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Algonquin Gas Pipeline Safety Study Issued

— State Agencies Demand FERC Reduce Risks of Pipelines Near Indian Point; Call on FERC to Ban Additional Natural Gas Capacity on the Algonquin Pipelines —

The New York Division of Homeland Security and Emergency Services, and the Departments of Public Service, Environmental Conservation, and Health (the Agencies) today issued a letter to the Federal Energy Regulatory Commission (FERC) with the results of a recently completed, independent risk analysis addressing a portion of the Algonquin natural gas pipelines located near the Indian Point nuclear facility in Westchester County. In their letter, the Agencies urge FERC — the federal agency with siting regulatory authority over interstate gas pipelines — to take additional action to minimize risks and protect public safety.

“Our consultant’s assessment informs logical next steps that must be taken by FERC to reduce the risk profile of Algonquin’s natural gas pipelines in the vicinity of Indian Point, and has identified areas that require further review,” **said the Agencies**. “While the probability of pipeline incidents is low, the proximity to the Indian Point nuclear plant makes the potential consequences of such an event very significant. Additional scrutiny and monitoring to better understand and reduce risks associated with the Algonquin pipelines is warranted. FERC must engage in further action to mitigate and investigate potential risks.”

The report identified areas of potential concern that should be used to inform appropriate regulatory activities designed to further reduce the risk profile during the remaining operating life of Indian Point, the transfer of spent nuclear fuel to dry cask storage, and decommissioning activities. In its letter (see below) to FERC, the Agencies called upon FERC to take the following immediate steps:

- FERC should not allow any additional natural gas capacity on the Algonquin pipelines. Given high demand in the Northeast for additional natural gas capacity, and the large diameter of the Algonquin Incremental Market (AIM) pipeline near Indian Point, there is potential that pipeline owner Enbridge, Inc. may request approval to send additional gas over the pipeline at higher pressures. The safety

analyses relied upon by FERC when approving the AIM project were based on current maximum operating pressures on the pipeline. The State has remaining questions about the safety assessments of AIM and the original Algonquin pipelines, and it is important to not increase the risk profile of the pipelines while questions remain and Indian Point is still operational.

- FERC should require regular testing of Enbridge's ability to remotely close valves on the 42-inch, 30-inch, and 26-inch pipelines in the vicinity of Indian Point within three minutes of an event. This valve closure time was noted by FERC when it approved the AIM pipeline, but it must be regularly confirmed for all three pipeline segments, the original Algonquin pipelines and the AIM pipeline.
- FERC must work with NRC to coordinate a review of Indian Point-owner Entergy Corp.'s decommissioning plan when filed to determine potential impacts to the original Algonquin pipelines and the AIM pipeline. Given the heavy excavator work that will be part of decommissioning, FERC may need to require Enbridge to temporarily cease gas operations during the decommissioning activities that may threaten the pipeline integrity.

The Department of Public Service (DPS), which is delegated by the federal government to ensure compliance with federal gas pipeline safety standards, has already enhanced monitoring of the pipelines in the vicinity of Indian Point. The Agencies recommend more regular communications between Enbridge and Entergy on incident prevention activities and emergency preparedness.

The Agencies also called on FERC to re-evaluate whether the NRC and Entergy analyses relied on by FERC during the review of the AIM project were sufficient. The NRC and Entergy analyses concluded that the Indian Point reactors could safely shut down if there were a pipeline incident, but they may not have fully considered all necessary and appropriate factors, including for example the different design characteristics of the buildings housing the spent nuclear fuel cooling pools.

The State commissioned the report by HDR Engineering, Inc., which assessed the potential risks of pipeline incidents in the vicinity of Indian Point. The report concludes that the upcoming closure of Indian Point's nuclear reactors and the removal of spent nuclear fuel from the spent fuel pools to on-site dry cask storage will reduce the risks related to a potential pipeline incident. Since it discusses critical infrastructure and the risk profiles of collocated gas pipelines and nuclear power reactors, the Agencies requested that FERC protect the confidential nature of the complete study.



June 22, 2018

Sent via Electronic Mail and U.S. Mail

Chairman Kevin J. McIntyre
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Safety Study of Algonquin Natural Gas Pipelines, Westchester County, New York

Dear Chairman McIntyre:

The New York State Department of Homeland Security and Emergency Services (DHSES), Department of Public Service (DPS), Department of Health (DOH), and the Department of Environmental Conservation (DEC) (collectively, the New York State Agencies) write to inform the Federal Energy Regulatory Commission (FERC) of a recently completed risk analysis addressing a portion of the Algonquin natural gas pipelines¹ located near the Indian Point Energy Center (IPEC) in Westchester County, and to urge FERC to take additional action. Based on the report, as well as the lack of complete information available to the New York State Agencies, FERC must engage in further investigation of and action to mitigate potential risks.

