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Comment On: NRC-2021-0125-0002

Holtec Decommissioning International, LLC; Indian Point Nuclear Generating, Unit Nos. 1, 2, and 3; Post-Shutdown Decommissioning Activities Report

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General Comment

See attached file(s)

Attachments

Comment to NRC FINAL October2021



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October 22, 2021

Nuclear Regulatory Commission
Office of Administration
Washington, DC 20555-0001,
ATTN: Program Management, Announcements and Editing Staff.

RE: Docket ID NRC-2021-0125

Dear Nuclear Regulatory Commission,

Thank you for the opportunity to comment.

Grassroots Environmental Education implores the Nuclear Regulatory Commission to work together with FERC and PHMSA to immediately shut down the Algonquin pipelines at Indian Point before any decommissioning proceeds.

It is abundantly clear from the vast trove of supportive affidavits, documents, testimonies and reports that the three Algonquin pipelines at the Indian Point nuclear facility pose an ongoing catastrophic threat to the region, millions of New Yorkers and the Eastern Seaboard. This is further exacerbated by heavy decommissioning operations that are getting underway and can jeopardize pipeline integrity. The most fundamental and well-established procedure on any work site is to shut off the gas in the pipelines. Excavation operations are known to be the most significant threat to pipeline integrity. The Pipeline Hazardous Materials and Safety Administration (PHMSA) states, "Excavation damage is a leading cause of natural gas and hazardous liquid pipeline failure incidents." Furthermore, false representations made by Entergy and the Nuclear Regulatory Commission (NRC) in a "risk analysis" contaminated the pipeline's approval process.

Indeed, the NRC's Office of the Inspector General released a scathing report in February 2020, ***Concerns Pertaining to Gas Transmission Lines at the Indian Point Nuclear Power Plant Case No. 16-024***. The report calls into question the safety of the pipelines at the site noting serious flaws, falsehoods and egregious errors in the so called "risk analyses" performed by the NRC and Entergy that misrepresented the actual catastrophic risk posed by the AIM pipeline and the two old Algonquin pipelines, yet served as the basis for the approval of the AIM pipeline by the Federal Energy Regulatory Commission (FERC). The OIG's report went so far as to say that the analyses "used backward engineering for a desired result."

The inadequate evaluation of risk detailed in the NRC OIG report and the lack of the federally compliant risk assessment as well as such an assessment that factors decommissioning operations leads us to conclude that the current operation of the AIM pipeline and the old Algonquin

pipelines at Indian Point nuclear facility entail “a violation or probable violation of an applicable safety standard.”

Subsequently, the NRC Evaluation Team, at the direction of NRC Chairman Svinicki, issued a report in April 2020. The Evaluation Team’s report recommended that the analysis conducted by Entergy be revisited and that the NRC should review and improve its own processes, procedures, and coordination with other federal agencies. The report also included the findings of the Sandia National Laboratories, which confirmed the catastrophic risk of a potential pipeline rupture at Indian Point concluding:

“The vapor cloud will be heavier than air which will cause it to disperse near the ground and will persist after the pipe has been closed. The dense-gas vapor cloud will propagate through the vegetation and congested areas which increases the likelihood of a deflagration to detonation transition. Simulation results indicate that at approximately 6 to 7 minutes after release the flammability region of the vapor cloud will be either near or begin to engulf the SOCA and at 8 minutes the flammability region would surround the SOCA. Thus, if the cloud is ignited within the flammability region, the explosion would have a high likelihood of exceeding an overpressure of 1 psi at the SOCA. The NRC analysis also considered a 60-minute release using ALOHA to calculate the maximum average sustained flow rate of 311,000 lbs/min. The mass released over the first minute was considered and not the total mass released over 60 minutes. The NRC analysis assumes that since the cloud will be buoyant it will disperse within 1 minute and thus an explosion will occur during the first minute independent of release duration and thus uses a mass of 311,000 lbs for the TNT equivalency calculation. If the cloud is not immediately buoyant, then for a 60-minute release using the total mass calculated by ALOHA the result in 8872 ft or 1.7 miles.”

