

Docket 7970

PREFILED TESTIMONY OF CURT M. FREEDMAN, PE
ON BEHALF OF NATHAN PALMER
986 ROTAX RD. N. FERRISBURG VT, 05473

Mr. Freedman is testifying as to safety concerns regarding the close proximity of a high-pressure natural gas transmission line to a residence.

Q1. Please state your name, occupation, and business address.

My name is Curt Freedman, I am the principal of CMF Engineering, Inc., 24 Ridge Road Longmeadow, MA 01106 Tel: 413/567-1175

Email: CMF.FREEDMAN@gmail.com

I am a Registered Professional Engineer in Vermont and eight other states.

Q2. Have you ever testified before the Public Service Board?

A2. Yes, I have testified in previous utility cases.

Q3. Do you have experience with natural gas systems?

A3. As an engineering professional, I have had extensive experience over the last 25 years in the design and specification of natural gas heating systems and applaud the further utilization and implementation of natural gas for reasons of: efficiency, cost reduction, air quality, and national energy security/sustainability. See my resume for more information. I have also participated professionally in origin & cause investigations of explosions/fire from natural gas pipelines.

Q4. What is the purpose of your testimony today?

A4. I have been retained by **Nathan Palmer**, 986 Rotax Road, Monkton, VT 05469 to provide engineering comments on the proposed high pressure natural gas pipeline that is planned to be installed and distributed through his property and through Monkton, Vermont.

Q5. As a registered professional engineer, what are your concerns regarding the siting of this pipeline on the Palmers property?

As a registered professional engineer, I am obligated by the *Engineering Canon of Ethics*:

Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.

I have severe concerns for the very close proximity of the proposed natural gas pipeline to many of the homes/structures along the proposed pipeline path. Based on my own direct experience investigating natural gas fires/explosions, when ruptures are experienced for even low pressure natural gas lines (less than 10 psi), fires/explosions that may ensue are likely to cause severe damage, injury, and/or fatalities to any nearby structures or persons.

There has been considerable concern voiced by the property owners along the proposed pipeline route that the subject natural gas line is too close to their homes, a concern that I also share.

Q6. As a registered professional engineer, what would you recommend as reasonable setbacks from residences, to ensure public health and safety?

A6. Please see quotation below from a report on pipeline safety and recommended minimum set-back distances by Charles Rhodes, Ph.D., P.E [Natural Gas Pipeline Safety Setbacks from Large Diameter High Pressure Natural Gas Pipelines]:

Setback Uncertainty

Due to uncertainty regarding wind conditions and the position of the nearest point of ignition it is impossible to specify a practical safety setback distance that will ensure no damage or personnel injury from concussion or shrapnel related to the delayed ignition explosion. However, the subsequent fire emits a quantifiable amount of thermal radiation for which a reasonable safety setback distance can be calculated.

Based on the distance standard in the Rhodes report, the following minimum setback distances would be required:

12" line, 600 psi: **793** feet
12" line, 1,440 psi: **991** feet

With the expected increase of demand for natural gas, larger gas pipelines would require the following set-backs:

18" line, 600 psi: **1,190** feet
18" line, 1,440 psi: **1,486** feet

24" line, 600 psi: **1,586** feet
24" line, 1,440 psi: **1,981** feet

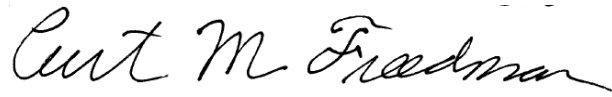
Based on the developer's proposed pipeline set-backs and the recommended minimum standard of approximately **1,000** feet or greater, the proposed high

pressure natural gas pipeline path should be reevaluated to better protect the Public health and safety.

Q7 Does this conclude your testimony?

A7 Yes. Please feel free to contact me to discuss this matter further.

Very truly yours,



Curt M. Freedman, PE, CEM, LEED AP
[Vermont P.E. #7295]