First and foremost, because the safety analyses relied upon by FERC when approving the Algonquin Incremental Market (AIM) project were based on current maximum operating pressures on the pipelines, FERC must not allow any additional gas capacity or increased pressure on these pipelines at this time. FERC cannot allow any additional capacity or increased pressure at least so long as IPEC remains in operation and spent fuel remains in pools and while questions remain about the safety analyses relied on by FERC or the Nuclear Regulatory Commission (NRC). Any additional gas capacity or increased pressure would also first require updated safety analyses reflecting such changes. The New York State Agencies commissioned the report by HDR Engineering, Inc. (HDR), which surveys the potential risks to the pipelines. The report concludes that the upcoming closure of IPEC's nuclear reactors and the removal of spent nuclear fuel from the spent fuel pools to on-site dry cask storage will reduce the risks related to a potential pipeline incident. However, given the information made available to HDR, ongoing public concern in the local communities, and the nature of the critical infrastructure involved, further review and action by FERC is necessary and must be done in an expeditious and transparent manner.

¹ The NYS DHSES-commissioned risk analysis reviewed three pipelines in the vicinity of IPEC that are owned by Algonquin Gas Transmission, LLC, a wholly-owned subsidiary of Enbridge, Inc. – two pipelines (26-inch diameter and 30-inch diameter) that have been in operation for many years, and the Algonquin Incremental Market (AIM) project, a 42-inch diameter pipeline approved by FERC in 2015. See Docket No. CP14-96-000, FERC Order Issuing Certificate and Approving Abandonment, issued March 3, 2015.

Additionally, as described more fully below, there are a number of additional questions that must be answered in the short-term to confirm FERC's conclusions that potential incidents on the Algonquin pipelines will not interfere with safe reactor operations and storage of spent fuel at IPEC.

A hard copy of the confidential report is being sent by U.S. mail. Since it discusses critical infrastructure and the risk profiles of collocated gas pipelines and nuclear power reactors, the New York State Agencies request that FERC protect the confidential nature of the document.

Although the report discusses various critical infrastructure components and should therefore remain confidential, the report's evaluations and conclusions build off certain publicly-available information, particularly with regard to various design characteristics of the IPEC facilities. Based on this limited design and locational information, there remain questions that need to be evaluated further by FERC and answers should be provided to the New York State Agencies in order to have a complete understanding of the existing risk profile of the pipeline segments near IPEC.

Recommendations for Additional Risk Reduction

The report identified areas of potential concern that should be used to inform appropriate regulatory activities designed to further reduce the risk profile during the remaining operating life of IPEC, the transfer of spent fuel to dry cask storage, and decommissioning activities. Based on these identified risks, we recommend the following:

- Given that previous safety assessments have been done based on currently approved operating pressures, FERC cannot allow any additional capacity or increased pressure on the three pipelines without at least conducting new safety assessments. During the remaining operating life of IPEC, including the transfer of spent fuel into dry cask storage, FERC cannot approve any applications for new capacity or increased pressures on the pipeline segments in close proximity to IPEC (including the 42-inch, 30-inch and 26-inch pipelines).
- DPS, which is delegated by the federal government to ensure compliance with federal gas pipeline safety standards, has already enhanced monitoring of the pipelines in the vicinity of IPEC. We recommend more regular communications between the pipeline owner, Enbridge, Inc., and Entergy on incident prevention activities and emergency preparedness. DPS is prepared to facilitate such coordination.
- FERC should require regular testing of Enbridge Inc.'s ability to remotely close valves on the 42-inch, 30-inch, and 26-inch pipelines in the vicinity of IPEC within 3 minutes of an event. This valve closure time was assumed by FERC when it approved the AIM pipeline, but it must be regularly confirmed for all three pipeline segments.
- Lastly, at some point after the reactors cease generating electricity, decommissioning and decontamination work will begin at the IPEC site. NRC and FERC must coordinate a review of Entergy's decommissioning plan when filed to determine potential impacts to the original Algonquin pipelines and the AIM pipeline. Given the heavy excavator work that will be part of decommissioning, FERC may need to require Enbridge, Inc. to temporarily cease gas operations during the decommissioning activities that may threaten the pipeline integrity.

