Medical Scientist Speak Out on Potential Health Hazards of Proposed Compressor

STATEMENT OF DR. ROBERT J. LAUMBACH

The proposed Compressor 206 in Somerset County NJ is a high-risk experiment that will endanger the safety and health of the citizens of New Jersey. Two 16,000 hp gas-fired turbines will increase pressure and gas speed and temperature in an aging pipeline that is over 50 years old. The construction is to take place in the immediate vicinity of an active quarry where dynamite blasts are taking place regularly. It will also endanger the local area's ecosystems that will become the receptors of a complex mix of hazardous materials releases over the project's working lifetime of 30 or more years. The atmospheric emissions from the proposed Compressor 206 will have an impact far beyond and above what is described in documentation that has been submitted to Federal (FERC) and State (NJDEP) agencies in support of the proposed project.

Indeed, even the normally anticipated, in other words "planned", air emissions from the proposed Compressor 206, when operating under ideal conditions, will substantially impact the air quality within the State of New Jersey. These air emissions will adversely affect the health of NJ residents not only locally but across multiple NJ counties. The health of susceptible individuals such as children, the elderly, and individuals with cardiovascular and/or respiratory conditions will be most at risk.

Emissions from the proposed compressor will adversely affect local and regional levels of several types of air pollutants: (1) criteria pollutants, most importantly ozone, (2) Greenhouse Gases, most importantly methane, and (3) hazardous air pollutants that include potent airborne cancer-causing air toxics.

Firstly, emissions of nitrogen oxides will worsen the region's longstanding ozone pollution problem. Ozone is a significant threat to both human and ecological health. Ozone is created through atmospheric chemical reactions from "precursor" emissions that include Nitrogen Oxides and Volatile Organic Compounds. Impacts of ozone on human health range from eye and respiratory irritation to significant pulmonary distress that can lead to chronic illness and premature death. Ozone damages lung tissue, intensifies heart disease and lung diseases such as asthma, and reduces resistance to diseases such as pneumonia. Children, asthmatics and the elderly are particularly vulnerable to ozone. Healthy adults working outdoors, including farmers and construction workers, are also adversely affected. Ozone damages plants, impacting crops and forests and causes degradation of organic materials, both natural and synthetic, including components of motor vehicles and machinery. Due to its failure to meet the 2008 federal standard for ozone, the entire northern part of New Jersey is in non-attainment for ozone, and therefore is required to reduce emissions of the ozone precursors Nitrogen Oxides and Volatile Organic Compounds. Adding new emissions of these precursors, as will happen if the proposed Compressor 206 is constructed, should be avoided for the benefit of the State of New Jersey.

Secondly, normal operations of the proposed Compressor 206 will release significant emissions of methane, a potent Greenhouse Gas that contributes to ongoing climatic change. Past experience has shown that real-world methane emissions from gas compressors are in fact higher due to leaks and other inadvertent events. Climate change has disproportionate impacts on our State, due to its coastal character, extensive urbanization, and vulnerable residents. Clearly, we need to look at present and future impacts on climate change when making decisions about projects that will further accelerate and worsen climatic change in our region.

Thirdly, as per the documentation submitted in support of the proposed project, Compressor 206 will release into the air, on a regular basis, a complex mixture of air toxics that includes known cancer-causing chemicals. In fact, over 70 hazardous air pollutants are known to be routinely emitted from gas-fired compressors. For seven of the air toxics listed as "normal" Compressor 206 emissions, the annual combined estimated emission rates are actually higher than the reporting thresholds for these chemicals that are listed in the New Jersey Administrative Code [Chapter 27, Subchapter 17 (Control and Prohibition of Air Pollution by Toxic Substances and Hazardous Air Pollutants) of Title 7]. Specifically, for these seven chemicals, the ratio (see chart with emission estimate and NJ reporting thresholds), with both values in pounds/year, listed below, along with the cancer-causing ranking designation of the US Environmental Protection Agency (USEPA) or of the World Health Organization (WHO) International Agency for Research on Cancer (IARC) for each chemical:

Chemicals: Values in pounds/year	**Industry Emissions Estimates**	**New Jersey Reporting Thresholds**	**Cancer - Causing Ranking Designation**
Formaldehyde	**668**	**3.5**	**IARC Group 1: carcinogenic to humans**
Acetaldehyde	**88**	**21**	**IARC Group 2B: carcinogenic to humans**
Acrolein	**14.04**	**1**	**USEPA: possible human carcinogen**
Benzene	**26.36**	**6**	**IARC Group 1: carcinogenic to humans**
Ethylbenzene	**70.4**	**19**	**IARC Group 2B: carcinogenic to humans**
Naphthalene	**2.856**	**1.4**	**USEPA: possible human carcinogen**
Propylene Oxide	**63.6**	**12**	**IARC Group 2B: carcinogenic to humans**

It should be noted, that the above estimated emission rates are merely calculations derived from vendor specifications and are not based on actual field monitoring of

similar installations, potentially operating under non-ideal conditions. It should be further noted that the above list includes the top-two national causes of cancer risk from inhalation of gaseous air toxics, namely benzene and formaldehyde. It is also a fact that the entire State of New Jersey has been for decades experiencing some of the highest risks from environmental airborne carcinogens. Moreover, Somerset and Middlesex counties, the two counties that would be most adversely impacted by the proposed Compressor 206, already rank in the highest percentiles (top 2-3%) among all US counties with respect to ambient airborne benzene levels. Clearly, any intentional additions to these already unacceptable environmental cancer risks should be avoided.

In conclusion, I hope that this outline will be useful information regarding a few of the more important issues regarding local and regional air quality and human health related to the proposed siting and operation of Compressor 206 in Franklin Township.

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April 25, 2019

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