

August 25, 2015

Chairman Stephen G. Burns
Nuclear Regulatory Commission
Mail Stop O-16G4
Washington, DC 20555-0001

Dear Chairman Burns:

I write on behalf of Nuclear Information and Resource Service to request that NRC retract its finding of “no significant impact” provided to the Federal Energy Regulatory Commission (FERC) regarding Spectra Energy’s proposed Algonquin Incremental Market project – which would place a 42-inch, high-pressure natural gas pipeline adjacent to the Indian Point nuclear power plant in Buchanan, New York – and recommend that construction of the project be prohibited until an independent, transparent, thorough risk assessment, with the inclusion of a transient risk analysis, is completed that demonstrates that the siting of the pipeline is acceptable in this location.

NIRS is an independent, non-profit organization that has been a trusted source of information on nuclear power plant operations, radioactive waste, emergency preparedness, and radiation health risks since 1978. Since FERC accepted NRC’s finding and issued a no significant risk determination in March 2015, very significant flaws have arisen in the technical analysis the NRC provided, due to the proposed pipeline’s proximity to Indian Point. In a letter submitted to FERC Chairman Norman C. Bay today, we have advised FERC that the AIM project must not be allowed to proceed unless and until the requested assessment determines that the pipeline can be located there safely and in compliance with NRC regulations, as demonstrated by an independent risk assessment.

On March 3, the FERC issued a “no significant impact” finding for the AIM project, based on an NRC determination that it poses no significant safety risk to Indian Point, which consists of two operating nuclear reactors and spent fuel pools with over 1,000 tons of flammable high-level radioactive waste. NRC documents were recently disclosed via Freedom of Information Act request, which indicate that your agency did not conduct a formal technical analysis of the potential nuclear safety impacts of a rupture and explosion of the pipeline near Indian Point, and that the agency and Entergy provided inaccurate and incomplete information, which formed the basis for FERC’s determination.

In fact, the technical analysis NRC staff conducted in order to reach that conclusion is barely worthy of the name. As the aforementioned documents reveal, NRC’s analysis was based on a rough, hand-drawn sketch of the plant and the proposed pipeline route, with neither detailed calculations and analysis, nor any name or signature indicating who prepared and/or reviewed the documents. Furthermore, NRC lacks relevant technical expertise in pipeline safety, pipeline rupture or explosive dynamics, and the documents confirm that the agency did not engage any

external expertise in evaluating the risk to Indian Point's reactors or irradiated fuel storage facilities. Staff who prepared the calculations failed to properly apply NRC's own equations for modeling blast radius and potential vapor cloud explosions.

In short, there is no basis for the NRC's determination that the pipeline does not pose a significant safety risk to Indian Point. There is, on the contrary, substantial basis for concern. Several critical structures at Indian Point lie within the potential impact radius (PIR) of the proposed pipeline route – including the switchyard that provides offsite electrical power to Indian Point and fuel storage tanks for emergency diesel generators, which are, respectively, only 115 and 105 feet from the proposed pipeline. The diesel generators are required to provide backup power to the reactors' safety systems when offsite power is lost, as it was in June 2015, when workers accidentally tripped a circuit breaker while removing a balloon from power lines in the Indian Point Unit 3 switchyard. The simultaneous loss of offsite power and unavailability of diesel generators can increase the probability of a station blackout event, the greatest risk for causing a loss of reactor coolant and a nuclear accident. Station blackout was the ultimate cause of the Fukushima nuclear disaster in 2011. After the tsunami destroyed the offsite transmission connections and the emergency diesel generators, the three operating reactors were left with only a few hours' worth of power from backup battery banks, which subsequently expired.

NRC has previously held that much smaller pipelines, located at a greater distance from nuclear plant structures, pose an unacceptable risk. This includes a 1991 determination, in which NRC found that natural gas pipelines and infrastructure installed at the Fort St. Vrain reactor in Colorado – all much smaller and at much greater distances from critical structures than the AIM pipeline would be from Indian Point – had posed unacceptable nuclear safety risks.¹ NRC issued an information notice advising licensees of its applicability to other reactor sites. In Orwellian fashion in the AIM case, NRC was only capable of determining that the proposed pipeline does not pose an unacceptable nuclear safety hazard by failing to conduct a proper scientific analysis.