Additional points included in the NRC Evaluation Team’s report include but are not limited to the following. It is incumbent upon the NRC to follow its own recommendations:

- While the team remained vigilant for issues that could pose immediate safety concerns for Indian Point, most issues could NOT be addressed within the scope or timeframe provided to the team. These issues are presented for further consideration by the NRC, as appropriate.”
- The AIM pipeline near Indian Point is identified as being a High Consequence Area.
- Data from actual accident experiences indicates that it can take minutes to several hours to isolate ruptured pipelines.
- Sandia National Laboratories determined that certain assumptions made by the NRC may not be valid; immediate positive buoyancy of methane cloud and use of TNT equivalency model for this scenario. In the preliminary vapor cloud dispersion simulation, SNL showed a dense methane cloud could form and travel far distances.
- The Oak Ridge National Lab study revealed blast, overpressure, shrapnel and earthquake type effects resulting from an unintended natural gas or hazardous liquid pipeline release are hazards that can adversely affect humans, property and the environment. However, these effects are beyond the scope of this study because they occur immediately after the break and remote controlled valves and automatic shut off valves, which typically require several minutes to close cannot mitigate these hazards.

- The team recommended further work be done by Entergy to show that its prior work is valid. Based on concerns raised by external parties and substantiated by the team, the team recommends that the NRC request that Entergy evaluate the impact of Enbridge's updated information that a 3 minute closure time for the isolation valves is a "best case scenario and that pipe length that may need to be isolated would be greater than 3 miles. Entergy should revisit its analysis by applying updated assumptions or provide a basis for why the updated information does not significantly impact the result of the conclusions previously presented."

- Recommend improvement in certain NRC technical work products, including peer review.

- Risk analysis – hand calculations performed by Entergy and confirmed by NRC were unsigned and undated.

- This petition also exposed the fact that for certain skill sets such as external hazard analysis, limited expertise is available internally to the agency. This weakness limits the agency's ability to assign staff as peer reviewers of agency calculations to conduct independent reviews of prior agency decisions.

- Update TNT equivalent in Regulatory Guide 1.91, which provides no guidance on heat flux, which is subject of DOT regulations and according to some pipeline experts may be the controlling issue to potential nuclear power facility impacts.

- Poor coordination between FERC and NRC. The NRC may not to have provided any formal correspondence to the FERC beyond the Sept 2014 comment on the draft EIS...and FERC's commission relied heavily on NRC's expertise to determine if Indian Point could be safely shut down in the event of a pipeline accident, for approval of the portion of the AIM project that crossed IP property. It is unclear whether NRC provided any regulatory context for its review to the FERC in 2014 teleconference. NRC declined to be a cooperating agency in FERC's review of the AIM project.

- The NRC needs to improve its processes and practices for technical reviews, inspection support, petition reviews, pipeline analysis and coordination with other agencies.

- Sandia National Laboratories noted that it is evident that the surrounding area is highly congested with vegetation, structures and vehicles indicating that more detailed analysis would be warranted based on recommendations in both guidelines. This has significant consequences for explosion hazards since dense gas vapor clouds in stable atmospheric conditions can travel significant distances and will persist much longer than 1 minute. Additionally, the dense vapor cloud would travel through the surrounding vegetation and other infrastructure to provide an environment for a deflagration to detonation transition (DDT). Particularly since the natural gas is not 100% methane but can have up to 5% of other hydrocarbons such as ethane and propane. Small additions of these hydrocarbons can increase the sensitivity of the gas to detonation..."

-There are of course other pipeline failure mechanisms of concern besides the low toughness seam weld issue. These include corrosion (including corrosion and cracking) excavation and other outside force damage, equipment failures and incorrect operation. The bulk of these were associated with external force damage due to excavation or other forces (vehicular damage) such external force damage would likely lead to a puncture of the pipeline, rather than a rupture of the pipeline, but if that puncture were large enough that it might lead to similar consequences to Indian Point equipment as a rupture.

