretion to set more restrictive standards that will prevent the “emissions of air contaminants to the outdoor atmosphere ... which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property.” Our Organizations urge the Department to do just that.

Furthermore, certain pollutants emitted by fracked gas combustion are not adequately safeguarded against in the draft permit as it stands. As noted above, fracked gas from the Marcellus Shale contains elevated levels of radon, the leading cause of lung cancer among non-smokers.¹⁵ The Southeast Compressor Station is designed to operate on gas from the pipeline which will have just recently been extracted from nearby gas wells in Pennsylvania. Radon-222, which has a half-life of 3.8 days, will still be present in significant quantities to leak from the compressor station and be released in its emissions.¹⁶ During normal operations, the levels of radon emitted by the compressor station may not be hazardous.¹⁷ However, during blowdowns or other events where significant amounts of pipeline gas are vented to the atmosphere, emissions levels may be dangerous. Furthermore, a study commissioned and just published by the Pennsylvania Department of Environmental Protection recommends that fracked gas distribution facilities “[s]urvey and sample internal surfaces of natural gas plant piping and filter housings for radiological contamination.”¹⁸ Our Organizations urge that the Department set emissions limits for radon taking into account short-term spikes in planned and fugitive pipeline gas emissions.

After a few days, radon-222 decays into a lead isotope, lead-210 and remains lead-210 for 22 years until ultimately decaying into a stable form of lead, lead-206. The draft permit does not set emissions limits for lead. Because of the prevalence of radon in emissions generated from burning natural gas from the Marcellus Shale, the Department should also set emissions limits for lead based on the lead NAAQS.

¹⁴ Earthworks. *Gas Patch Roulette: How shale gas development risks public health in Pennsylvania*. 2012. <http://health.earthworksaction.org>.

¹⁵ “A Citizen’s Guide to Radon.” www.epa.gov. United States Environmental Protection Agency. October 12, 2010.

¹⁶ Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) Study Report, at Section 9.1.4.3. Prepared for the Pennsylvania Department of Environmental Protection, January 2015, available at http://www.e-library.dep.state.pa.us/dsweb/Get/Document-105822/PA-DEP-TENORM-Study_Report_Rev_0_01-15-2015.pdf.

¹⁷ *Id.*

¹⁸ *Id.* at Section 9.2.4.

Conclusions

Our Organizations appreciate the opportunity to comment on this proposed AIM Project permit. Our Organizations urge the Department to consider these recommendations: (1) more protective monitoring requirements, (2) implementation of EPA Natural Gas STAR guidelines, (3) requiring accurate gas composition analysis from Algonquin, (4) correction of misleading statements made by Algonquin, and (5) setting more health-protective emissions limits. Please continue to keep our Organizations apprised of further developments regarding Permit ID 3-3730-00060/00013.

Sincerely,



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Susan Van Dolsen
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