NRC and FERC have also relied upon unverified representations by Spectra and Entergy, most significantly that pipeline operators could identify a rupture and stop the flow of natural gas within three minutes. The Town of Cortlandt's technical consultant, Richard Kuprewicz, has testified that this is not credible. The AIM pipeline would be remotely operated from Houston, Texas, and operators would require visual confirmation of the rupture location in order to close the appropriate valves, if they can even be identified. Pipeline ruptures routinely require much longer than three minutes to identify and get under control. For instance, it took pipeline operators 95 minutes to get the 2010 rupture of a pipeline in San Bruno, California under control; that pipeline was half the size of the proposed AIM line (30" in diameter versus 42" for AIM) and operated at less than half of the pressure (less than 400 psi, versus 850 psi for AIM). Other pipeline ruptures have taken up to three hours to identify and place under control.

Mr. Kuprewicz believes that Spectra's PIR figure of 845 ft. may be greatly underestimated. The San Bruno accident encompassed a much larger radius than predicted (PIR of 400 ft., while the

¹ NRC. "Information Notice No. 91-63: Natural Gas Hazards at Fort St. Vrain Nuclear Generating Station." October 3, 1991. <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1991/in91063.html>

actual blast radius was over 1,000 ft.). Furthermore, Entergy's 2014 risk analysis and NRC's confirmatory analysis do not take into account vapor clouds and heat flux and, as mentioned, the NRC does not have expertise in pipeline dynamics. Similar analysis of projected impact radii at other nuclear facilities ranged from 3,000 feet to more than one mile, at sites with smaller gas lines.

While the risk of an accidental rupture of the AIM pipeline near Indian Point is unacceptable, such an event need not be caused by an accident. Deliberate acts of malice or insanity, such as sabotage or terrorism, must be considered. The proposed pipeline would amplify the threat of an attack on Indian Point, by becoming an element in plans to cause a nuclear accident. Not only would damage to critical structures at the plant caused by a pipeline explosion create initiating conditions that could lead to a nuclear accident, the sound of explosions and the diversion of security, law enforcement and first responders to deal with the rupture would provide cover for attackers to infiltrate the plant and/or damage or disable other critical safety systems.

This risk would persist even if the Indian Point reactors were to be closed, due to the ongoing vulnerability of the spent fuel pools. Each of the pools stores irradiated nuclear fuel at maximum density, packed nearly as tightly as the reactor cores, but with around five times more fuel and far more radioactivity. In a 2006 report on the consequences of acts of terrorism on high-density spent fuel pools like those at Indian Point, the National Academies of Sciences concluded:

Spent fuel storage facilities cannot be dismissed as targets for such attacks ... Terrorists view nuclear power plant facilities as desirable targets because of the large inventories of radioactivity they contain. While it would be difficult to attack such facilities, the committee judges that attacks by knowledgeable terrorists with access to appropriate technical means are possible.²

Placing the thousands of tons of TNT equivalent adjacent to Indian Point would enhance potential attackers' "technical means" for carrying out an assault on the plant, and would thereby greatly increase the likelihood that such an attack could be successful. At minimum, it places dozens of lives and the loss of billions of dollars of energy infrastructure at risk; at worst, thousands of lives, many thousands of square miles of land, vital water and aquatic resources, and hundreds of billions to trillions of dollars could be lost, with far-reaching political and economic ramifications. Therefore, the AIM pipeline, if constructed, would pose a unique national security threat, regardless of whether or when the Indian Point reactors cease operations, by making both the reactors and the spent fuel pools more feasible and attractive targets for potential attackers. This threat is unacceptable and must be avoided.

NIRS therefore requests that NRC retract its finding of "no significant impact" and advise FERC to halt construction and any further action on the AIM project unless and until an independent, transparent, thorough risk assessment, with the inclusion of a transient risk analysis, is completed and proves the siting of the pipeline is acceptable in the proposed location.

² Committee on the Safety and Security of Commercial Spent Nuclear Fuel Storage, National Academies of Sciences. "Security of Commercial Spent Nuclear Fuel Storage: Public Report." Executive Summary, at page 4. The National Academies Press. Washington, D.C. 2006.

Thank you for your attention to this matter, and for taking our recommendations under consideration. If you have any questions, you may contact me by email at timj@nirs.org or phone at (301) 270-6477.

Sincerely,

Timothy L. Judson
Executive Director

Cc: Commissioner Jeff Baran
Hon. Charles Schumer, U.S. Senate
Hon. Kristen Gillibrand, U.S. Senate
Hon. Nita Lowey, House of Representatives
Hon. Eliot Engel, House of Representatives
Governor Andrew Cuomo
Attorney General Eric Schneiderman