Extensive supportive documentation also includes information from Rick Kuprewicz, renowned pipeline forensic expert and President of Accufacts, who stated to the NRC Petition Review Board:

<https://sape2016.files.wordpress.com/2014/05/transcript-7-15-2015-ml15216a047.pdf>

“I reviewed a series of rupture analysis statements concerning the AIM 42-inch transient pipeline rupture near the Indian point plant....I’ve got to come to the conclusion that they do not represent the transient dynamics associated with a 42-inch gas transmission rupture should it fail near Indian Point ~~nuke plant~~. For example, based on extensive experience, pipe fracture mechanics will demonstrate that gas transmission pipeline ruptures are always full-bore ruptures, even buried. Pressure drop will not be a timely indicator of pipe rupture, even for a 42-inch pipeline. Assumptions about closure within three minutes to cut off gas flow near the plant are unrealistic and unscientific. A further recent analysis concluded that a rupture release of one hour on the 42-inch pipeline does not impact the nuke plant needs further explanations, as it makes no sense for this system. The above key assumptions, as stated in agency studies, ignore proximity to a compressor station upstream and ignore system dynamics associated with a gas transmission pipeline rupture that increases gas releases well above pipeline flow before the rupture.

Quite simply, agency studies are violating the basic laws of science concerning gas pipeline rupture and associated forces that result in massive cratering, pipe shrapneling, and violate the science associated with such releases, especially a 42-inch pipeline.... It appears that various agencies are attempting to dismiss risk as low when gas pipeline rupture may drive the nuke facility to non-safe shutdown in a highly sensitive area. Agency studies create the appearance of risk management tampering to favor a project agency decision and raise the question, Are involved agencies capable of performing a scientifically neutral study for such a sensitive issue?....Lastly I must comment that a truly independent safety analysis should be performed, subject to a reasonable open peer review. Security claims should not be permitted to shelter malfeasance in a scientific method involving incomplete risk analysis for such a highly sensitive infrastructure.”

Dr. Irwin Redlener, Former Director, National Center for Disaster Preparedness, Earth Institute at Columbia University stated: (As of June 2020, Dr Redlener is Director, Pandemic Resource and Response Initiative (PRRI) and Senior Research Scholar at the National Center for Disaster Preparedness at Earth Institute, Columbia University)

“With the release of their risk analysis and letter to the Federal Energy Regulatory Commission calling for urgent action, New York State agencies confirmed the catastrophic risks posed to millions of lives by the co-location of the high pressure pipelines at the aging Indian Point nuclear plant. We strongly agree that close proximity of the pipelines to critical safety infrastructure and to highly radioactive nuclear fuel stored on site is a persistent and significant threat. This is particularly alarming as we have seen an increase in pipeline failure rates, especially in newly constructed pipelines. To make matters worse, decommissioning and decontamination work anticipated with the closure of the plant...will certainly involve heavy excavation, which may well further jeopardize pipeline integrity. From a public health point of

view, the flow of gas at Indian Point presents an enormous risk to communities and families throughout the region. Shutting down this gas flow should happen immediately in order to avert the possibility of a catastrophic explosion that would have widespread, deadly consequences in our region.”

Alarming, no further action was taken and Indian Point’s ownership is now in the hands of Holtec, the company responsible for decommissioning that issued the PSDAR without any mention of the pipelines; no federally compliant analysis of the pipelines nor such an analysis under these new dangerous decommissioning conditions, heavy excavation and deconstruction activities; no emergency planning in the event of a pipeline rupture while decommissioning – in fact, residents receive conflicting emergency postcards telling them to evacuate AND shelter in place in the event of an incident at the nuclear facility/and or a pipeline rupture.

In closing, it is imperative that the NRC act with utmost urgency to coordinate with FERC and PHMSA to immediately shut the gas in the Algonquin pipelines before the decommissioning process.

Respectfully submitted by,

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