

January 14, 2016

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE Room 1 A  
Washington, DC 20426

re: Tennessee Gas Pipeline Company, L.L.C., Docket No. CP16-21

From Mason (NH) Pipeline Committee

RE: Protection from the Health Impacts of Compressor Stations is Lacking – **Baseline Air Quality Studies Needed Near Proposed Compressor Sites**

Dear Secretary Bose:

The health effects of gas pipeline compressor stations have been documented by EPA, the SW Pennsylvania Health Project, environmental chemist Wilma Subra of Earthworks, and Dr. Curtis Norgaard, Boston pediatrician. These researchers find the following **medical conditions prevalent in individuals living in close proximity to compressor stations**:

- \* More than half the people suffer from respiratory impacts, throat and nasal irritation, weakness and fatigue and muscle pains.
- \* Close to half the people suffer from vision impairment and sleep disturbance.
- \* 42% suffer from allergies, eye irritation, and sinus problems.
- \* 39% suffer from joint pain, breathing difficulties and severe headaches.

The chemicals detected in the air near compressor stations are associated with these medical conditions.

The chemicals of most concern are three carcinogens -- benzene, formaldehyde and radon -- as well as nitrogen dioxide and fine particulates (PM2.5). PM2.5 acts to increase deep lung absorption of air pollutants. Other volatile organic compounds (VOCS) and hazardous air pollutants (HAPS) are emitted by compressor stations. The mixture of these chemicals in the air people breathe contributes to an array of negative health effects.

Subra has documented acute and chronic health impacts experienced by people living and working near compressor stations. **In addition to the above prevalent conditions, many people suffer the following acute impacts:**

- \* Nausea, vomiting
- \* Dizziness, light-headedness
- \* Irregular heartbeat
- \* Depression, anxiety

**Serious chronic long-term impacts that have been documented are:**

- \* Damage to Liver, Lung, Kidney, Cardiovascular system
- \* Damage to Developing Fetus and Reproductive system
- \* Mutagenic Impacts and Developmental Malformations
- \* Brain impacts and Damage to Nervous system
- \* Aplastic Anemia
- \* Leukemia, and Changes in Blood Cells and Blood Clotting Ability

From EPA Office of Inspector General: (Report No. 13-P-0161, Feb, 20, 2013, page 3)

**“EPA Needs to Improve Air Emissions Data for the Oil and Natural Gas Production Sector”**

**Table 2: Health impacts of significant pollutants emitted from upstream oil and gas production activities**

<b>Greenhouse gases (methane/ carbon dioxide)</b>	Potential health impacts related to climate change will vary, but threats include increased incidence of serious infectious disease, extreme temperatures that lead directly to loss of life, and warmer temperatures that can increase air and water pollution and result in human health impacts.
<b>NOx and VOCs, which contribute to ground-level ozone</b>	Health impacts may include reduction of lung function, inflammation of airways, aggravation of asthma, increased susceptibility to respiratory illnesses (e.g., pneumonia and bronchitis) and premature death. Vulnerable populations (e.g., people with lung disease, children, and the elderly) are especially at risk.
<b>Fine particulate matter (PM 2.5)</b>	Health impacts may include worsening of lung function, asthma attacks, bronchitis, increased susceptibility to respiratory infections, and premature death.
<b>Air toxics including benzene, toluene, ethylbenzene, and xylenes</b>	Health impacts from short-term exposure may include skin and sensory irritation, central nervous system problems, and respiratory problems. Health impacts from long-term exposure may include problems with kidney, liver, and blood systems. For example, benzene is a human carcinogen and health impacts from short-term exposure may include drowsiness, dizziness, headaches, and irritation of the eyes, skin, and respiratory tract. Long-term exposure has been linked to various blood disorders, reproductive effects, and increased incidence of leukemia.

EPA is aware of these health problems associated with compressor stations and other fracked gas infrastructure, but other than gathering more data to document these problems EPA has failed so far to establish air quality standards to protect people exposed to fracked gas infrastructure emissions.

Neither does NHDES appear to have air quality standards that would be protective. Both agencies consider compressor stations to be “minor” emitters, based on the National Ambient Air Quality Standards (NAAQS). These standards measure pollutants in tons per year averages, a totally inadequate measure for pollutants that may vary wildly over the course of a day or week -- from nothing at all to peaks many times the EPA limit. Human health is much more affected by frequency and duration of peak pollutant emissions, not annual averages. (Madison County NY Dept of Health Comments to FERC, Docket CP14-497, 10/15/2014)

Compressor stations have wide variations in their emissions from day to day and over the course of a day. Averaging pollutants in tons per year allows KM/TGP to say they meet EPA's air quality standards, while masking the extreme peaks of pollutants that compressor stations frequently emit.

It is a shame that EPA has so far failed to establish relevant air quality standards to adequately protect human health from compressor station emissions.

In southern NH the NED gas pipeline proposes a huge 41,000 HP compressor station that would affect air quality and human health in the towns of New Ipswich, Greenville, Temple, Mason, and Rindge. TGP has mapped 13 proposed alternative sites in or near these towns for Market Path Station 4. In addition, Market Path Station 3, also 41,000 HP, is proposed for MA or NH: 3 of its proposed alternative sites are located in Winchester, NH.

**Baseline air quality in compressor station impacted areas needs to be established before NED is constructed, to determine air quality impacts from the proposed compressor stations.**

Ground level air sampling for benzene, formaldehyde, fine particulates (PM2.5), nitrogen dioxide and radon needs to be done on a periodic (perhaps monthly) basis throughout the year before construction begins, at sites near all sensitive receptors within 2 miles of all proposed compressor locations.

Mason Pipeline Committee asks FERC to require Tennessee Gas Pipeline Co. to fund air quality baseline studies that meet the above parameters in all areas where compressor station are proposed along NED's entire route, to gather baseline data on the air pollutants listed above. These studies should be done by independent contractors who have not previously worked for KM/TGP and do not anticipate doing so.

When private project developers apply to permitting agencies, they are often required to fund relevant studies by independent contractors to gauge the project's impact. Please apply these sensible standards to the NED project.

Sincerely,



Liz Fletcher  
For Mason NH Pipeline Committee

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The following publications are sources of health data quoted in this comment:

EPA Office of Inspector General, "EPA Needs to Improve Air Emissions Data for the Oil and Natural Gas Production Sector" Report No. 13-P-0161, Feb, 20, 2013

Macey et al. "Air concentrations of volatile compounds near oil and gas production: a community-based exploratory study" Environmental Health 2014.13:82

Madison County, New York, Dept of Health, Comments to FERC, Docket CP14-497-000, Dominion Transmission, Oct. 15, 2014

Southwest Pennsylvania Environmental Health Project, "Summary on Compressor Stations and Health Impacts" Feb, 24, 2015.

Dr. Curtis Norgaard, speaking in Temple as reported in Monadnock Ledger Transcript by journalist Ashley Saari, December 17, 2015.