The report noted the mitigation measures required by FERC as part of its approval of the AIM project (e.g., re-routing, pipeline materials, depth of burial, and concrete barrier positioned over pipeline) that reduce the risk profile of the new pipeline segment in the Village of Buchanan. But such mitigation measures

are not in place on the pre-existing 26-inch and 30-inch segments that run closer to the IPEC facilities. The safety analyses that have been done by the federal government with respect to these segments may not have been sufficiently thorough.

Questions Regarding Previous Safety and Risk Assessments

FERC must re-evaluate whether the NRC and Entergy analyses relied on by FERC during the review of the AIM project were sufficient. The NRC and Entergy analyses concluded that the IPEC reactors could safely shut down if there were a pipeline incident, but it may not have fully considered all necessary and appropriate factors. For example, FERC must assess whether the analyses fully considered the different design characteristics of the structures containing the reactors, as well as those that contain the spent fuel pools and substantial quantities of spent nuclear fuel. There are significant differences between the reactor containment structures and the spent fuel pool buildings. At a minimum, FERC should provide answers to the following questions in order to assess whether the relied-upon analyses were sufficient.

1. Were IPEC's spent fuel pools accounted for with respect to analyzing pipeline rupture hazards at the IPEC site, with respect to both the pre-existing pipelines and the new AIM pipeline segment?
2. NRC and Entergy apparently relied on a software tool known as "ALOHA" in conducting their analysis of potential gas pipeline risks to the IPEC facilities. But NRC Regulatory Guide (RG) 1.91, which speaks to risk analysis of pipeline and transportation explosions postulated to occur near nuclear power plants, does not list ALOHA as a referenced tool for such analysis. A NOAA evaluation characterizes ALOHA as a "compromise between accuracy and speed. . . . developed to quickly assist the responder" in an emergency.² In light of the different purposes of these analytical tools and frameworks:
 - a. Has an RG 1.91 analysis ever been performed for the existing gas pipelines running through the IPEC site?
 - i. Where is this analysis documented?
 - ii. What were the results?
 - b. Is it typical for the NRC to use ALOHA to model a natural gas plume prior to using the RG 1.91 equation? If so, what other nuclear sites has this been used for? Have federal agencies ever performed the RG 1.91 analysis for a site and NOT used the ALOHA model?
3. In the April 25, 2003 NRC "Review of Natural Gas Hazards" at IPEC, NRC Staff recommend one aspect of determining the probability of a vapor cloud explosion to be further evaluated by the NRC's Office of Nuclear Safety and Incident Response. It is not clear whether this evaluation was ever performed. Was this evaluation performed, and if so, when was it completed, and what were the results?
4. There was a 2008 hazards study performed on the existing pipelines at the IPEC site that was not made public. Is this analysis (and its conclusions) available for review by the New York State Agencies? At a minimum, there should be a summary available to review.
5. What were the seismic risk parameters that were applied to the pre-existing pipelines that traverse the IPEC site and what were the seismic risk parameters that were applied to the new AIM pipeline segment?

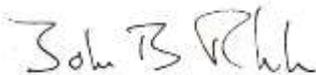
² <https://response.restoration.noaa.gov/oil-and-chemical-spills/chemical-spills/response-tools/aloha.html>

As discussed above, the answers to these questions are necessary to demonstrate the sufficiency of the analyses conducted by NRC and Entergy, and subsequently relied upon by FERC. The answers provided will help to determine the scope of the additional action and review that FERC must undertake.

Thus, while a number of factors have reduced overall risks on and near the IPEC site, several questions remain, as outlined above. These questions must be answered by FERC in order for the New York State Agencies and the public to fully assess the sufficiency of prior analyses. We trust you share our concern for public safety. We appreciate your anticipated response to provide more information to the New York State Agencies and the public, so that there is a more complete understanding of the existing risk profile of the pipelines in the vicinity of IPEC. We urge you to adopt our recommendations to further reduce risks of pipeline incidents near IPEC.

Please find attached a copy of the executive summary of the report. As stated above, the complete confidential report will be mailed to you under a separate cover by U.S. mail.

Sincerely,



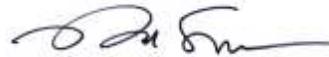
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cc: Howard Elliott, Administrator, Pipeline and Hazardous Materials Safety Administration
Kristine Svinicki, Chair, Nuclear Regulatory Commission