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Chairman Stephen G. Burns (Chairman@nrc.gov)
United States Nuclear Regulatory Commission
Washington DC 20001

Subject:

Commission Statements made before Congress March 24, 2014
NRC's use of EPA's ALOHA Program to Evaluate Proposed Gas
Transmission Line Explosion Near Indian Point

Dear Mr. Chairman

I have reviewed your testimony before Congresswoman Nita Lowey on
March 24, 2015 on [YouTube](#).

The Congresswoman questioned you on the use of EPA's ALOHA program
to calculate the safe distance from a postulated explosion of the proposed
42-inch gas transmission line.

Your response inferred that Regulatory Guide 1.91 does not calculate the
impact of a vapor cloud explosion, heat flux and/or jet fire. You indicated
the staff would get back to the Congresswoman to clarify if required.

On March 24, 2015 Mr. Douglas Tiffit provided the following clarification to
your statement:

*“ I did have the chance to check with our headquarters group that
performed the analysis. ALOHA is used to calculate the amount of
gas that would be released during a pipe break. That amount of gas
is converted into pounds of TNT by our technical group. The pounds
of TNT is used in the Reg Guide 1.91 formulas to determine the
minimum safe distance.”*

But page 146 of the ALOHA Manual specifically states:

“You can use ALOHA to model two types of gas pipeline leak

scenarios:

- *A pipeline connected to a very large (**infinite**) reservoir, so that gas escapes from the broken end of the pipeline at a constant rate for an indefinite period of time; or*
- *A finite length of pipeline that is closed-off at the unbroken end (for example, by a shut-off valve). Because the pressure within this section of pipe declines as gas is released, release rate drops over time, and the release continues only until the finite length of pipe is emptied. **ALOHA cannot model gas release from a pipe that has broken in the middle and is leaking from both broken ends.**” (Emphasis added by EPA)*

The NRC issued Revision 2 to Regulatory Guide 1.91 in April 2013. The purpose for this revision was stated as:

*“Revision 1 of the guide did not address the effects of explosions from liquids, cryogenically liquefied hydrocarbons, **and vapor clouds**, (Emphasis added) or for fire and explosions from fixed facilities and pipelines.”*

Regulatory Guide 1.91 Revision 2 contains 17 references, some of which may be used to calculate flow rates, vapor cloud explosions, jet fires and heat flux.

It is unclear why the NRC Staff used ALOHA when it is not cited as a reference and contains explicit prohibitions against analyzing this type of event.

Again, I request the Commission direct the NRC Staff to withdraw its approval to FERC. The misapplication of ALOHA strongly suggests the assessment does not conform with the generally accepted guidance in 29 CFR Appendix C to §1910.119 – “Compliance Guidelines and Recommendations for Process Safety Management.”

The Commission also needs to direct the NRC Staff to endorse a truly independent and transparent study that must include experts and other potentially impacted residents of the Indian Point area.

Congresswoman Lowey's questioning seemed focused on why the NRC used the ALOHA program. Your response and its clarification described how the NRC used the program, not addressing why a program explicitly prohibited for this application was used. I also believe you have the responsibility to communicate with Congresswoman Lowey and provide a direct explanation as to why NRC used the ALOHA program, whose misuse may impact the safety of more than 20 million residents of the area.

Sincerely,



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cc: Senator Schumer
Senator Gillibrand
Senator Markey
Congresswoman Lowey
Assemblywoman Galef
| NRC's Office of the Inspector General